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LEVEL AND STORY DESIGN IN CHOOSE YOUR OWN ADVENTURE GAMES

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<p>Tämä tutkimus keskittyi tekstiseikkailupeleihin. Sen aikana tutkittiin seikkailupelien tärkeimpiä rakenteita ja pelimekaniikkoja. Samalla hahmottui, mitä kaikkea pitää ottaa huomioon haarautuvaa tarinaa kirjoittaessa ja tekstiseikkailua rakennettaessa. Tämän tutkimuksen toivotaan olevan hyödyllinen apuväline kaikille tästä kyseisestä pelityypistä kiinnostuneille, jotka aikovat kirjoittaa oman tarinan.</p> <p>Tekstiseikkailuja tutkittiin muutaman olemassaolevan esimerkin kautta (Colossal Cave Adventure, Fighting Fantasy: The Warlock of Firetop Mountain, 80 Days), jotta saataisiin parempi käsitys siitä, mitkä ovat näiden pelien ydinrakenteet ja miten ne näkyvät pelien aikana sekä niiden tarinassa. Näitä rakenteita tutkittiin peleissä esiintyvien esimerkkien kautta.</p> <p>Tutkimus esitteli myös muutaman ilmaisen työkalun tekstiseikkailuiden kirjoittamista varten. Niistä esiteltiin perustoiminta, sekä mitä vaihtoehtoja ne tarjoavat tarinan kirjoittajalle pelitoimintojen suhteen. Yksi esitellyistä työkaluista (Inklewriter) valittiin tämän tutkimuksen ohella kirjoitetun A Day in Tumbleweed -tarinan kirjoitusaluslaksi. Tarinan kirjoitusprosessi sekä aikataulu esiteltiin, jotta ne tarjoaisivat lisätietoa kaikista niistä työvaiheista, joita tarvittiin tarinan kirjoittamiseksi julkaisukuntoon.</p> <p>Tutkimuksen lopussa toteutettiin pelin käyttäjättestaus nimettömänä kyselylomakkeen kautta. Siihen saatiin yksitoista vastausta, mikä ei riitä kovin luotettavan tuloksen saamiseksi. Siitä huolimatta palaute antoi hyvää tietoa pelin toimintojen sekä tarinan suhteen. Huomattiin, että luotu tarina tarvitsee lisää työstöä toimiakseen paremmin, ja että se oli liian suoraviivainen. Se oli kuitenkin odotettavissa, sillä luotu tekstiseikkailu oli lyhyt ja yksinkertainen.</p> <p>Tämän tutkimuksen julkaisun aikaan peli on pelattavissa internetissä.</p>		
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<p data-bbox="138 772 1451 1035">Abstract</p> <p data-bbox="138 846 1451 1035">This study focused on the text adventure genre. The core mechanics and building blocks of the genre were explored, the process of creating a branching story investigated, and the intricacies of what needed to be taken into consideration during the creation process were also explained. It is hoped that the study proves to be of use to others interested in story creation within this particular game genre.</p> <p data-bbox="138 1066 1451 1245">Research on the core game mechanics was done through the analysis of existing titles (Colossal Cave Adventure, Fighting Fantasy: The Warlock of Firetop Mountain, 80 Days) to gain an understanding of what aspects were part of their core gameplay and how they were implemented during the story. These aspects were then discussed in greater detail, supported by examples from the analysed games.</p> <p data-bbox="138 1287 1451 1497">The study also introduced several free tools for text adventure creation, detailing how they work and what possibilities they offer for developers who wish to create their own stories. One of these tools (Inklewriter) was chosen as the software in the creation of the author's own short text adventure, A Day in Tumbleweed. The creation process was detailed to give insight into the schedule and the different steps that went into the production to create a publishable version for testing.</p> <p data-bbox="138 1539 1451 1749">User testing on the created game was done via a small anonymous online survey. Eleven people responded, not giving enough material for a very reliable result, but providing enough feedback to make conclusions on the success of the game from the point of view of the included game mechanics and their reception. It was found that the story needs improvement and that the game itself was a bit linear, but that was to be expected due to the short length of the story and the simplicity of it.</p> <p data-bbox="138 1791 1451 1833">At the time of publishing this thesis, the game is available online.</p>		
<p data-bbox="138 1833 1451 1942">Keywords game design, text adventure, thesis, storytelling, level design, adventure games, games</p>		

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GLOSSARY

In this thesis, some game design field specific terms and concepts are used. These concepts have been gathered in a list below with simple explanations.

Critical Path

The critical path is the journey the player has to take through the game to reach the end screen. Depending on the case, it can be measured as the longest or the shortest path necessary to complete said goal (Four, 2014). In this thesis, the critical path has been chosen as the term to describe the shortest possible route the player has to take to complete all of the necessary steps to reach the end of the story.

Hypertext fiction

A work comprised of a set of pages or text nodes that are connected together in a non-linear fashion with hyperlinks. These pages can contain information on a specific topic, or in the case of hypertext fiction, they tell a story. Hypertext fiction requires clear rules to work, offering said rules to the readers with instructions on how to navigate the story or to create more. (Cicconi, 2000.).

IF (Interactive Fiction)

IF, or Interactive Fiction, is very similar to hypertext fiction. However, the term interactive fiction is more widely used for games due to the fact that it does not limit itself to purely text-based interfaces, and can instead feature graphical adventures like video games as well. The fiction is navigated via links or commands, which are introduced to the player either at the start of the fiction or during it. The work provides the interactor with feedback, and accepts input in return. (Montfort 2003, pp.13—15.)

Integrator

Integrator is the term for the person interacting with a work of hypertext or interactive fiction. In an even wider sense, it can be used of anyone who interacts with a product and gets feedback from it, and whose interactions create a

difference in what they are interacting with. An interactor both consumes the fiction they are reading and controls it with their choices or text inputs. (Montfort 1995).

Playthrough

The act of playing through a game from start to finish. Usually includes the data on how long playing through the game took, and what actions the players took during their game experience. Lately, the term has also been associated with the act of players recording their full game experience and sharing it online. In this thesis, only the first definition of the word is required.

Room

The same way hypertext fiction has text nodes, text adventures have rooms. These rooms are areas within which the player can interact with objects or other characters. The rooms offer information about the environment, as well as ways to leave and to enter other rooms. They are the basic building blocks of text adventures.

Text parser commands

A parser, in the early days of text adventures, was the player giving commands to the game in order to interact with it. Text adventures had a parser command library: a list of commands that the game would recognize as orders to perform specific actions to move the player onwards. Such commands would usually consist of verbs (such as look, move, use) and then nouns that would combine into actions. For example, the words use sword would mean attacking or hitting something with the sword. These parser commands formed the base of text adventures and limited what the player could do.

1 INTRODUCTION

This thesis study emerged from the author's own personal interests in interactive fiction and choose *your own adventures*. The thesis explores the different gameplay mechanics and features that are present in the text adventure genre and then uses that knowledge in the creation of a small game. What is the process like, and how does it go from start to finish? What are the things that have to be taken into consideration when creating a branching story? These are the questions this study aims to find an answer for.

The thesis starts with the introduction of the text adventure genre and its history. A short introduction will also be given to the interactive fiction genre as a whole, as the *choose your own adventure* titles are so undeniably a part of it. These chapters will be followed by a deeper exploration of the basic building blocks that make up these games, focusing on the most common gameplay mechanics with the help of comparative analysis.

After the theory has been explored, the thesis will focus on introducing a small text adventure called *A Day in Tumbleweed*; a game created purely for the purpose of this thesis. This project's goal is to introduce the game design process revolved around story creation and the practice of describing a game world through written word alone. This is done through a progress report detailing the steps taken from the planning stage to publishing a playable version of the game to the public. Success of the game's story and playability are measured through a small online survey. The results are then analysed, some bugs fixed, and the discovered problems discussed as part of the game's future development.

With the aid of both the theory and the project, this thesis hopes to explore the questions of how interactive fiction is written and how the branching story is designed to create an interesting, compelling experience for the players. In the conclusions, both the research findings and the outcome of the created game are briefly summarised, analysing the results and inspecting how successful the project was as a whole, as well as what benefit it had.

2 AN INTRODUCTION TO INTERACTIVE FICTION AND TEXT ADVENTURES

Interactive fiction (also known as IF) is a large genre that contains more than just games, but it warrants its own short introduction due to being such an integral part of the full picture. In his book *Twisty Little Passages: An approach to Interactive Fiction*, the author Nick Montfort explains that interactive fiction is, in essence, a world or story that the reader/interactor can interact with and thus change in meaningful ways to achieve a desired goal or the story's end. (Montfort 2003, pp.13–14) The medium in question can be written works, movies, games, or any work of fiction that fits the definition of a person interacting with it and altering the story. The interaction can be achieved through text parsing (like in text adventures), or choosing from different alternative paths the story offers through its medium. It can be pre-determined through set dialogue options or somewhat random and achieved through chat bots that react to what the interactor is writing on the screen.

The beginning of interactive fiction is hard to determine due to its ever-changing definition (these ranging from interactive texts a reader could read in any order to a fully visualised interactive game). Generally speaking, its rise to public knowledge happened from 1950's onwards with the birth of adventure books and early computing devices at MIT (MIT School of Humanities, Arts, & Social Sciences) that allowed people to play Pong and other interactive games.

The theory of the interaction itself in this genre of narrative and text-based works is based on the idea that the work itself is not a narrative until an interactor appears to experience the work and choose the path for the narrative to take. How this interaction happens depends on the format of the interaction and the means with which the interactor interacts with the work. In his book, Montfort (2003, pp.23) lists a few possible definitions with which an interactive work can be identified and understood:

- The work produces and accepts text in return
- It can create a potential narrative, reacting to what the interactor is providing to it in order to create it

- It stimulates a world for the interaction to take place in
- It provides the structure and rules with which the interaction can take place (game rules, book structure, etc.)

In essence, interactive fiction lends itself very well to the world of games. Games by their very nature are very interactive, and they require an input from an outside source to work and to provide feedback to the player playing them. They offer simulated worlds and have their built-in rules and regulations which the player needs to learn and obey in order to progress. One of the earliest forms of interactive fiction games were *choose your own adventures*, first appearing in simple text form in both books and early computing devices.

2.1 Choose your own adventures

This book is different from other books. Those were the words that greeted the readers of the earliest *choose your own adventure* books on the opening page. Following that were instructions that the book was not to be read in order page by page, but by following the instructions and choices they would do.

A *choose your own adventure* is a branching story that the reader/player can have an impact on to an extent with their choices and parser text commands, and therefore it falls under the genre of interactive fiction. In their earliest form, these stories were published in books, with the reader having a basic choice between options A, B, or C and turning to the page said options told them to go to. A good example of this is the original book series called *Choose Your Own Adventure*, published by Bantam books in the 1980's. In those books, every wrong decision could mean instant death for the main protagonist the reader is controlling, resulting in the reader having to start the book again all the way from the beginning. (Sooney, 2013.) The joy of discovering the right path through these dangers was part of the fun and the charm, as well as finding all of the different endings and ways to die.

On computers and other digital platforms, the genre has gone through a lot of evolution after its debut in book form. The introduction of computer graphics and

the ability to add new game mechanics like characters, weapons, and enemies into the game's core have made the stories merge and become a part of the roleplaying genre. The games no longer rely on simple path choices and pure text based commands, and instead they introduce random number generation through dice rolls and character statistics. Good examples of these new mechanics can be found from the *Fighting Fantasy* –books and the game *80 Days*, which will be introduced in more detail in chapters 4.1.2 and 4.1.3.

2.2 History

The genre first emerged in the 1970's in the form of gamebooks known as Choose your own adventures. One of the first among them was *The Adventures of You on Sugar Cane Island*, written by a lawyer Edward Packard. The stories were originally born out of bedtime stories he had told his children, which had had different endings based on what his daughters wanted the main character do to. The stories then became the first book, and then slowly evolved into a book series aimed at children. (Kraft 1981, pp.6.)

At the same time in the fast emerging electronic platforms, titles like *Colossal Cave Adventure*, and *Adventureland* a few years later were distributed around in companies and universities, becoming the first interactive fiction games to be played on mini- and mainframe computers. One of the most popular titles — and the first to see widespread commercial release — *Zork I*, was released in 1980, quickly becoming a staple of the genre and a guideline for many others to follow in terms of mechanics and story style. A title that followed, *The Hobbit*, sold over a million copies, which was huge at the time. (Adventure Classic Gaming, 2009.)

One of the reasons for the genre's popularity in the computing world was its simplicity. The games demanded very little computing power from the early machines that ran them due to a lack of graphics and their main reliance on pure text, making them widely useable by the computing devices of the time. People were also drawn to the illusion of choice provided by the linear stories and the paths the readers could choose to take as their characters. Both the gamebooks and virtual interactive fiction provided people with a lot of replayability due to their

branching stories. No two stories were the same, if the reader decided to take a new path the next time they experienced it. Even the first gamebooks had multiple endings, some of them good for the player's character and some of them bad.

2.3 Games today

In this modern age, games rely heavily on graphics. Game design companies compete vigorously over who has the best, most realistic graphics and who can make their world as open and as interesting as possible. Interactive fiction in its simplest form existed as pure text (text adventures like the *Zork* series and *Colossal Cave Adventure*), which was a key point in its ease of distribution to users. Basic graphics came along with *The Hobbit*, and many more titles that followed. The environments existed as simple illustrations, helping the player identify where they were and what they were doing.

After that, the genre has been slightly outmatched by new, visual heavy game titles. The desire to have beautiful graphics and interactive gameplay seems to have overthrown interactive fiction's simple text-based design. The genre is not completely gone and there are free tools online for developers to use that are created purely for the purpose of encouraging people to create their own stories (such as *Inklewriter* and *Quest*). Most of them do not even require programming skills, and as such are more approachable by the general public. Despite this, text adventures and *choose your own adventures* remain a rather small niche in the gaming world. Purely text-based interactive fiction games have made way for graphic adventures.

Graphic adventures, in their simplest definition, are adventure games that have had graphics added to them to convey the environment to the player when they play the game. Sometimes the games allow movement and advanced interaction with the game (point-and-click adventures), and sometimes the backgrounds exist purely to convey the environment like a map, with the interaction happening through text parser commands (e.g. *Mystery House*). Graphic adventures can be split into several sub-categories such as point-and-click adventures, escape room

games, puzzle adventures, exploration games, visual novels, and interactive movies among many others. Graphic adventures are not limited to virtual products, and it could be argued that even the gamebook genre falls under this category sometimes due to having illustrations to aid the players and to give visual representation for enemies, items, and the environment the player encounters.

Last year in August 2016, *Fighting Fantasy* took a leap even further by releasing their first book, *The Warlock of Firetop Mountain* (which is introduced later in chapter 3.1.2), as a 3D board game adventure through Steam. The mechanics are similar as they are in the book (with combat, for example, relying on stamina, skill, and luck) but the story itself has been nearly completely transformed from text form into a 3D, asymmetric dungeon adventure (Steam, 2016.) The original texts and some of the illustrations still remain as they describe the character's progress through the cave system, but the imagination's role in picturing the scenes the player encounters has been replaced by ready-made graphics and sounds. The player does not need to keep track of inventory or health changes anymore, either: everything has been made simple and easy to access for new players.

This sort of transition from the original text adventure to a new 3D adventure is perhaps unavoidable. It takes away some of the charm and excitement that the original books had, where the reader never quite knew what they would face next, or what lay hidden behind the next door they opened. On the other hand, this change is necessary to keep up with the changing player base and its demands, and it could in turn introduce gamebooks and the original text adventures to a whole new generation.

3 EXAMPLES OF CHOOSE YOUR OWN ADVENTURES

Text adventures, like any other game genre, consist of different mechanics and structures that help players identify it. This chapter will introduce some of those mechanics and explore what they are, as well as how they are meant to affect the process of designing the level and the story narrative. It should be noted that the

genre is old and as such some of these mechanics may seem out-dated or downright unfair towards the players today.

The chapter is divided into several sub-sections that focus on game design and the story aspects of the games. These two elements work in tight unison to make up what is known as the text adventure genre, and its interactive nature. The text will discuss different level mechanics through small examples from existing games and then move onto how the story in a branching narrative game is written.

3.1 Introducing the analysed game titles

To introduce and analyse the *choose your own adventure* –genre, three different game titles were chosen for analysis. These three titles each represent different styles, platforms and eras in the history of the genre to showcase the differences those create in the specified mechanics that are introduced later on in the chapter. The three titles chosen are *Colossal Cave Adventure* (the earliest version of the game that could be located), *80 Days* (a graphic adventure available on Steam), and *Fighting Fantasy: The Warlock of Firetop Mountain* (a *choose your own adventure* gamebook).

The three games will be introduced in chronological order, starting from the oldest example and moving on to the newest. A brief introduction will be provided for each and then they will be used as examples when the text focuses on particular building blocks of the genre (characters, worlds, etc.). The aim is to showcase the design mechanics and differences in release platforms.

3.1.1 Colossal Cave Adventure

Colossal Cave Adventure (originally named *Advent* due to character limitations in computing devices back in the day) was developed by William Crowther in the 1970's. He was a cave explorer and an avid *Dungeons & Dragons* player who moved on to develop a cave exploration adventure game for his two daughters using the FORTRAN programming language. The game then spread to their

friends but did not see a more public release until it was discovered again at SAIL (Stanford Artificial Intelligence Lab) by Don Woods, who then got permission to expand it. It was later transferred to the C UNIX systems, which most devices at the time were running. They got permission to distribute the game as the official version, *The Original Adventure*, in return for a small royalty to the original creators. Its fame meant that it was later included in the new IBM PC machines as a default software, and was even used to test new hardware in development due to requiring a large variety of different programming functions to run. (rickadams.org, n.d.)

The original game consisted only of a text screen which described events and the player's surroundings to them. To interact with the game, the player typed in text in the form of verb and noun parsers (e.g. *get axe*, *attack dwarf*) to make the game react and change accordingly. These commands would then prompt a reaction from the game and help the character progress through the presented puzzles (or to travel from location to location, as is shown in figure 1 where the player types "w" to travel west). Due to the limited nature of the parser program, these commands had to be very simple and consist of only a few words. If the player tried to do something that the game was not programmed to respond to, it would ask for further clarification or merely state that it did not understand the command.

```
low wide passage with cobbles becomes plugged with mud and debris here, but
an awkward canyon leads upward and west. A note on the wall says:
    Magic Word "XYZZY"
>w
You are in an awkward sloping east/west canyon.
>w
You are in a splendid chamber thirty feet high. The walls are frozen rivers
of orange stone. An awkward canyon and a good passage exit from east and
west sides of the chamber.
>w
At your feet is a small pit breathing traces of white mist. An east passage
ends here except for a small crack leading on.
Rough stone steps lead down the pit.
>d
You are at one end of a vast hall stretching forward out of sight to the
west. There are openings to either side. Nearby, a wide stone staircase
leads downward. The hall is filled with wisps of white mist swaying to and
fro almost as if alive. A cold wind blows up the staircase. There is a
passage at the top of a dome behind you.
Rough stone steps lead up the dome.
>d
You are in the hall of the mountain king, with passages off in all
directions.
A huge green fierce snake bars the way!
>
```

Figure 1. Example of how the user interacts with the story in Colossal Cave Adventure. (The Game Company, 2013)

Many reconstructions and edited versions have been made of the game over the years, some in their original format and some with added graphics and sounds. For the sake of the analysis done for this thesis, an online reconstruction of the game was played. It does not completely reflect the original in style, as the version available for this thesis featured added user interfaces for movement, a command list, and an optional map that could be activated for ease of navigation. Regardless, the story itself was intact and kept the original's charm and humour, and therefore it was deemed valid enough for analysis purposes. The analysed version in question can be found online at Gobberwarts with the name *Crowther Advent* (Gobberwarts.com, n.d.).

3.1.2 Fighting Fantasy: The Warlock of Firetop Mountain

Fighting Fantasy is a series name for a collection of gamebooks. They are not quite like traditional gamebooks, as they also require the player to keep track of characteristics and inventory which is more common with virtual games. They also feature illustrations to showcase enemies and locations to the player (example in figure 2). To play a *Fighting Fantasy* book, the reader needs two basic dice, a pen, some paper and an eraser. At the start, they will roll dice to determine numerical values for their different characteristics (in the case of this book; skill, stamina and luck) to create their character (Fighting Fantasy, 2012). These scores will later on help the player to overcome fights and different score checks during the game when they encounter obstacles that they need to overcome.



Figure 2. Russ Nicholson's iconic illustration of the warlock gave players some aid in imagining what they were facing (Russ Nicholson, 1982.)

Aside from these new abilities and dice rolling, the gamebook also features character sheets, inventory management, and puzzle solving. The player may encounter closed doors, different enemies and other obstacles that are solved with a creative use of magic, items or reasoning. The story advances in a classical gamebook fashion, meaning that the player first reads through a paragraph or two describing the setting and the occurring events to them before having to choose what path/dialogue option to follow. If the decision leads to a fight, then dice rolling combined with the pre-rolled characteristics will determine the player's fate. (Fighting Fantasy Rules, 2012.)

The Warlock of Firetop Mountain was the first book of the series and was published in 1982. It was inspired by the new phenomenon of *Dungeons & Dragons*, when two authors called Steve Jackson and Ian Livingstone wanted to have a roleplaying experience, but through the simpler format of a book. The idea of using numerical values and dice in a gamebook was new at the time, and a

massive factor in generating interest and publicity for the book. In this book, the player travels to Moonstone Hills to face off with an evil warlock named Zagor who rules over the surrounding area with ruthless armies of orcs, goblins and trolls. (Fighting Fantasy, 2012).

The success of the books was, in the era of high fantasy, phenomenal. It started slow, but word spread quickly among the genre's enthusiasts and reprints of the original book were being made very quickly. Sequels were demanded, and the series was born. Now, 35 years later in 2017, the series is still on-going, with a new book scheduled for release this year.

3.1.3 80 Days

80 Days is one of the finest examples of modern interactive fiction games. It was released on mobile platforms (iOS & Android) in 2014, and on PC in 2015. It was developed by Inkle with their own software that they have created specifically for interactive fiction writing. The game has received numerous awards for both its design and narrative (including Time's Game of the Year, and the Excellence in Narrative 2015 award from Independent Games Festival). It is a largely single player experience as every player takes their journeys alone, but during playtime it is possible to see other players travelling from location to location on their own quests against the clock.

The story itself is familiar in its setting to everyone who knows Jules Verne: the player embarks on Phileas Fogg's grand adventure to circumnavigate the globe in less than eighty days. The player takes up the role of Passepartout, Fogg's loyal companion. During the trip, the player's role is to overcome obstacles, keep track of the pair's travel finances and also make sure that Fogg stays in impeccable travel condition.

The gameplay in *80 Days* vaguely follows that of the first adventure gamebooks, in which the reader had several different paths to take in reaction to what was written on screen, and those decisions would then lead onto different conclusions to situations and conversations, leading the story forward (figure 3). However, in

80 Days, the player also deals with resource management through an in-game inventory and monetary funds in order to keep travelling. Resources can be bought and sold, and different in-game locations visited inside new cities to earn money or to withdraw money from banks.

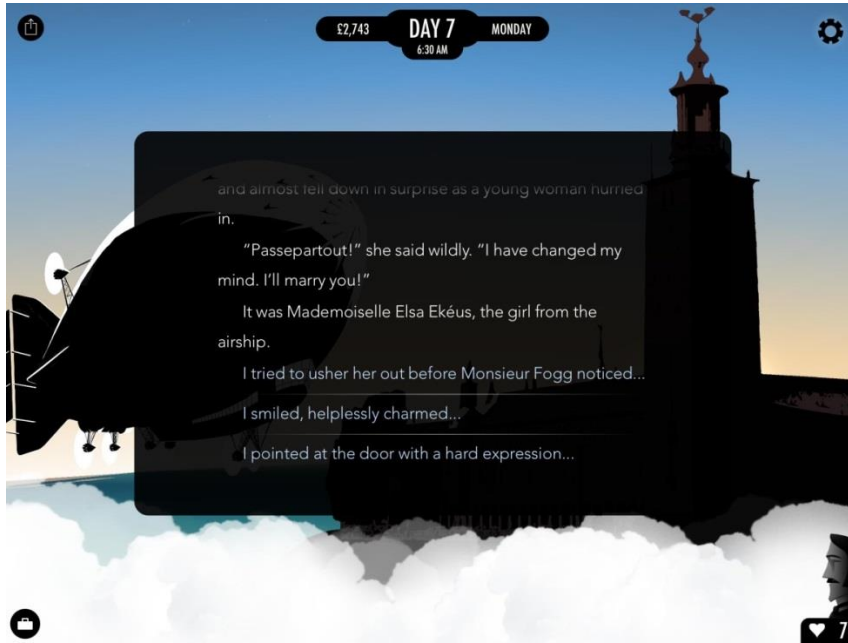


Figure 3. The text narrative in *80 Days* offers the players many different paths to take (Inkle Ltd, 2014).

Different events in cities keep the game fresh and keep the player interested in the travel. Multiple different paths through the world also ensure that the gameplay in each playthrough is a little bit different, which greatly increases replay value. The game features beautiful graphics and sound ambience, which helps the player get immersed in the story – in other words, the game helps the player navigate with other clues than the text alone.

4 THE BUILDING BLOCKS OF CHOOSE YOUR OWN ADVENTURES

In this chapter, game design elements *in choose your own adventures* will be separated into smaller sections. The sections themselves either focus on the player (their avatar and their behaviour during gameplay) or the gameplay itself (style, puzzles, and world design) as these were considered as the two main sections that make up the adventure's core. The player's personification, the avatar, will be the element with which the player interacts with the world – and the

world in turn changes based on their behaviour. How much the world changes and how the player can interact with it are determined in the rules of the game they have chosen to play.

Each section will introduce different examples from the introduced games to illustrate how the different areas vary from game to game and how the sections can be seen during gameplay. The game's platform also has an effect on the design choices made, and these examples aim to provide an insight into those as well, showcasing how the different publication platforms show up in the design process.

4.1 Gameplay

The gameplay in *choose your own adventures* is, most of the time, very straightforward. The players take control of their character (self-created, assigned, or non-specified) to interact with the world the game is introducing to them. The setting of the game is introduced very briefly through a short introduction, as is the goal the player is trying to reach. The player then does everything in their power to reach said goal and emerge from their adventure victorious.

The interaction with the game world takes place by either issuing commands to the game through text parser commands (*Colossal Cave Adventure*) or through ready-made choices (*80 Days/Fighting Fantasy*). Along with this, the players may have an inventory of items to use during their journey to overcome puzzles and to help them with the challenges they may encounter. A map of the world is usually not provided so the player is responsible for drawing that for themselves should they encounter a need for it (e.g. when entering a maze like in *Colossal Cave* and *Fighting Fantasy*).

How the players navigate the world depends on the platform the game is on, and the direction the developers have taken when creating it. The most basic gamebooks only offer the player a few choices after brief narratives in order to guide the story forwards (the player has the option to choose A, B, or C and the

story will change depending on their choice). The *Colossal Cave Adventure*, the oldest of the analysed examples, features free movement control through text commands. The player inserts the direction they want to travel (north, east, south, and west) and the game responds to the command if it is possible for the character to travel in that direction. To give the players an idea of where they can go, the game offers the option of using the *look* command to give them more information on what the area around them looks like and where the potential exits are.

In *80 Days* the player has both a visual world to explore and click on with a mouse, and some story narrative directions to take with dialogue options. *Fighting Fantasy's* navigation system, on the other hand, is limited by its platform of choice. Being a book, it cannot offer free navigation of the presented world and is therefore limited to the narrative choices. This style of gameplay can be problematic in the way that it rarely offers the player an option to go back to an area. Once the player has left a room, it is done with. If something is missed along the way it can, in the worst case scenario, lock the player out of winning entirely or make it a lot harder.

Victory is achieved in different ways, depending on the game that is played. In traditional gamebooks like the first *Fighting Fantasy*, the player's goal is introduced at the beginning and they must strive to reach it (defeat the warlock and obtain his treasure). In *80 Days* the goal follows the source material in the sense that the player must successfully travel around the world in under eighty days to win. Additional goals can be achieved through scores and leaderboards. In *Colossal Cave Adventure*, no actual goal other than reaching the maximum score of 350 points is ever introduced. Once the player managed that, they officially completed the game and succeeded in exploring everything there was to explore.

4.2 Story

In *choose your own adventures*, the story narrative (along with the level design) is the most important design element. The story is what introduces the world,

guides the player, and gives the player's actions meaning, especially in the case of non-visual gamebooks and text adventures. Constructing the story and the world it takes place in is a multi-step process that has to answer some of the most basic design questions of who, what, when, where, why, and how in order to be effective and easily understood by the players that experience it (Heussner, Finley, Brandes Hepler, Lemay 2015, pp.52).

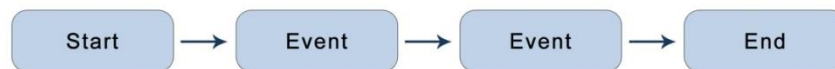
In his GDC speech, a game developer called Jamie Antonisse also discusses the differences and similarities between traditional narratives and game narratives. In traditional narratives, a hero is usually called to action through events that lead to them encountering their antagonists and challenges. They need to then overcome these in order to achieve their goals, and the audience emphasizes with them and their struggles all the way to their triumph. A game narrative in comparison takes the player and puts them in charge of performing actions that influence the events. They learn to master the rules in the system they have been placed in and overcome the challenges (the game) in order to reach their goal. The player is the hero behind the character's actions. (GDC, 2014.)

When talking about story narratives, the most common style that usually comes to mind is a linear narrative as it is used in movies, books, and other traditional media. A linear narrative is a straightforward path where one event follows another, creating drama and unfolding the story from start to finish without any viewer/reader input. That is not the style most commonly used for *choose your own adventure games*, though. The text adventure genre relies on a branching narrative instead.

A branching narrative still consists of events that affect the world and follow one another, but as the name suggests the narrative also offers additional, optional paths and tasks to choose instead (figure 4). In this case, the person experiencing the narrative has conscious choices to make that will affect the story they are told. The story will still have a so called *critical path* that unfolds the main storyline (moving from one event to another), but they also have a choice to experience things not necessary for it (tasks). These tasks can be small (who to

talk to) or really big (life/death questions) depending on the story and the impact they're supposed to have. What is important is that the story respects the choices the player makes, and that they have meaningful effect on the rest of the story as it progresses. This effect should also be in scale with the decision made. If it is a moral one, the moral chosen has an impact on the outcome as well. (Heussner, Finley, Brandes Hepler, Lemay 2015, pp.111–115.)

Linear Narrative



Branching Narrative

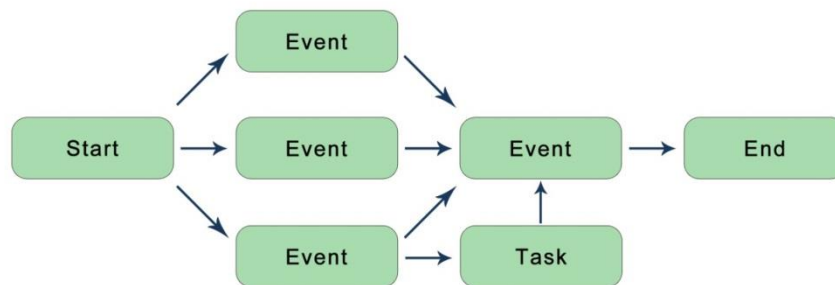


Figure 4. Differences in structure between a linear and a branching narrative. (Lyömiö, 2017)

When constructing a branching narrative story, what the developer should keep in mind are the building blocks of it. What is the player's role and what are their goals? What sort of conflict (barriers/obstacles) will they encounter? What choices do they have to make along the way (and are they tactical/moral)? Where do they get the information they need in order to proceed and how? What events unfold as the result of the player's actions and how they shape the world around them?

To keep the story flow going, all of the above should link together. The player's actions should be always be tied to the rules provided (game limitations), and all of the events that occur should grow around the actions the player takes. Using other non-playable characters (NPCs) as information resources gives the story life and makes it interesting to play. Identify the key choices the player needs to make, and ensure that the effects of those choices are visible to the player. If the

design is successful in all of these areas, the player will end up feeling like they have had a meaningful experience interacting with the game. (GDC, 2014.)

The analysed games also featured a branching narrative design without exception. In the case of *Colossal Cave Adventure*, the player can freely move through the available cave rooms and experience the events in them in the order they wish (though sometimes facing enemies without having first acquired the necessary items to defeat them leads to an unexpected death). In *80 Days*, the player is free to choose which countries and which cities they travel to. Once there, they then experience scripted (but randomised) events that happen only in those cities, moving the story onwards with small side tasks that support the main narrative. *Fighting Fantasy* is a very traditional game book in a sense that it offers very limited freedom to move and certain plot points can only lead to pre-determined events. Even so, the player does have some control on which directions they want to travel to, and in what order. Backtracking does not work, so those decisions could very well determine success or failure very early on in the game.

The world setting in *Colossal Cave Adventure* is very minimalistic. The player is presented by a short narrative introduction, in which they are informed of a cave that resides nearby with countless puzzles and riches hidden within. The map of the cave system is massive, with caves looping back in on themselves and dead ends offering unexpected dangers. There is no actual prompt to explore but the player is placed right outside, and then directed in the right direction to start doing so. As far as goals go, exploration is the key in this game. Originally, the main goal in order to beat the game was to achieve a full score of 350 points and obtain all 15 different hidden treasures within the game. If the player was successful in this, they would be given a special code which they could then send back to the developers in exchange of receiving a genuine, printed and stamped *Certificate of Wizardness* (figure 5) in honour of their momentous achievement. It was not an easy goal to reach, and such a physical reward was highly sought after.



Figure 5. The Certificate of Wizardness awarded to those who completed Colossal Cave Adventure with the perfect score (rickadams.org, a.e.).

In *80 Days*, the story setting is actually familiar to anyone who knows Jules Verne's original story. The world setting has been changed slightly to an alternate version of the original. There are mechanical horses pulling carriages and slightly more advanced steam technologies present no matter where the player travels. It makes the world fresh and interesting to explore.

Fighting Fantasy has a whole few pages at the start of the book that are titled *rumours*. These pages are the introduction, during which the reader can hear rumours about Firetop Mountain and the warlock who resides there. His riches fuel the character's desire to brave the numerous dangers within the mountain in order to reach their goal of defeating the warlock. Not much is known about the world outside of the mountain, but it is hardly necessary when the entire adventure takes place within it. The caves themselves are interesting to explore, with danger lurking behind every door. The gameplay itself relies heavily on combat and it is more likely for the character to die than to survive the ordeal.

4.3 Player character

In the text adventure genre, the player is always referred to as *you*. This emphasizes the player's importance as someone who has actual impact on the

world around them, rather than projecting their actions through an avatar. In the original *Colossal Cave Adventure* it is impossible to get any information about the character the player is portraying: it was not essential information for the story, and has therefore been left out (though let it be noted that some newer reproductions have added comments like *as good-looking as ever* to the game when the player tries to look at themselves). The emphasis is on the player's actions, not who they are. It gives the players more freedom to act as they choose, rather than to act as someone they think they should be.

80 Days is a bit of an exception in a sense that in the game the player does portray an established character, Passepartout. His image is even shown on screen at all times, and particularly during dialogues with other characters. In the narrative, the other characters call him by name, but their actions are always directed at *you*. When choosing dialogue options to determine what Passepartout is going to do, they always start with the word *I*. The player becomes Passepartout, and their actions determine not only the success of the trip, but his personality and his standing with Mr. Fogg as well.

Fighting Fantasy, out of all of these, is the closest to a tabletop RPG in the way it handles the player character. The book's back pages feature character sheets where details of the character the player creates can be stored, along with their health points and inventory contents. The book even has three ready-made characters for the players to choose from if they do not wish to engage in creating one of their own. These ready-made ones are described in character and history, but not in appearance. They feature different skill advantages (warrior for strength, adventurer for luck, and the last one for wit) so the player can choose one based on their style of play, rather than who the characters are. (Jackson & Livingstone, 2009.)

4.4 Features in the world

Having a world for the player to explore is not enough: it needs to be filled with different features to bring it to life. These features will support the world's rules and story, and help the player overcome the obstacles and challenges on their

there is little other option left for the player but to draw a map as they go. But this is what the game was intended for: exploration. Making the map could be argued to be a part of the gameplay itself. The level design supports that goal by making the players want to explore further. They want to discover what is behind the next door they open or the next room they step in. How these rooms are explained to the player affects how they perceive them and how they interact with them (Jerpe, 2009). Extra care should then be taken with how these spaces are written in order to influence the player in a subtle way to do what is necessary to proceed.

One additional feature about level design is the ability to fast travel. Out of the three analysed games, only *Colossal Cave Adventure* uses this feature. Since the goal of the game is to explore and safely transport the treasures found back to a building nearby, a fast travel system is absolutely necessary and essential in creating a more comfortable game for the players to experience. It would make little sense for the players to navigate an extensive cave system back and forth over and over again, after all. In the game, this quick travelling is done via two magic spells (*XYZZY* and *PLUGH*). The player can find these written on the cave walls, and writing them down as commands will transport the player back and forth between the home and the room the word is written in. To use this spell, they do have to be in the room where it is written in (with a few exceptions), so some travelling of the caves is required. The feature does still cut down on travel time and improve the game flow.

In order to help players navigate the worlds, the rooms in them have to be made memorable. This can be done with either providing landmarks (e.g. a room filled with mist in *Colossal Cave Adventure*) or encounters with hostile and friendly NPCs (dwarves, dragons, etc.). When the non-visual game world relies heavily on navigation, this is a must as it helps the players orient themselves and draw their maps. If the game is visual or a map is provided, it lessens the need for such intricate descriptions of the environment. However, it could be argued that less intricate descriptions make the world more mundane to travel through, even if the player has the visuals to look at. This design feature is also only necessary

if the player is offered the option to backtrack and explore freely. In the case of the analysed *80 Days* or the *Fighting Fantasy* book, this is not necessary as their stories advance onwards continuously without an option to go back.

As well as providing the players with a world to explore, the game should also give them a chance to feel like they have an impact on it with what they do. If an enemy is killed, then other enemies would come and seek vengeance. Or perhaps a bridge is built that later on affects the story. Maybe the character can find romance that affects their journey, like in the game *80 Days*? Having players experience this control over the game's environment and events motivates them to explore and experiment with their choices, rather than playing it too safe. Interactive fiction, as the name suggests, is based on interaction. It should go both ways.

4.5 Goals and puzzles

Choose your own adventures are interactive stories, in which the player is the hero. Due to this, the importance of the story cannot be emphasized enough. But it is not just the story that pulls the players in and keeps bringing them back even after their character has just experienced their umpteenth horrifying death at the most unlikely of circumstances. When constructing a story, a goal must be specified. It needs to be something that the player will feel compelled to strive towards over and over again. What that is depends on the story the player creates, and the platform the story is presented on.

In *Colossal Cave Adventure*, no real goal is ever presented. If the player requests help at the start of the adventure, they are merely given a description that somewhere nearby a colossal cave exists, rumoured to contain various riches (Gobberwarts.com). Then it is up to the player's curiosity to take them there and explore as much as they can without perishing. The real goal the players want to achieve comes from outside of the game: their peers. The game features a score system and a certain amount of treasures (15 in the original version) that the players must obtain in order to reach the highest available score: 350 points. Naturally, completing the game first became a competition among friends, and

players spent months trying to obtain the illusive victory and the certificate that came with it.

80 Days does feature a similar system. The existing story is based on the Jules Verne novel, and therefore features the already familiar goal of travelling around the world in eighty days. Aside from that, the players can indulge in many different small sub-plots (romance, adventure, Scotland Yard on their heels, etc.). And furthermore, the game is semi-social. When travelling, the player can see the other players who are playing at the same time, travelling from location to location around the world. It does not technically add any further interaction to the gameplay since the player is unable to communicate with others, but it does create a feeling of doing something together: competing against others to reach the destination faster than them.

Fighting Fantasy differs from the other two in a way that it actually gives the player a goal to reach. In the first book, the goal is to enter Firetop Mountain, survive its dangers, and then defeat the great Warlock residing within to obtain his treasures. It is this goal that drives the player through the story, room after room, past trolls, zombies, mazes, and stone statues. If the player is lucky enough, they may survive everything thrown at them and reach their goal of defeating the warlock. Even then, however, it is still possible to fail due to how the game has designed the mechanics around obtaining the warlock's treasures.

Naturally, text adventures as a genre would be rather boring to play if they were merely linear paths from the start to the end goal. Therefore the games all feature puzzles. A puzzle in this context means an obstacle that the player must overcome in order to progress further, acquire new items, or find new information about what they're supposed to do next. In *Colossal Cave Adventure* the puzzles are very straightforward, though sometimes their solutions require a lot of creative thinking outside of the box. For example, to get past a huge snake the player must first capture a bird in a cage. However, if they are carrying a metal rod in their inventory, the bird is scared of them and cannot be caught. The rod must first be dropped, the bird caught, and then the rod can be picked up again.

When designing these puzzles, the developer of the story must be very careful in making the puzzles understandable (e.g. a dark cave requires a light source to traverse) and at the same time, interesting enough for the players to ponder over them for a while. The complexity of these puzzles reflects heavily onto how the players will perceive the story and its difficulty, and how much they enjoy it.

4.6 Inventory

All of these analysed games feature another staple of the text adventure genre: an inventory. The inventory in this context is a collective term for all of the items the player's character has actively picked up and is carrying with them. Where they are carrying them is not important, just the fact that they have the items with them is. The items are essential in solving puzzles, so they are also essential in completing the story.

In *Colossal Cave Adventure*, whether or not they had certain items in the inventory could mean the difference between life and death for the player. If they encountered angry dwarves without weapons, they died. If they did not have the right items in their possession when reaching a dead end, they were stuck. The system was very punishing, and the analysis of this game often led to despairing and starting over from the beginning.

In *80 Days*, the inventory serves multiple purposes. It is shown to the player as the party's luggage which features several items that are either souvenirs or essential in sustaining a working relationship with Mr. Fogg (inventory example in figure 7). Mr. Fogg requires the player to carry some items with them (a thick coat when travelling in Siberia, for example) in order to remain happy. The souvenirs are there to help the player manage travel funds. An item brought with a cheap price in London can later be sold for three times as much in China, for example. However, at the same time it takes space from the luggage and adds a new puzzle element to the game. Inventory management can sometimes be infuriating when trying to fit all of the necessary items inside the bag but successfully doing so will help the travels later on.



Figure 7. The luggage in *80 Days* is both a puzzle in itself, and also an essential part of the journey's funding (the image has been cropped to only show the inventory). (Inkle Ltd, 2014)

In *Fighting Fantasy*, the inventory is a bit more traditional. The player can pick up items along the way on their journey, but they will also encounter events or enemies that will require them to drop something unimportant to make room for other items. What they drop is up to them, and can lead to problems later on if what they dropped ends up being important after all. Since the game features a lot of combat, the players also have with them some rations to help them get stamina points back along the way.

An inventory is essential in text adventures, and is closely associated with puzzle solving. It is possible for puzzles to exist without the need for inventory management (dialogue options are one way of solving these conflicts as well, and this tactic was used the game designed for this thesis) but inventories do not serve much function without the existence of puzzles. Inventories themselves can also be puzzles as proven by *80 Days*, and that adds a new mechanic into the mix for the player's character to overcome. A good usage of the inventory and the items the player picks up along the way goes a long way in creating engaging gameplay.

4.7 Friends and enemies

Including NPCs (non-player characters) in the text adventure helps to create life and variation in the world the player gets placed in. Essentially, any being that the player can interact with and have an effect on, or receive some kind of an interaction from is an NPC. This being can be anything from a magical talking item to a frog by the lake: it all depends on what fits the story's context and what

kind of an impact the author of the story wants the NPCs to have. Are they there for combat, or do they provide the player's character with helpful hints or items?

Having a cave to explore with nothing but pretty scenery and items in it would become monotonous pretty quickly, whereas if a dwarf suddenly jumps out at the player to try and kill them when they enter a new room, it not only adds variation but a little bit of suspense to the gameplay as well. Combat with NPCs has been a part of text adventures even early on in *Colossal Cave Adventure*, where the aforementioned dwarves frequently jumped out with varying weapons to try and kill the unsuspecting player. Not to mention the other dangers like snakes and dragons. Combat in that particular case was very straightforward. If the player had the right item to counter the attack and they used it in time, they would emerge from the conflict victorious. If not, they would die without mercy.

Fighting Fantasy takes combat one step further with character abilities and stamina points. When the player encounters hostile NPCs, they enter combat. Combat is played out by pre-determined status points and dice rolls, so it is purely based on luck. If the player rolls higher than the enemy, they deal damage to said enemy's stamina. Once that stamina runs out, they die. The same is true if the enemy succeeds in depleting the player's stamina. The first book features many such encounters, the difficulty of which keeps rising the further along the story the player is. It is still possible to defeat (or significantly weaken) foes by using specific items in combat, but if said items have not been picked up by the player along the way, they are in trouble. The book also features rations as a game mechanic. They allow the player to replenish a bit of their health in specific rooms if they have lost too much stamina.

Whilst *80 Days* does not feature outright combat, it excels in using NPCs as information givers and interaction elements. During the gameplay, the player's character (depending on which route around the world they choose to take) has the potential to meet numerous different characters, not to mention that they are in constant interaction with Mr. Fogg. The characters offer helpful rumours (like to avoid certain cities due to a recent uprising) and side stories (romances, etc.) that

the player can pursue. It is obvious that said decisions will affect the story and the player's relationship with Mr. Fogg, but that is a decision the player must make on their own. Making these decisions further adds to the feeling that the players' actions matter: they have taken a step and it has changed the course of the story to what they wanted it to be. Naturally, it is also possible to use NPCs as guest givers or as the instructors during long gameplay tutorials, but they are not very common in the genre.

4.8 Deaths

The topic of *choose your own adventures* cannot really be brought up without stories of inventive sudden deaths being thrown into the mix. Sudden, unavoidable deaths and dead ends have been a part of the text adventure genre since the beginning. Wrong choices at certain parts of the adventure would lead to inescapable situations, dead ends, and death, forcing the player to start over all the way from the beginning. Certainly wiser to the consequences of their choices, but also a little bit frustrated.

When constructing these instant deaths into the story, the feature must be balanced properly. If there are too many opportunities for the player to die due to inexplicable reasons, it is very likely to discourage the players from starting the story again and again, and just make them give up on it instead. Especially if the death happens for reasons the player could not have predicted (say, an angry dwarf jumping at the player without warning). If, on the other hand, the death follows a reasonable cause and effect path the player has actively chosen, it is less likely to upset them and might even amuse them. Such a death could be, for example, the player walking their character west after the game has clearly described there being nothing to the west except for a large fissure. Persisting to go west would end up with the character falling in, killing them. Fair enough, cause and effect: the player actively caused the death to see what would happen if they tried.

How the deaths are described can help along the way as well. If they are written with humour and the possibility of death is brought up in the summary before the

action takes place, then the fault is moved from the author to the player who willingly takes the risk to take part in something that could potentially lead to their death in the game. In any case, the balance between the risks and rewards must be maintained. If the player ends up dying too much, then the instant death mechanic becomes annoying very quickly. It is a way to prolong the game time and add replay value, but it is not something an author should do too often. It is better to offer the player a way out if they are suddenly in over their heads.

Among the analysed titles, the only one to feature such unforgiving deaths is the *Colossal Cave Adventure*. The player can fall into pits, be killed by NPCs if they are unarmed, or be trapped in rooms with no way out if they do not have the right item at hand. The analyser of the game is personally very fond of creative deaths, but the game simply had too many and started to feel unfair. After the fifth gruesome death at the hands of a knife-wielding dwarf, they moved onto the other titles.

Fighting Fantasy could be argued to be better in its design. It features a great deal of combat, all of which has the potential to kill the player. However, it also gives the player options to run away from combat, or not start it at all if an escape route is available. This gives the player more choice in what they choose to do based on what their situation is at the time. The character can still take on zombies if they wish, but they can also attempt to run. Said attempts require luck points, but can save the player character's life in a desperate situation. It could be argued that this design is better as it offers more choice. There are still scenarios that lead to deaths (staring at paintings is not a good idea), but they are amusing and not too frequent.

80 Days is different, in the sense that mortal danger is not constantly present. It is more likely that the player runs out of money and gets stuck. In a game based around real-time decisions and limited time, this can feel just as stressful as actual death scenarios. Some NPC interactions do include danger (natives, Scotland Yard, etc.) but those dangers can be navigated by either escaping or

with clever dialogue. No actual death scenarios were found while playing the game for the purposes for this thesis.

Creating deaths and dead ends can be entertaining if done correctly and making the player aware of the danger as they make their choice. The pacing just has to be done correctly. A death early on in the adventure is less annoying than a death that happens at the very end of it. Making the players replay the entire adventure just because, for example, their character did not have rocks in their inventory is perceived as unfair and should be avoided. It should be noted to only create reasonable deaths, and the players stay happier and might even remember them fondly afterwards.

5 CREATING A DAY IN TUMBLEWEED

This part of the thesis introduces the text adventure game that was created during it, and its creation process. It starts from the basic tool and theme introductions and then moves onto explaining how the creation process goes from start to finish. What are the first design steps, and how can the developer keep track of the story's branching structure? As the advanced knowledge in programming was missing during the creation of the game, ready-made tools were chosen for the purpose of creating it. During the process, a user survey was also conducted using Google Forms and used as a feedback tool the game's success.

The game is available for playing online at the time this thesis is published (Lyömiö, 2017). It is recommended that the finished product is observed first, for the following chapters will go into detail about the story's structure and plot points. If, however, this thesis is read out of the simple interest for the creation process itself, playing the finished product is not absolutely necessary.

5.1 Available story editing tools

Creating a branching narrative is a real challenge. The story will have interactions that affect later outcomes, it will swerve in different directions depending on

player decisions, and planned events may or may not happen. It is important to try and keep some track of what dialogues, objects, or encounters the player has gone through in order to keep the story logical and consistent. Otherwise, the player may end up encountering immersion breaking conversations or having to use items they did not know they had.

To make this process easier and more manageable, a number of different online tools have been created. A few of them have been chosen to be introduced based on their ease of access (cost, usability) from a beginner's point of view. A beginner, in this context, means not having much experience in game publishing or the necessary programming skills to create complex narratives from scratch. The search conducted during the productive part of this thesis yielded several free alternatives: *Inklewriter*, *Quest*, and *Twine*. The reason for exploring free alternatives revolves back to the desire to find tools that are easy to access and use. All of the tools mentioned above are versatile, but also come with their own restrictions.

5.1.1 Inklewriter

Inklewriter is a free tool designed by Inkle Studios, the studio behind *80 Days*. It is still a new tool and it is being constantly updated to add more features and stability. Out of all of the tools mentioned in this section of the thesis, it is probably the simplest in terms of offered features and functionalities. Unlike the other tools that will be introduced later, it does not offer a desktop version of its software and is only available online. Getting started is simple, and the software offers an interactive tutorial which teaches the user all the basic functionalities and how to use them creatively. The user does not need to sign in to use the software, but it is recommended for them so that they can be sure that their work is saved when they stop writing it. This software was chosen to create the thesis project, purely because of the speed with which the software allowed the story to be created and tested on the go.

How the software works is very straightforward. The developer simply writes their text on the page that opens up before them. Pressing enter works as a paragraph

change, but also splits the page's text into different segments that can be edited separately to add condition rules and markers. These rules can, for example, control when a player sees a particular text. In figure 8 we see an example from the game created for this thesis, in which the player is doing some shopping at a general store. Every segment of text has its own rule for when it is visible to the player. In this example, the featured shopping screen is part of a loop where the player asks for an item, sees a small text for it and returns back to this screen. The clerk has different responses based on how many items the player has already bought.

Each item's purchase text (which is a separate text segment), has the marker 'shopitem+1' making the count go up by one through a numerical counter. The clerk's responses are based on what that count is, and as the player is restricted to buying only three items, they will say goodbye after the count has reached three. At that point, the bottom-most option to leave the shop also becomes available as it has been hidden from the player until the count has reached three. Each of the shopping options also has limited visibility through its own condition rules and separate markers. If the player for example takes a crowbar, the marker *crowbartaken* activates and hides the option to buy one from the player when they return to the shopping screen.

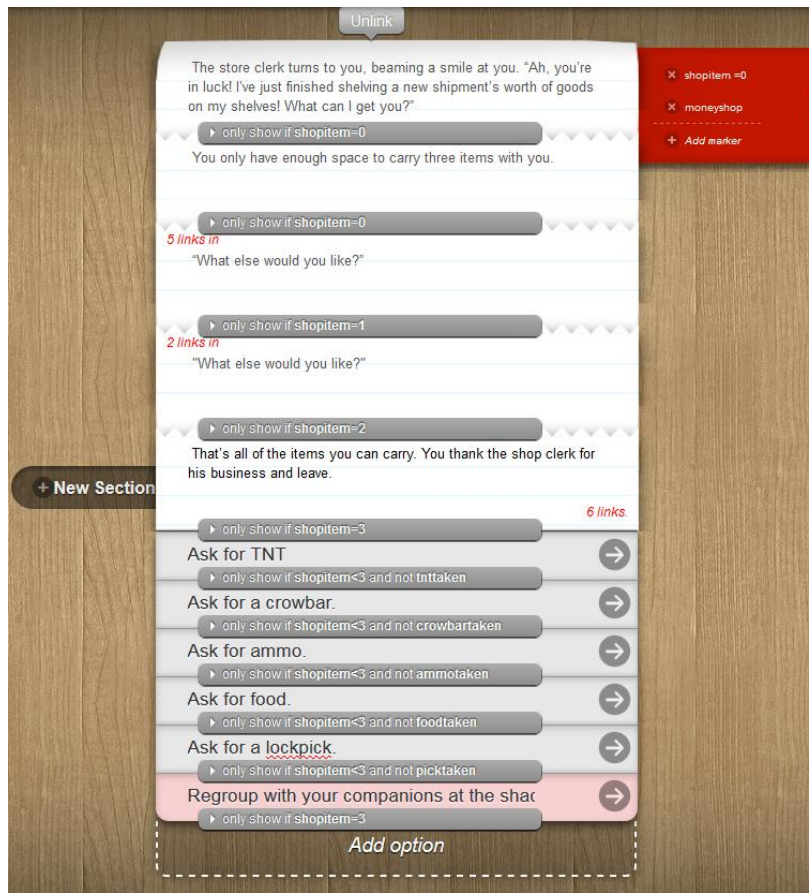


Figure 8. Screen capture of the thesis game in Inklewriter, showcasing how markers and condition rules control what the players see. (Lyömiö, 2017)

Controlling these basic logic rules can take a bit of getting used to if the person trying them out has not done anything like this before, but once the basic principles behind the markers and controlling them through if conditions has been grasped, it is very straightforward. Similar rules from the example in figure 8 can be used to control dialogues to create, for example, different reactions to new people and known people, or to create sequences where different events happen based on the player's earlier decisions. For example, in *A Day in Tumbleweed*, the player's choice on whether they shine their deputy star or not can save their life down the line.

Inklewriter also offers the developer the option to play as they write. Everything they write is immediately playable, so testing can be done as soon as a section has been finished. The software also shows if the text has any loose ends that are not connected to other text sections, which helps if the story branches in multiple different directions and has many different outcomes. From a personal

opinion, this feature was found incredibly helpful in keeping track of the story and what sections had been left unfinished.

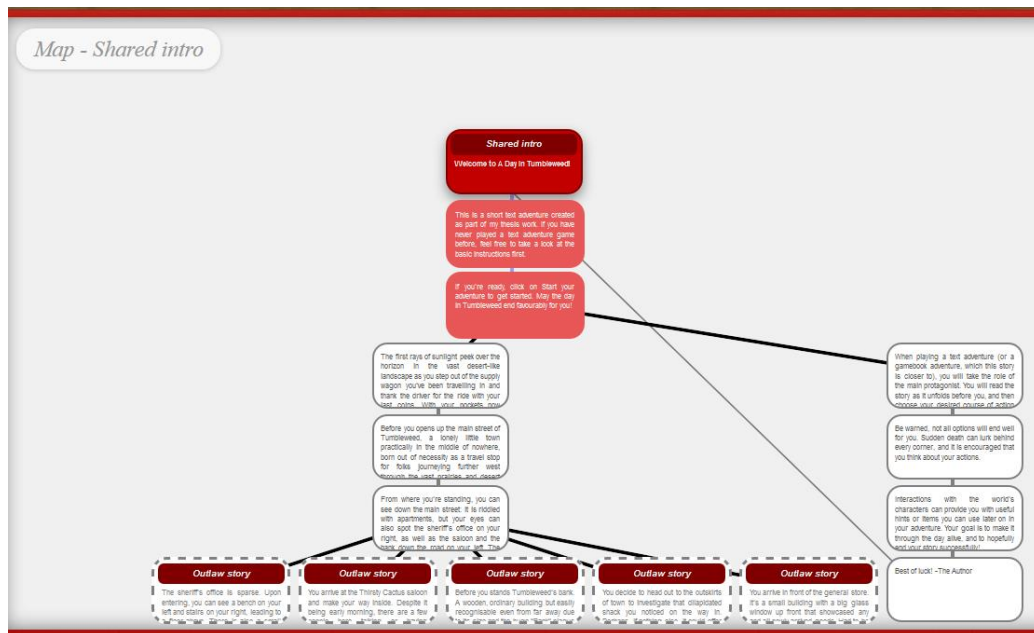


Figure 9. Screen capture of the intro section's map for A Day in Tumbleweed. (Lyömiö, 2017)

Inklewriter also provides a map feature to see what the story structure looks like (figure 9 shows an example of this). As the software works through the browser and is still in beta, this feature can be a bit unstable and slow down the browser, especially if it has multiple looping segments. If the story is separated into different sections properly and the sections do not grow too large, the feature works well. In the case of the thesis project, the story eventually grew too large for this feature to handle. *Inklewriter* is, as mentioned before, in continuous development, so it is believed that this small instability will likely get fixed in the future.

At the time of the writing of this thesis, *Inklewriter* only seems to support a basic text adventure format. It is possible to add images to different sections by linking to them, but no sound options are available. Hyperlinks work if they are required, as does basic text randomisation and value printing for numbers. But if, for example, working turn-based combat was to be required, then *Inklewriter* is not the tool to use. It is also not possible to change the fonts used in the story as

there is no free style formatting, so the text styles are stuck as the ones the software offers.

As far as publishing goes, the story is available online through a sharing link immediately after the first words have been written. *Inklewriter* creates a unique link for the story that can be shared to others the moment it's been saved for the first time. This link does not change even if the story is edited, so the developer does not need to worry about updating the links after they have tweaked their story. The story is not locatable through online searches through this link however, and for that the developer needs to publish the story. The tool offers free publishing to textadventures.co.uk, but no other options beyond that.

5.1.2 Quest

If something like the *Colossal Cave Adventure* is the developer's goal, then *Quest* is a great tool to choose. It is free and can be used either online or downloaded onto the desktop as a separate program. The developer can even publish the finished game as an app if it is required. The software features free map movement like in the version of *Colossal Cave Adventure* that was introduced in chapter 4.1.1, and allows the players to type in text parser commands to interact with the world with. It also has a companion tool called *Squiffy*, which is intended purely for interactive fiction or gamebooks like the *Fighting Fantasy* series (textadventures.co.uk, 2017).

If the developer has knowledge of basic game scripting, the tool also offers the option of editing the code itself for added functionality and different behaviours. If not, the software can create commands and if-behaviours based on the classes and simple logic it has been told to use. All the developer needs to do is create the require objects (such as a lamp) and then connect them to the desired behaviours (like take) and texts (lamp was taken). Programming such behaviour is introduced in the software's tutorial in figure 10, which shows a similar example with a newspaper.

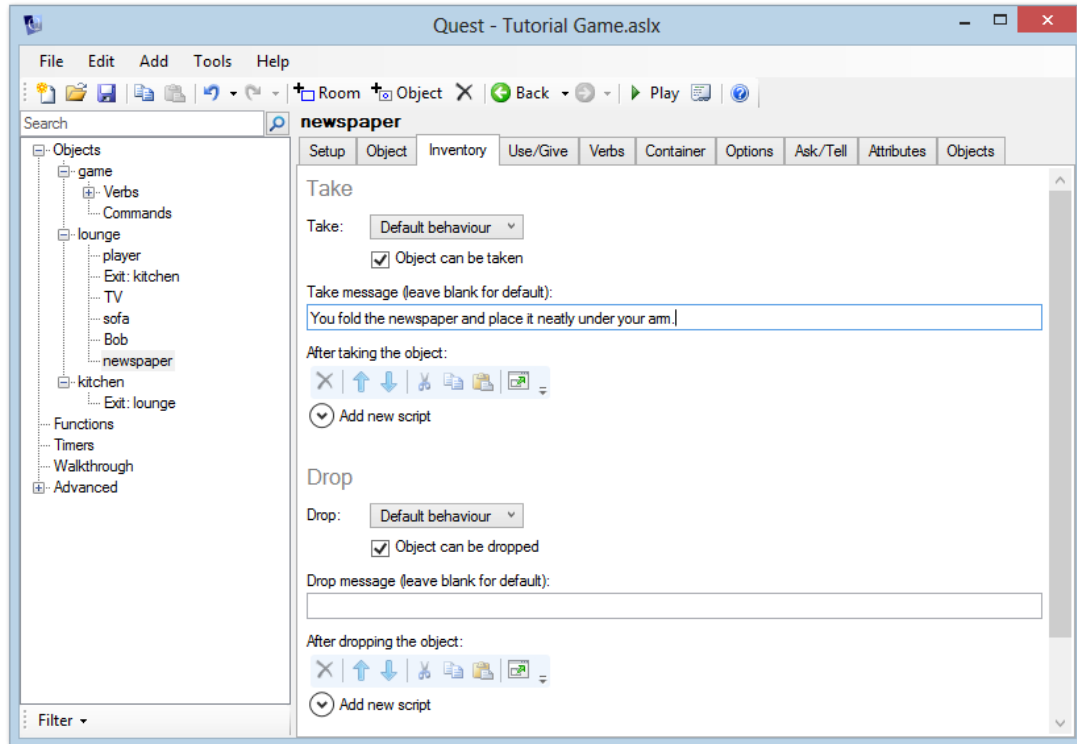


Figure 10. An example from the software's tutorial, where the newspaper is assigned the option to be picked up and given a text prompt to show. (textadventures.co.uk, 2017)

However, if the developer wishes to program in turn-based combat, this is something the software does not yet have functionality for unless the developer can alter the functions through the offered scripting language themselves. As the website of the software also allows for developers to upload their games on their website, the size limit for submissions is 20mb. They do offer instructions on how to compress sounds and images, but the size limit does limit what can be done with the software.

5.1.3 Twine

Twine is a tool created in the year 2009 by Chris Klimas for the sole purpose of writing branching text adventure stories. It is now maintained by a group of developers and has been continually updated since then, with its newest version 2.1.1 update released this year. For someone wanting to create a quick story structure, *Twine* is a good tool to use. As well as featuring a handy basic tool for story structuring (shown in figure 11), the software also offers the use of variables, conditions, images, CSS and JavaScript to spice up the story and to add more gameplay features (like turn-based encounters). (Twine, 2017.)

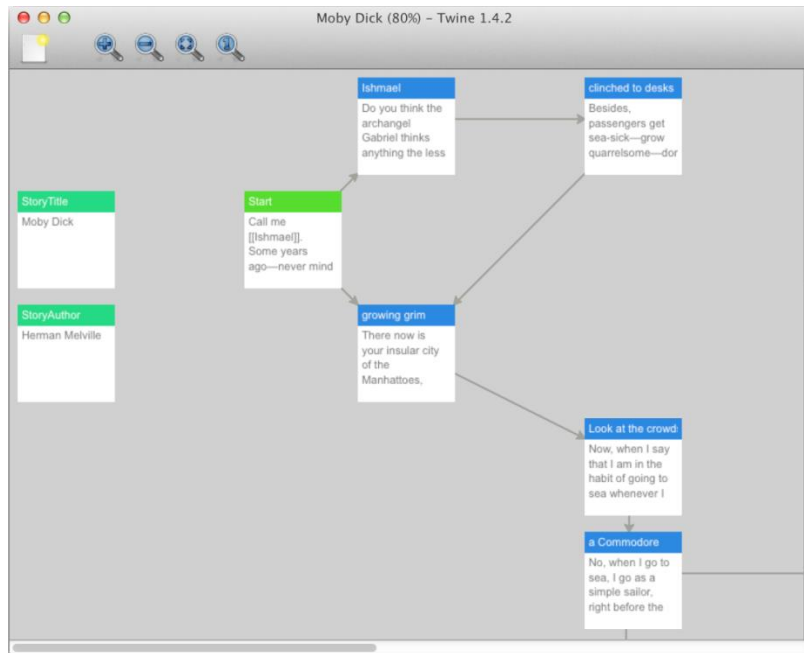


Figure 11. Twine's tool allows for simple and easy to understand story structuring. (twinery.org, 2017)

The software, as stated by its wiki, currently uses three different story formats, out of which the story's developer can choose one. All of them have adequate tutorial material available to help the developer determine which one they wish to use. The different formats function slightly differently, with some adding additional functions (like inventory management or the aforementioned turn-based encounters), and others staying true to simpler gamebook formats. It is encouraged that before using *Twine*, the developers familiarise themselves with these different story formats and what they offer in terms of game mechanics. (Twine Wiki, 2017.)

Twine is available both online and as a downloadable desktop version. When done with the story, the software also gives ample help in terms of different server hosting opportunities to upload and share the finished story. The sharing process converts everything into HTML, which means that the end result can be readily hosted almost everywhere. *Twine* also gives the developer of the game full rights to their story, whether it is to be used commercially or not. So whilst it may require more coding knowledge to actually create all the functionalities it

offers (in terms of more complex mechanics, for example), it is a viable option for text adventure creation.

5.2 Story structure in *A Day in Tumbleweed*

A Day in Tumbleweed is a short *choose your own adventure* set in a little Wild West town called Tumbleweed. The player will take the role of a newcomer who is passing through the town on their way further west. Upon stumbling on Tumbleweed, they find themselves low on cash and are forced to look for means to acquire more to carry on with their journey. Exploring the town they have arrived in seems like a good starting point.

From that point on the player has two main paths to choose from (deputy or outlaw), with smaller activities taking place during them. These main paths are mutually exclusive, with the other option becoming locked the moment the player chooses which one they want to follow. This is done to create a simpler story structure and to add more replay value to the product by providing alternative angles to the same story.

Both story paths are constructed in a similar fashion, and have one joined starting point and individual starting points depending on which locations the player explores upon arrival. The saloon in the town is the main starting point for both storylines, and the main source of information at the start of the adventure. Alternatively, the player can also explore the sheriff's office for an alternative method to start the deputy story.

Afterwards, both stories follow a similar structure: The player gets introduced to their path-specific NPCs and gets given a task to complete. How well that task is completed will determine how the rest of the story continues and how the NPCs react to the player's character. Both stories consist of the events of a single day from different perspectives. During this day the player's actions affect the outcomes of the game itself. Both stories end with a final showdown which determines whether or not the main character is successful in achieving their goal or not.

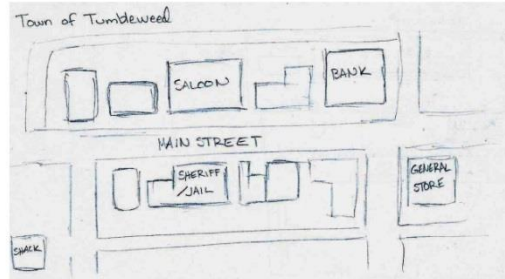
Needless to say, having two different story paths meant that the project essentially contained two different branching storylines with a shared beginning. Managing this structure could be done in several ways, but in this project's case it was mostly done via simple story charts (see appendixes 1 and 3) and by writing the story script in Google Drive, with functioning links from section to section. The writing process had to be done chronologically, as skipping from scene to scene would have just made the process even more confusing. It is also possible to use online tools (introduced in chapter 6.1) that include structure management. It is highly recommended that the developers choose whichever tool they think fits them the best, for working with comfortable tools makes the creation process much easier.

5.3 Level design choices in A Day in Tumbleweed

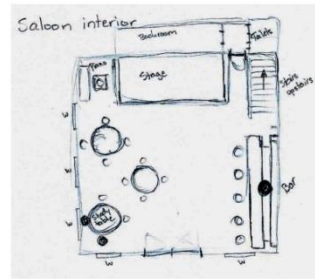
The events of the story take place inside the fictional town of Tumbleweed, situated somewhere in the American west in the 1850's. The world outside of the town is not important for the story and exists merely in brief environment descriptions to set the scene at the start of the game. The town is larger than the game depicts but the important locations for the player to explore and experience are the main street, the saloon, the bank, the shack on the outskirts of town, the general store, and the sheriff's office.

Each of these locations consists of one room, with the exception of the bank that features multiple locations due to story importance. Some locations also feature items the player can pick up if they wish to do so, and NPCs they can interact with to get more information or to progress the story they have chosen. Depending on the chosen story, some NPCs will treat the player differently and some locations might be inaccessible altogether. Figure 12 shows the first rough drafts of these locations. None of these are shown visually to the player but described in text instead.

Main street overview



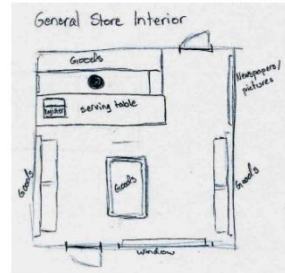
Saloon



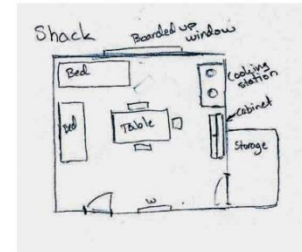
Sheriff's office



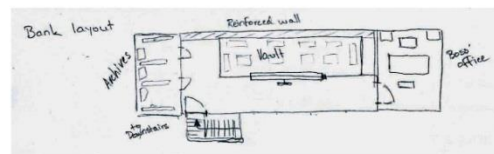
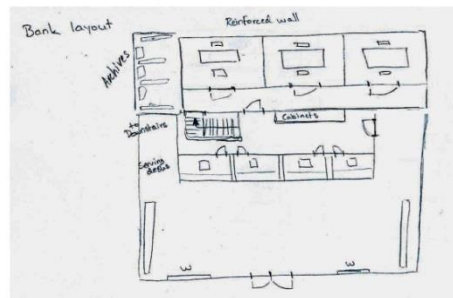
General store



Shack



Bank (2 floors)



©Sirja Lyömiö, 2017

Figure 12. First rough drafts of the town's locations (Lyömiö, 2017).

At the start of the game, it is essential that the player is directed to a location that offers them the possibility of starting one of the story paths. Most locations around town will therefore direct the player towards the saloon, as that is where the bartender has the option of giving out more information about the possible paths the player can take. However, if the player happens to stumble onto the sheriff's help wanted sign and initiates that story path on their own, they have that option. Eavesdropping on the shady bunch in the saloon is the way for them to start the outlaw path.

From that point onwards, the story becomes a lot more linear. Originally, it was intended that the player could have explored the town freely between different events to meet more NPCs and to gather information. However, the time constraints of the production phase and the surprising complexity of writing such

a vast amount of excess information ended with those plans being scrapped and the story becoming far less open than originally intended. The final design became much more like a traditional gamebook adventure instead with its more linear structure and occasional side event branches. In the following section, the locations and their roles in the story are explained in bit more detail.

5.3.1 Main locations

The first location the player encounters upon starting the game is the main street. The main street sets the scene for the environment's appearance and rest of the story, as well as functioning as a crossroads from where the player can take their first explorative steps to take a look at the town's other locations (shown in orange in figure 13). It was imperative that the player, at this stage, knows who they are and where they are, as well as what possible steps they can take to start their adventure. A long description of the environment and its possibilities was in order to give the player that information. Later on, the street would function as the set for a few side events which held less importance for the actual environment, but were important for the player's character.

Map of Tumbleweed



Figure 13. An illustration of Tumbleweed's map, showcasing all of the important locations. (Lyömiö, 2017)

The bank, whilst closed off at the start of the journey, is an important part of the story. The deputy side of the game may never even step foot into the bank if the player chooses not to, but for the outlaw the bank is the culmination of their story

and their main goal. Therefore, the bank's structure had to be designed with that in mind (see figure 14 for the final design). In the original plan the bank would have featured merely an explosion and then a duel with the sheriff, but further work on the story ended up adding several smaller puzzles onto the player's path (lock picking and safe code hunting).



Figure 14. An illustration of the map of the bank, showcasing both the interior upstairs and downstairs of the building. (Lyömiö, 2017)

These puzzles expanded the original bank map a little with the addition of the manager's office and with a time-based searching puzzle, which could end either well or badly depending on the player's luck and choices. A very brief mention of the bank's upstairs was also added, mostly for exploration purposes. To successfully complete the bank heist, the player needs to enter the bank quietly, and enter the vault quietly by locating the right code for the vault door. If either of these steps is done too loudly or too noticeably, the sheriff will be outside to confront the player when they try to leave.

One other location that's important for the outlaw is the shack outside of town. It functions as the proper starting point of the player's journey as an outlaw, and also as a safe location for the outlaws to gather between story events to regroup. It is not a complicated space: it barely has any furnishings, and is clearly meant as a temporary resting place in-between heists and other activities (see figure 15 for the final interior design). In terms of story altering events, the player will encounter the initial gang interview, and be able to pick up a scarf to hide their features if they wish to do so. In the shack, the player will also learn a bit more about whom they're working with and what their goal in the story is. Before the final showdown, the player can also potentially load their gun if they have obtained the ammo for it. If not, their final showdown may end in death.

Shack

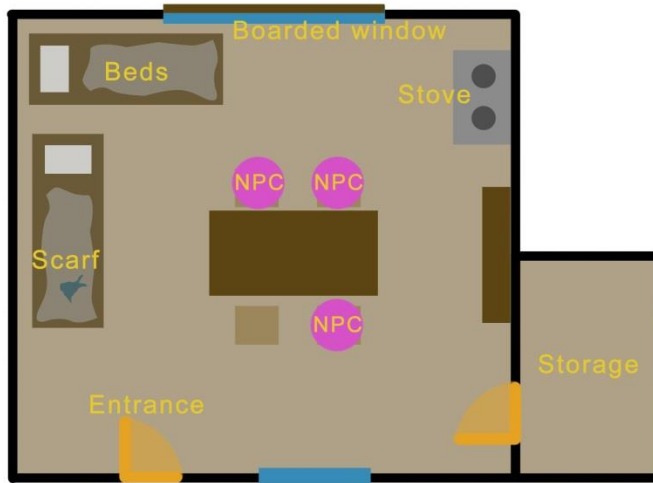


Figure 15. An illustration of the interior of the shack where the outlaws meet. (Lyömiö, 2017)

Thirsty Cactus, the town's saloon, is only really mentioned and visited at the start of the game. It is the location most of the NPCs will direct the player to when asked about work. The saloon was chosen as this essential meeting point due to being a bit of a gaming cliché. Taverns and bars in general have always been a good source of information and this tradition was preserved in this game as well.

Due to it being such an established tradition, the players playing the game who have previous experience on gaming in general were hypothesized to find the design familiar to work with. The actual interior of the saloon (figure 16) is very traditional: a bar takes up the right wall, with tables and chairs scattered here and there. A stage takes up the far wall opposite of the entrance with a piano residing

next to it. Stairs go up to motel rooms, and a small door leads backstage. None of these additional interior areas are unfortunately available for exploring: they are just there to set the scene for the player when they enter the saloon for the first time.

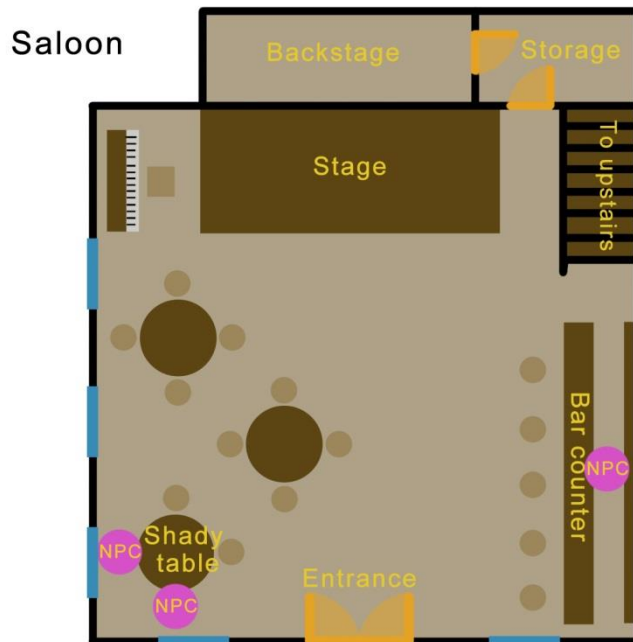


Figure 16. An illustration showing the interior of the Thirsty Cactus saloon. (Lyömiö, 2017)

The players have a second chance to visit the saloon during a later point in the deputy's story, but the area is then mostly used as further information gathering and scene setting and nothing more. The saloon is mentioned in descriptive texts several times throughout the story, and during those times it functions as a marker for the passage of time (with mentions of more people, music, etc.).

The sheriff's office is path-specific in the same way the shack is for the outlaw. The only time an outlaw would visit the office is if they have failed their path and been arrested. The office has the potential to act as the starting point for the player's deputy career and works as a safe base on that path. The sheriff himself takes on the role a guide and keeps the story flowing forwards. The office is a safe location and aside from failing the sheriff's initial skill test, offers no chances of failure for the player. As a location, it is sparse (as shown in figure 17): there is a table, some cabinets and benches, and wanted posters on the wall near to the notice.

Sheriff's office

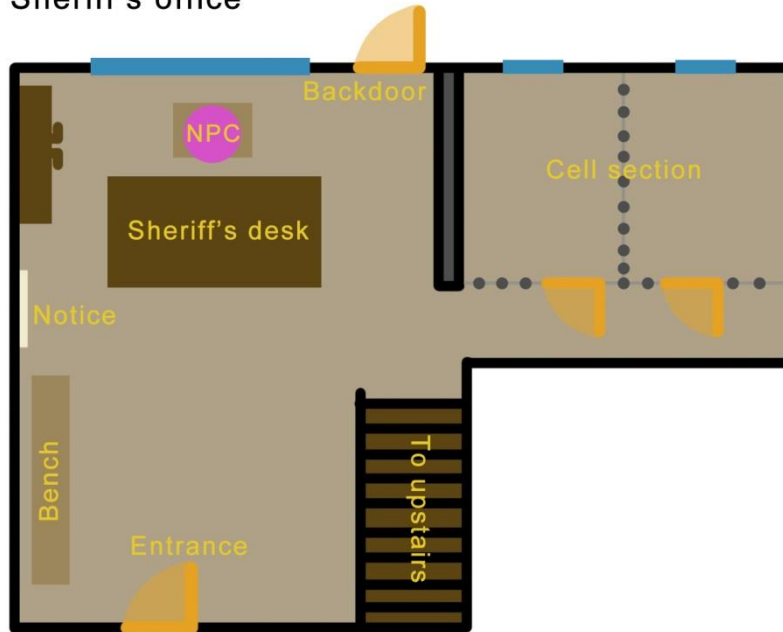


Figure 17. An illustration of the sheriff's office in Tumbleweed. (Lyömiö, 2017)

The most important objects in the office for the player are the help wanted notice and the deputy star the player receives upon completing the hiring process. The star can also have an impact on whether the player succeeds or fails their game, so taking care of it is recommended. The text description for the area also features a short description of the cells nearby, and stairs leading upstairs to the sheriff's room. It was originally intended for the player to be able to visit both of these locations, but they were cut as they were not crucial for the story.

Tumbleweed's general store, as well as the bank and saloon, is among the locations that both story paths visit. And whilst the outlaw has more of an interaction with the owner of the store, the store clerk can give valuable assistance and information to both of the story paths. The store itself is small (as shown in figure 18), but its shelves are stocked full due to a new shipment arriving with the player's wagon that same morning. The small size helps keep the space compact and easy to imagine. The shop clerk is a jolly fellow and was written to be easily approachable for the same reason. The player is supposed to like him and perhaps even sympathize with him.

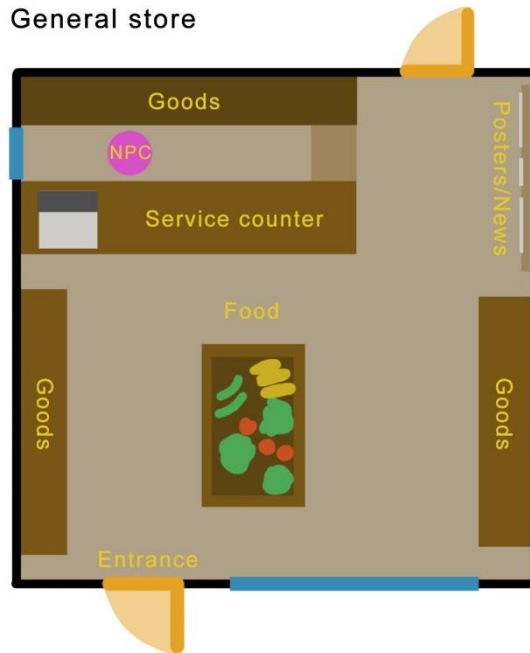


Figure 18. An illustration of the interior of Tumbleweed's general store. (Lyömiö, 2017)

The general store actually has multiple functions in the game. It will serve as a source of information during the initial exploration phase (directing the player to the saloon), giving out information during the adventure (robbery phase) and finally, either assisting or resisting the outlaw when they try to get supplies for their final heist. Depending on how the player is playing the game, they can either have a pleasant, wary, or resistance -based encounter with the shop and its clerk. These encounters and the players' choices also determine how the outlaw's story continues from that moment onwards, so as a location the shop is one of the most important ones in the game, hence why it is featured heavily on both story paths.

5.3.2 Side event locations

Aside from the main locations, the game also features a few smaller locations that don't really have any specific descriptions on what they look like. These locations are not important exploration-wise and ended up being included in the game purely because the story events required locations that were not necessarily parts of the original buildings. These locations include the backstreets of Tumbleweed, the sheriff's backyard, and the bank manager's office.

The sheriff's backyard is exclusive to the deputy story. It is shown at the very beginning when the sheriff takes the player's character outside to test their shooting skills. The area is small and closed off, and the only features that are specifically mentioned are the ones the player should focus on: the fence and the three bottles standing on it (as shown in figure 19). This area exists purely for the sake of the shooting minigame, and has no further purpose beyond that. Once the minigame has been completed successfully, the player will not return to this area again. The minigame's descriptions themselves work a bit like a puzzle, giving hints to the player on what the right order of bottles is. The descriptions use a subtle way of dropping the words *right*, *middle*, and *left* in the reaction descriptions to let the player know what they should do. It is then up to the player to notice these hints, although doing so is not necessary for the game to progress: it can be completed through luck or brute forcing as well.

Sheriff's backyard

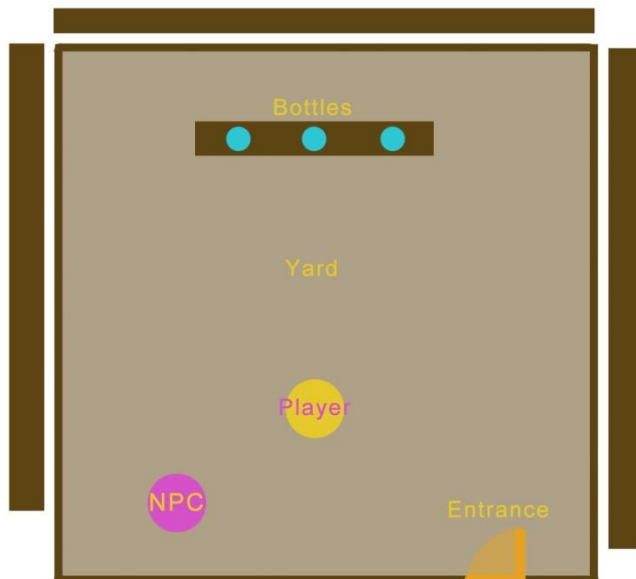


Figure 19. An illustration showcasing the sheriff's backyard where the shooting minigame takes place. (Lyömiö, 2017)

The streets are featured in both stories, though the emphasis is on the outlaw's story. Whilst the streets themselves have very little narrative description beyond brief mentions of how crowded they are or mentions of vague appearances, they do feature important story events. The deputy path uses the streets as the means for the character to learn the city's layout and to patrol, and the outlaw uses the

darker streets to get around the city without being spotted. These streets were never a part of the original story plan, but were born out of necessity created by the evolving storyline.

The streets are used as a set for a joined event for both of the story paths: during the day, the outlaw is tasked to commit a small robbery to obtain funds for more supplies. At the same time, the deputy is asked to patrol and keep the townsfolk safe from petty crime. Inevitably, these two paths cross. Depending on which side of the story the player is playing, they will have vaguely similar encounters and a brief chase scene within those streets (see the chase route in figure 20). This chasing event does have the potential to end the story for both story paths should the player fail to complete them successfully. If the player succeeds, the success does reflect on how well the story continues for them from that point onwards. For example, the outlaw can both fail and succeed to obtain money. Whether or not they have money will change the encounter at the store they will go to afterwards.

Chase scene route

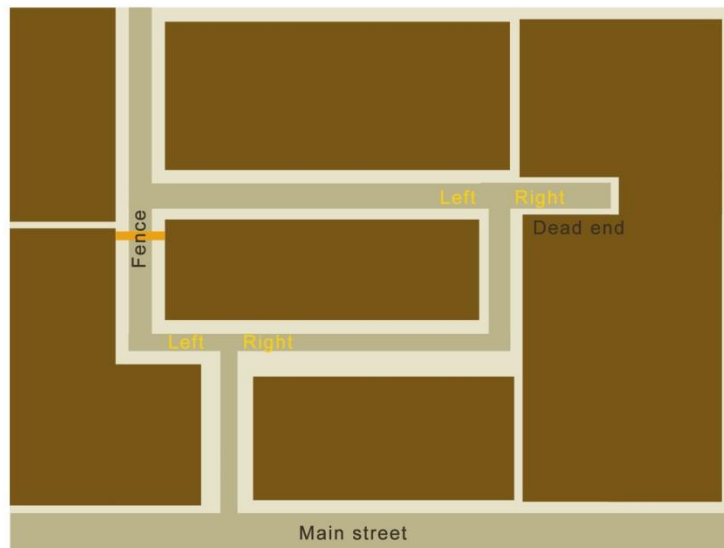


Figure 20. An illustration to show the street route through the chasing sequence. (Lyömiö, 2017)

The bank manager's office was something that was created really late in the development of the story. After planning and starting the writing on the outlaw's bank heist, it became apparent that the whole sequence was a bit boring and straightforward considering that it was meant to be part of the culmination of that particular story path itself. It lacked the puzzle element that gamebooks are

supposed to have, and therefore the decision to add an alternative way to enter the vault was created. That led to the creation of the manager's office and the time-based puzzle in it.

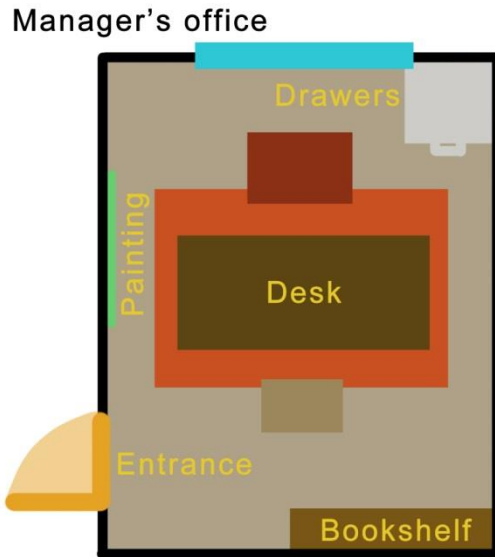


Figure 21. An illustration showing the interior of the manager's office. (Lyömiö, 2017)

The room is described to be lush, with a carpet and a painting added into the space to create a comfy, wealthy feeling. This room features three locations to search: drawers, a painting and a bookshelf (see figure 21 for a more detailed map). Each time a player searches through one location the player's allies get more and more impatient until they take matters into their own hands and blow the vault door open, which in turn makes the robbery loud and leads to the final encounter with the sheriff. If the player is lucky enough to find what they are looking for (the vault combination) in time, they can enter the vault quietly without anyone noticing. The inclusion of this area made the bank heist longer and more meaningful, offering the player alternate ways to complete the mission.

5.4 Creation process

This chapter will go into further detail about the creation process behind *A Day in Tumbleweed*. First, it will give a bit of insight into how the story came to be, then move onto the actual process itself, and in the end explain what changed during the process and how the story evolved during it.

5.4.1 Creating the idea

What usually starts the creation process varies from case to case. It could be a great character that's been designed, a certain theme, or a specific location. In *A Day in Tumbleweed's* case, it was the theme that sparked the original idea. At the start, a few different themes and genres were being considered for further exploration, and feedback was requested from friends to decide which theme to go with. The options in this case were either a western adventure, or a space themed one. The western ultimately won out, and the creation process started.

The first thing to decide was the main structure. Answering the questions *who*, *what*, *where*, *when*, *why* and *how* are essential at this point to establish a clear plan on what the story is going to be and how it unfolds. In *A Day in Tumbleweed's* case, the starting points were the words *cowboy* and *duel* (the *who* and *what*). Perhaps it was a little cliché, but also traditional enough to be familiar without having to establish a whole universe around the concepts. Pretty quickly after that the story started to form: it would take place over one day (the *when*), in a small town called Tumbleweed (the *where*). The lack of funds served as the *why*, and the acquiring of funds became the *how* that was the driving force behind the entire story. The starting point became the option to choose the desired path through the player character's dilemma. Whether the player chose the outlaw or the deputy, it was important to make both stories equally interesting and fulfilling to give the players the feeling that they'd established something and managed to have an impact on the town they had visited.

Originally, the story was supposed to have the two main paths, and then an additional, separate path for a shorter experience that would have taken place outside of town during a cattle drive or a rodeo. This separate path would have been an alternative to the main two, just in case the player did not feel compelled to try either of them. The other option would have been to use it as an additional adventure that took place after the events of the main game, to bring the players back after their first successful playthrough. However, due to the strict time constraints and the sheer amount of time that went into creating the first two

paths, the third path sadly never left this initial planning stage and it was mercilessly scrapped from the final product. There are plans to include it later on when more planning time is available.

5.4.2 Story summary

This section introduces the full story behind *A Day in Tumbleweed* in case the original project is no longer available for playing online. This summary is intended to give a rough idea of the story's contents and how the different story paths intertwined with each other. Both paths revolve around the same events from different perspectives and slight variations, so it is essential to make these events match and have them be plausible for both paths to experience.

The story starts as the player's character arrives into town, out of money and without means to go forward. They are left with no option but to look for a way to earn some money to continue onwards. Depending on which path they choose, they are then confronted with a test. For the deputy, this is a shooting minigame, and the outlaw experiences a job interview. After this, the deputy starts patrolling the town, and sees a robbery taking place in the middle of the day. The outlaw in turn is responsible for making this robbery successful. Both paths experience a short chase scene in the town's streets, with varying levels of success.

After the chase is concluded, the deputy can create a wanted poster of the outlaw if the outlaw has not taken the necessary steps to conceal their identity. This will then affect the outlaw's luck when they go to visit the local store to buy equipment for the bank heist that has been planned for the next night. If the store clerk recognises the outlaw, they can potentially raise the alarm and tell the deputy of the outlaw's visit.

The final stage starts after a brief wait, with both paths waiting until nightfall before heading for the bank. The deputy's story at this stage is very straightforward as they march up to the bank and confront the outlaws robbing it, resulting in either a duel or the outlaws bribing him. The outlaw, on the other hand, has to first break into the bank silently and then gain access into the vault.

This can be done several ways, with either forcing the door open or by exploring the bank manager's office for an alternative way inside. If the outlaw manages to complete the entire heist silently, the deputy will not be there waiting for them, and they can get away without being noticed. If not, both paths experience a final duel.

The final duel, out of all the events in the story, has the most possibilities for the players to lose the game. Either they do not have the necessary equipment, they have skipped a step that could have saved their life (like shining a deputy star or buying ammo), or they simply are unlucky in their choices of what to do. That said, some actions can lead to unexpected victories as well, and the conflict can end in multiple ways depending on what the players choose to do. After the conflict is over and the player has emerged from it victorious, they retreat to their base of operations (sheriff's office or the shack) to regroup. Both are then given the option to either take their share and leave, or to stay in Tumbleweed. It is up to the players which ending they wish to have at that point. No matter what, reaching this point means that they have completed the game successfully.

5.4.3 Writing process

After the main storyline was established, it was time to start writing. At the time, it was still not certain which software would be used for the actual story creation, so the decision to write the whole story in Google Docs first was made. While this may not have been the most eloquent solution, it meant that the entire script was in one place where it could be easily transferred through copying and pasting to whichever platform would be chosen. The story paths and links were entered into the document as anchor links, so the story structure was there from day one. A few weeks later, once it became clear that *Inklewriter* would be chosen as the creation platform, different marker notes were added to the script document (example in figure 22, where added tags are shown in orange) to keep track of different tags that would be activated or alternate texts that would be visible to the players in different situations.

2nd Right

The loud bang rings in your ears as you fire your second shot, the bottle on the right disappearing in an explosion of glass, the pieces glittering in the hot sunlight as they fall.

You're starting to feel pretty good about yourself - this is easy!

"One last bottle left, stranger. Deal with it so we can get the official business out of the way" the Sheriff orders, but you can hear that he's quite satisfied with your show of talent.

Shoot the last bottle. (adds a tag 3rdnormal)

Shoot the last bottle with flourish. (adds a tag 3rdflourish)

Throw your gun at the last bottle. (adds a tag 3rdoun)

Figure 22. A screen capture of what the script document looked like during production. (Lyömiö, 2017)

The initial story planning phase started on the 3rd of February 2017 and lasted about a week or two. During this phase, the basic structure of both story paths was established and ironed out. Rough sketches for the environment were made as well to assist with the storytelling and to keep the environment descriptions consistent throughout the writing process. A very brief look into possible writing tools and publishing options was made to get a rough idea of what was possible in such a short schedule and with the tools provided. *Inklewriter* seemed like the simplest and fastest solution, but it also cut out a few design choices and altered the storyline slightly with its limitations.

Proper writing began the 20th of February, with the plan that writing the entire story would be completed within a few weeks, so enough time would be left for testing, tweaking, and completing user testing and the survey associated with it. The writing process proceeded in chronological order, starting from the beginning where the player's character first arrives and takes a look at the different locations around town. Since both story paths shared this section of the script, it did not require a great deal of additional work in terms of path-specific alternations. However, at this stage, it was noted that the writing process was a lot slower than initially planned, for the branching story structure took a lot of focus and concentration to get right. Interactions with NPCs were vastly more complex than originally expected as well, and required for additional dialogues to be created in order to keep up a good story flow. All in all, the writing of this first segment took about a week.

The deputy's story (see appendix 1 for a rough outline) was the next focus point. Writing it required a lot of trial and error and working around *Inklewriter's* restrictions on gameplay mechanics in order to get it right. The duel, for example, was originally supposed to be a turn-based encounter, but since *Inklewriter* did not allow for this to be the case, it was written in a more standard gamebook format, with text decisions guiding the way the encounter would go. It was a lot of hassle to get right, and several issues were also had with the robbery scene and the bottle shooting at the start of the deputy path. Figuring out the structures for these sections took time, and the development of the deputy story took longer than expected, taking almost a week and a half of work.

The outlaw's story was started immediately after the writing on the deputy story ended, around the 8th of March. Fortunately, the writing of the deputy story had provided some insight on how to construct the story events, and with this experience it was a fair bit faster to create the basic storyline for the outlaw. As mentioned before in the bank manager's office's description in chapter 6.3.2, a new segment was added to the story at a very late phase of the production. This was simply due to the fact that, compared to the deputy story, the outlaw's story just did not compare in complexity.

Since providing an enjoyable game experience to the player no matter which path they chose was an important production value, the additional puzzle in the manager's office was added. However, nothing in the game until then had worked with a timed system based on numerical values, so the creation of that puzzle where the player's allies would get more and more agitated took a lot of writing and testing to see how it would work. Writing on this story path ended on the 17th of March. This was much later than originally anticipated, and in hindsight led to a somewhat hurried final duel with, perhaps, too many dead ends/deaths for the player.

The weekend after that (18–19th of March) was dedicated purely for building the story structure inside *Inklewriter*. This stage mostly consisted of copy-pasting the written story from the script document into the software. Surprisingly, even if the

process sounds simple, it took several hours to complete. This was mostly due to the fact that, despite having the structure ready, it took a little while to figure out *Inklewriter's* tools and how linking the text segments worked inside the software. Fortunately, the software aided this process by showing which segments still had loose links or ended in dead ends with no continuation. Without this feature, the transfer process from the script into the software would have taken even longer.

Brief testing took place next. This essentially meant that the story would be played over and over again, with different story selections and different paths. Every death had to be explored, and every variation to interaction and dialogue checked. Due to the schedule and wanting to leave roughly two weeks for the user survey, this step was unfortunately cut really short and testing was done alongside the copying process. This showed later in the user survey as small story inconsistencies or errors that were promptly fixed as they were reported.

All in all, the writing process took about a month and a half, where originally it had been estimated that it would be completed within one month. This was largely due to a number of unforeseen complications with the game's events, as well as unfamiliarity with the software and the fact that the amount of work that goes into designing an interactive story that adapts to the player's decisions was vastly underestimated. Regardless of this, the writing process as a whole was very enjoyable, even if the story did expand and change quite a lot during it.

5.4.4 Story's evolution

The story, as has been stated before during this thesis, changed during production. The main structure of the story paths remained pretty much the same, but several things got added to them to make them more interesting to play and to add interactivity to the story, not to mention consequences for player actions. After all, the main point of a *choose your own adventure* is, as the name suggests, to allow the players the choice to do what they wish. Here is a list of some of the things that got changed/added during the writing process, followed by why said decisions were made:

- Free exploration around the town was removed.
- The hiring scenes for both story paths got tweaked.
- Added the chase scene in the darker streets of Tumbleweed.
- The option to successfully arrest the outlaw during the chase scene was removed (as well as a jailbreak scene that would have followed).
- Added a shopping sequence for the outlaw and the related wanted poster for the deputy.
- Added the option to complete the outlaw story with no ammo at all.
- Changed bank layout to accommodate the bank manager's office sequence.
- Special decisions that could affect the story events (special ending to shooting minigame, no ammo, deputy star, getting drunk, wearing a scarf, etc.).

As has been mentioned before, one of the story's biggest changes was the transition from open exploration to a rather linear narrative path with branching side events. The biggest reason for this was the editing tool that was chosen, as well as the lack of time involved in the creation of such a massive scale exploration option. Whilst it could have possibly been achieved even with *Inklewriter*, the amount of extra coding and writing would have delayed the project considerably.

When the player chooses a path, it was desired that they would show some kind of proof of their capabilities to take on the role they were applying for. As a result, two similar minigames were designed: the sheriff's shooting game and the outlaw's job interview. Out of the two, the job interview is far simpler as it only counts the player's replies on a scale of good, bad, and medium, and then mediates between those to give the player a success outcome or a failure.

The shooting minigame (see appendix 2 for a rough path outline), on the other hand, was the cause of many headaches. The concept of shooting three bottles off a fence sounds simple enough, until the fact that the players can try to shoot them in any order they wish is taken into consideration. It was decided that there would be a certain order for the bottles to be shot in, and that the game's texts would alert a perceptive player as to what that order was. Shooting them in any other order would simply end in a failed shot and a short failure message that would give an additional hint. The amount of successes and failures would then

be counted to determine the sheriff's reaction after the player has shot all three bullets.

Originally, the robbery scene for the outlaw was supposed to be a combat encounter with the lady whom the character was trying to rob. Due to the platform not allowing for combat scenarios, an alternative had to be created. It also had to be something that could work from both the deputy and the outlaw's perspectives. Several options were considered, including a wrestling match between the deputy and the outlaw, but ultimately the chase scene won out due to offering more interaction with NPCs. The small, winding streets had to be included in the story to accommodate this decision, but the end result works relatively well for both stories.

One other thing that had to be scrapped was a jailbreak scene. After the robbery, it was initially possible for the deputy to succeed in capturing the outlaw in both stories, ending with the outlaw in a jail cell. Such an outcome in the current version ends in a dead end and a game over message, but originally it was supposed to open up an escape puzzle to give the player a chance to reach freedom once more by using several items at their disposal in a creative manner. This, however, was more of a side path and did not really offer the rest of the story more value other than offering the player an extra chance, so in favour of saving time this segment was left out entirely as main focus shifted back onto the main storyline.

The robbery scene then leads to the deputy making a wanted poster for the criminal. The contents of the wanted poster are actually randomised, so the player has the potential of getting different description combos for their outlaw quite a few times. Most players probably will not even notice the detail, but it felt like a nice addition to make the game a bit more varied. The descriptions also change between reasonable and slightly odd depending on whether the player's deputy is drunk at the time of making the poster or not. Choosing to take the wanted poster to the store afterwards will lead to the store clerk connecting a

store robbery to the same outlaw the deputy is looking for. Other locations do not add any story elements.

The store robbery can go multiple ways for the outlaw. If they have worn a scarf during their bag robbery, then there is no wanted poster of them in the store and they can use their stolen money to shop to their heart's content. If, however, the store clerk has seen the poster, then the robber has several options on how to deal with the situation. They can shoot at the clerk, threaten him, or try to bribe him into helping them. If they shoot at the clerk, they are left with the default items (ammo, TNT, crowbar) afterwards. If they can manage to get through shopping, they can then choose three items out of six to continue their game with. These items can then affect how well the bank heist goes. Generally, if the player takes a lock pick or a crowbar, they can get through the heist unnoticed.

The aforementioned shopping scene did cause another dilemma for the writing: what if the players did not choose ammo at all? It had been previously stated that the outlaw's gun is empty, and if they do not find more ammo, it will continue to be so. So how would they survive the fight with the deputy with no ammo? In all honesty, they cannot. If the player has no ammo, they will lose the game. Their only option is to hope they can get away with the heist without alarming anyone to their presence. This design choice is a little bit unfair, but at this point the player have had the possibility of seeing several warnings in text of the fact that their gun is empty, and been logical enough to buy some ammo. If they have not, then the consequences are inevitable.

The bank manager's office, like stated in chapter 6.4.3, was a very late addition to the story, born out of the need to make the bank heist a more varied in terms of gameplay. Otherwise the whole scene would have just been the outlaw testing different tools to break into the vault, and that did not feel like it held enough gameplay for something that was supposed to be part of the culmination of that story path. As something else was required, the decision to add a time-based puzzle was made. This posed quite a challenge at such a late stage of

development as it featured a way of counting tries and then altering the texts players saw based on those counts (see puzzle structure in appendix 4).

The mechanic behind it was similar to the outlaw's job interview, but it needed to take into account that the players could explore the room in whatever order they wished. The puzzle is only passable if the player first searches the bookshelf and then the painting. Every other scenario ends in their allies growing too impatient and blowing up the vault's door with their own TNT. This puzzle is simple, but adds that little bit of tension and excitement into the scene, as well as further exploration of the bank interior. It also offers the players a chance to counter the mistake of not buying ammo, since succeeding in the puzzle and entering the vault quietly rewards them with a silent getaway and the successful completion of their adventure.

The story of *A Day in Tumbleweed* features many small decisions that alter the path the player is taking. One example of these is the shooting minigame from the deputy's story path. If the deputy manages to shoot the bottles in the right order, they get a special decision at the end of the game on how to destroy their final bottle (seen earlier in figure 22). No matter what decision the player chooses, the game will remember it for later. Shooting the bottle with flourish will offer a special ending to the duel at the end of the game, as well as throwing the gun does. Throwing the gun became a sort of a running gag, and a sure way to defeat no matter what the player faced. Shooting the gun normally does offer a boost of confidence for the final duel, and increase the odds in the player's favour by offering an alternate way to complete the duel. Similar decision mechanics are featured in other events during the game too, but it is up to the player whether they find them or not.

As one of the key aspects of *choose your own adventures* and interactive fiction is the ability to affect the story, including as many of these story altering decisions as possible was one of the most important design values. These points of interactivity were not necessarily very large, and could be something as simple as a character remembering the player from an earlier encounter, as well as what

the player's character did with them (e.g. the outlaw remembering what the deputy did during the daylight robbery, and mocking them for it). They could also be decisions that saved the player's life, or doomed it entirely. Changes like these should feature heavily in interactive stories, as they help the player immerse themselves in the world and motivate them to try new things to see how their decisions affect the world around them. It is all about making the world believable and fun to explore.

6 USER TESTING

To measure players' experiences with *A Day in Tumbleweed*, a user survey was created using Google Forms. All players filled the form anonymously in order for the feedback to be as open as possible and to not make them feel like they'd have to be polite in order to share their opinions. In the form, the following questions (plus a few general feedback ones) were asked to measure the players' backgrounds and what they thought of the game in general in terms of its story and mechanics:

- Do you play games? (If yes, what games and genres do you play?)
- Have you ever played text adventures (either electronic or gamebooks) before? (If yes, what? If not, why not?)
- Did you get enough information to start playing (was there anything missing from the instructions?)
- Was the game easy to play? Why?
- Did you run into any problems/obstacles/get stuck?
- How long did you play?
- Did you finish the story?
- Which path did you play?
- Was the setting interesting for you? Why?
- What did you think of the story in general (story flow, characters)?
- What did you like/ what did you not like? Why?
- Did you die? How and how did that make you feel? What was your reaction?
- What do you think makes a good text adventure?
- Bugs/illogical story paths?
- What worked and what could be changed to make it more fun to play?

The survey was shared on Facebook and took place over the course of two weeks in March 2017. Due to the limited timeframe and distribution, most of the

responders are fellow students. During the survey only 11 responses were gathered and that has to be taken into account when evaluating the results and how well they represent the average user as a whole. The results most likely do not represent a wider user base, and instead offer an insight into a smaller circle of game industry students. Nevertheless, the feedback did yield an insight into what the players preferred when playing text adventures, and what the story created for this thesis did right and wrong. These topics will be introduced in further detail, followed by what was changed in the product as a result.

6.1 Player backgrounds

All of the players who filled the survey stated that they play games. However, which games they play varied considerably. Common genres among the majority of the responders were first person shooters, roleplaying games and adventure games. Puzzle games and real-time strategy games were quite visible in the responses as well. Text adventures (in electronic or book form) were familiar to nearly everyone, with only two responders stating that they had never really tried them before due to either just not looking for them specifically or not having gotten around to doing so.

The adventure games that had been played showed a large scale of variation, ranging from the early games like *Zork* and *Hitchhiker's guide to the galaxy* to more recent titles like *Fallen London*. A trend among some players seemed to be that they like playing text adventures online on sites (like Choice of Games) that both create their own games and host games from others, resulting in a large collection of stories that vary greatly in terms of style and content but are readily available for consumption.

As a general consensus, what makes a great text adventure has a lot to do with both interesting story and game mechanics. The players preferred clear, descriptive writing that provided the player with both information related to their quest and their surroundings, as well as giving them a story to care about. Compelling characters (both NPCs and the player's own) were an important aspect as well. These two aforementioned aspects combine to create an

immersive experience that the player cares deeply about, making them really care about the actions they take in turn.

That said, those actions do have to then feel like they matter. A branching story with a lot of content was preferred over a more linear one, as well as the fact that the player should have freedom over the path they choose, and that the game should not lock them to a specific outcome too early on until they have been given enough information on what they wish to do. These opinions reflected the feedback that was given on *A Day in Tumbleweed*, and they provided a nice foundation for the story to be improved upon.

6.2 Feedback on mechanics

The responders having a wide understanding on games of different genres and having a history of playing them meant that they were very familiar with the basic game mechanics of text adventures. None of them had any trouble getting started with *A Day in Tumbleweed*, and if they did check the instructions accompanying the game, they found the instructions to be clear and concise. As a result, they also found the game easy to play as there were basically no other mechanics besides the choosing of an option to introduce themselves to.

From the responses it became apparent that all of the players found the game easy to play, not having any difficulties with progressing in it. This was to be expected as the structure and the platform of the game were both very simplified and straightforward. All of the players found the options the game presented them with to be clear and easy to understand. Most of them also preferred the fact that the text blocks they had to read were short and concise, and did not drown them with information. This did, however, split some opinions on the story, which will be further discussed in chapter 7.3.

Six players helpfully found and reported bugs in the gameplay as well. All of these were the result a very quick testing stage, which had led to some mistakes being overlooked. For example, the bank manager's office had some broken tags that would lead the player to become stuck if they explored the locations in a

certain order. Other parts of the story had similar issues with characters reacting to the player as if they had met before, or done something which they had not. Again, these were mistakes in the coding and story structuring, and were promptly fixed as soon as they were reported.

Split opinions were shared about the mechanic of sudden deaths, which was to be expected as it is a slightly controversial topic even in the industry as a whole. On one hand it punishes the player needlessly, and on the other some players like the fact that stupid decisions lead to death scenes and often seek out these scenes for entertainment. This was reflected in the game's players too: four responders stated that the unfair deaths were either annoying or left them feeling a bit frustrated. Three players, on the other hand, stated that they found the deaths entertaining. Some were even trying to specifically look for them so they could see every possible ending to the story. Two of the players did not die at all, and the rest were pretty neutral about the whole thing, and stated that they would simply try again until they succeeded.

The matter of deaths in the genre has been a debated matter, and still seems to be one. To add them for replay value is a little bit questionable, and should be avoided. Then again, if done well, it can offer entertainment to players. As a whole, avoiding dead ends and deaths is most likely a wiser option in terms of providing the players a nicer user experience. The fact that there were so many in *A Day in Tumbleweed* was mostly due to the fact that the deadline for the story's completion approached, and some branches of the story had to be cut to decrease the amount of content that still needed to be written.

6.3 Feedback on story

The players were asked to provide some background information on how long they played, did they complete the story, which paths they took, and whether or not the game's setting was interesting for them. The results varied quite a bit, even in such a small group of players. Four players played for less than 15 minutes, five players played for 15–30 minutes. The remaining two played for over 45 minutes, and over an hour.

The option to add replay value was explored in the game by creating two separate story paths for the player to explore. These two separate stories explore the same day's events from different perspectives, letting the player immerse themselves to the role of the protagonist on whichever side of the law they choose. It was hypothesized that this would keep the players playing for longer, and hopefully exploring both paths to get more out of the game. This ended up not quite working as intended as most players chose to only play one story path.

Two people never managed to complete the story, but the rest succeeded in reaching at least one of the story path endings. In terms of which paths the players preferred, 54.5% of the players played the deputy path. Out of the remaining players, 27.3% played the outlaw path, and 18.2% played both paths. This result puts further emphasis on the story, as it has become clear that not all players experience the full game as it was written. Some only see half of it, and others do not see even that if they stop playing midway through or never manage to reach an ending. So while the developer of a story-based text adventure may have a clear image in their head of what their story is like, most players will not see all the little details that were put in, or get as much story out of the game as the developer has originally intended. This is clearly also true in *A Day in Tumbleweed's* case, as the players who played for longer and experienced more of the story seemed to enjoy it more, and even specifically stated liking that they could see the events unfold from different points of view.

When asked about what could be done to make the game more enjoyable to play, the players were quite united in their desire to get more information about the town and its characters. It was a common consensus that sometimes the characters felt a bit flat, and that the town itself felt a bit dead. This feedback is very warranted and agreed with, and the reason for the fact that it may all feel a little flat and two-dimensional is simply the lack of time. Several mechanics were scrapped during production, as well as free exploration which could have given the responders the knowledge about the town and its inhabitants that they desired to receive. The fact that most players only experienced one side of the

story is likely also a contributor to this lack of depth, and should have been taken more into consideration during the story development phase.

That said, the setting itself was mostly well-received with a few exceptions of players who were not fond of Wild West settings in general. The aforementioned lack of depth also showed in the feedback of some characters being perceived as genre tropes, and as the desire to know something more about them and the world they inhabited. At the same time, the setting of the town of Tumbleweed was seen as familiar and yet fun to explore. One player stated that having a somewhat familiar setting to play in meant that they did not need to read walls of text to familiarise themselves with the world and could just get right into the story, which exactly what was intended during the development.

In terms of the actual writing part, *A Day in Tumbleweed* received both praises and improvement suggestions. Whilst most players found the story to be a very classic western trope (which it was partly intended to be), they still enjoyed it. The most noticeable complaints came from the final duel itself (from both paths), which felt like the only random aspect of the game as the player was not given any text hints or information on how to deal with the situation to survive it. This is a fair complaint, and has been acknowledged as something that needs more work. As the gameplay structures (appendices 2 and 3) show, there are multiple death scenarios in those scenes that are thrust upon the player with no prior warning or hints from the story text. To have these at such a late stage in the game, starting over from the beginning after a death may become too laborious and annoying to do for the player, despite the short length of the story. This is a risk as it means that the player will not return to the game afterwards, and may end up having a bad gaming experience because of it.

The feedback on the story was not all bad, however. The players really seemed to enjoy the little attempts at humour that were placed into the story (gun throwing, tumbleweeds, etc.), as well as the different puzzles like the bottle shooting, and the manager's office. The players who played both paths also appreciated the variety in them and the amount of story that had been included in

such a short game. A suggestion was made to include music or sound effects in the game to add atmosphere. *Inklewriter* does not currently allow this, but it is certainly something to look into as an immersion tool if the story is later moved to a new platform.

In general, despite being a little short and a little flat in places, the story of *A Day in Tumbleweed* was well-received and liked for what it was. Most players who tried it got enjoyment out of it and provided excellent feedback on how it could be improved, and that is a good start for any game.

6.4 Summary of discoveries and changes

Due to the limited time to complete both the thesis and the game related to it, this chapter will mostly focus on listing the discoveries made from the results of the survey instead of focusing on fixing them at this time. More time and further development is required to improve the story and the gameplay, and neither of those unfortunately fit into the scope of this thesis.

In terms of the user survey itself, it provided an adequate amount of feedback to be able to draw conclusions from in terms of what the players liked about the produced game and what has to be fixed or improved. The small number of responses is the result of both the short response period (two weeks) and the limited distribution. It is acknowledged that to receive more reliable feedback, a wider survey should be done with more time. More specific questions on what the players felt and did during their gameplay would also be useful in determining which areas the players felt most compelled to play through, and which story decisions were popular among them.

Gameplay-wise, the game was both enjoyed and found lacking. Both of these results were expected due to the short time available for testing and story refinement. The story was rough at places, and not all of the mechanics at the end of the production were as refined as those designed and produced at the start of it. To have avoided this, more development time would have been needed to refine and test the product before giving it out to others to test. Some

unexpected deaths should be removed and changed to something a bit more creative. Text changes should be added to the descriptive parts of the scene to give the players a hint on which options area deadly to give them a better chance of choosing correctly.

More scenes (like the scrapped jail break scene) and gameplay options are planned to be added later to enrich the gameplay and reduce the number of dead ends. Several other mechanics, like guessing the number on the vault or being able to choose character strengths and weaknesses to the player's character have been suggested in the feedback, and will be taken into consideration during further development. Turn-based combat is a feature that could also be added at a later stage, for gunfights would function much better without being text based. It would still be based on luck, as random number generation that such mechanics are based on is hardly fair, but it would give the player a better chance to succeed. This, however, would require for the story to be moved onto different software, so it is not likely to happen until the story refinement has taken place.

The story will need a lot of refining and improvement to give the players more options to really get to know the location they are in instead of tossing them into the rest of the story immediately. More dialogue with NPCs should be included, as well as other reaction options for the character to take if they wish to interact more with the events they encounter. This will give the player more to explore, as well as give more life to the people and the scenery around them. Some refinement of choice texts has to be done, as there were some complaints that some of the options during the robbery scene did not provide the outcome the player was expecting from the descriptions they chose (namely, the scaring of the lady). They should be changed to better describe what the outcome of the decision will be.

Quite a few errors were also mentioned as players reported any illogical story paths or dead ends they found. These included the following:

- A player getting stuck with no way to proceed in the bank manager's office after inspecting the items in a certain order.

- The player having access to items they had not bought when doing the bank heist.
- The game giving the option to try the key on the safe at the same time as their allies blew the door up.
- Bank heist was mentioned in text to the player, but the character forgot about it afterwards.
- Sheriff mistakenly thought they had met the player if the player went to the saloon first without talking to him.
- The bartender thought the player had met them even if the player got themselves hired through the sheriff's notice.
- Players not getting descriptions for characters later in the game due to the game thinking they had been met already.
- The store owner thought the player gave them the wanted poster even when it was delivered somewhere else.

All of those, without exception, are the result of forgetting to tag text segments or tagging them incorrectly. This was the result of the quick copy-paste process that was done to move the story from a text document onto the actual platform, and not having enough time to thoroughly test every possible path and outcome. All of these errors were fixed as soon as they were reported via the survey, and should no longer be present in the current version of the game.

7 CONCLUSIONS

At the start of this thesis, exploration of the text adventure genre, as well as the creation of a small game based on the results of said analysis were set as the overall goals. These goals were intended to provide a concise overview of what the genre's core mechanics and gameplay features are, and how they are taken into consideration when creating a branching storyline.

The analysis of the chosen games broke down their structure into identifiable mechanics (environment features, NPCs, puzzles, inventory, player character) that worked together to create a successful gameplay experience. Not all of the features were present in all of the games, suggesting that while all of these mechanics were common in text adventures, they could be applied on a case-by-case basis depending on the needs of the product and the core gameplay.

The writing process of *A Day in Tumbleweed* was detailed in terms of scheduling and story creation as well as explaining what the most complicated puzzles were and how they were constructed in terms of structure inside the chosen software. This development process provided a lot of insight on story creation and the intricacies involved, as well as the fact that it was a lot more complicated than expected. The extended writing process ended up delaying the thesis as a whole, and that affected both the quality and the complexity of the end product.

Despite the small amount of responses, the user survey provided a great deal of important information and feedback on the story, detailing what went wrong and what succeeded. A lot of the feedback supported the research findings that were made in the game analysis phase, and further cemented the core mechanics as something that should be paid close attention to when creating a branching storyline.

The feedback gained during the user survey will be used to further develop the story and to revise its structure to make it flow better and to provide the players with a more compelling story and more identifiable characters. This step was originally planned to be involved in the thesis process itself, but with the scope of this thesis and the delayed schedule, it was simply not possible. The changes that could be made were made to keep players from experiencing the same issues again.

All in all, this thesis has provided the author with a deeper understanding of the text adventure genre and interactive fiction as a whole. They learned about the intricacies that are involved in the creation of branching stories and how to create encounters and puzzles that entertain the players. The process description and software introductions can hopefully inspire others to try text adventure creation on their own. It is a much more complicated process than was originally expected and the project did not go without problems, but it has given the author a lot of invaluable experience and knowledge that can most certainly be applied to other projects in the future.

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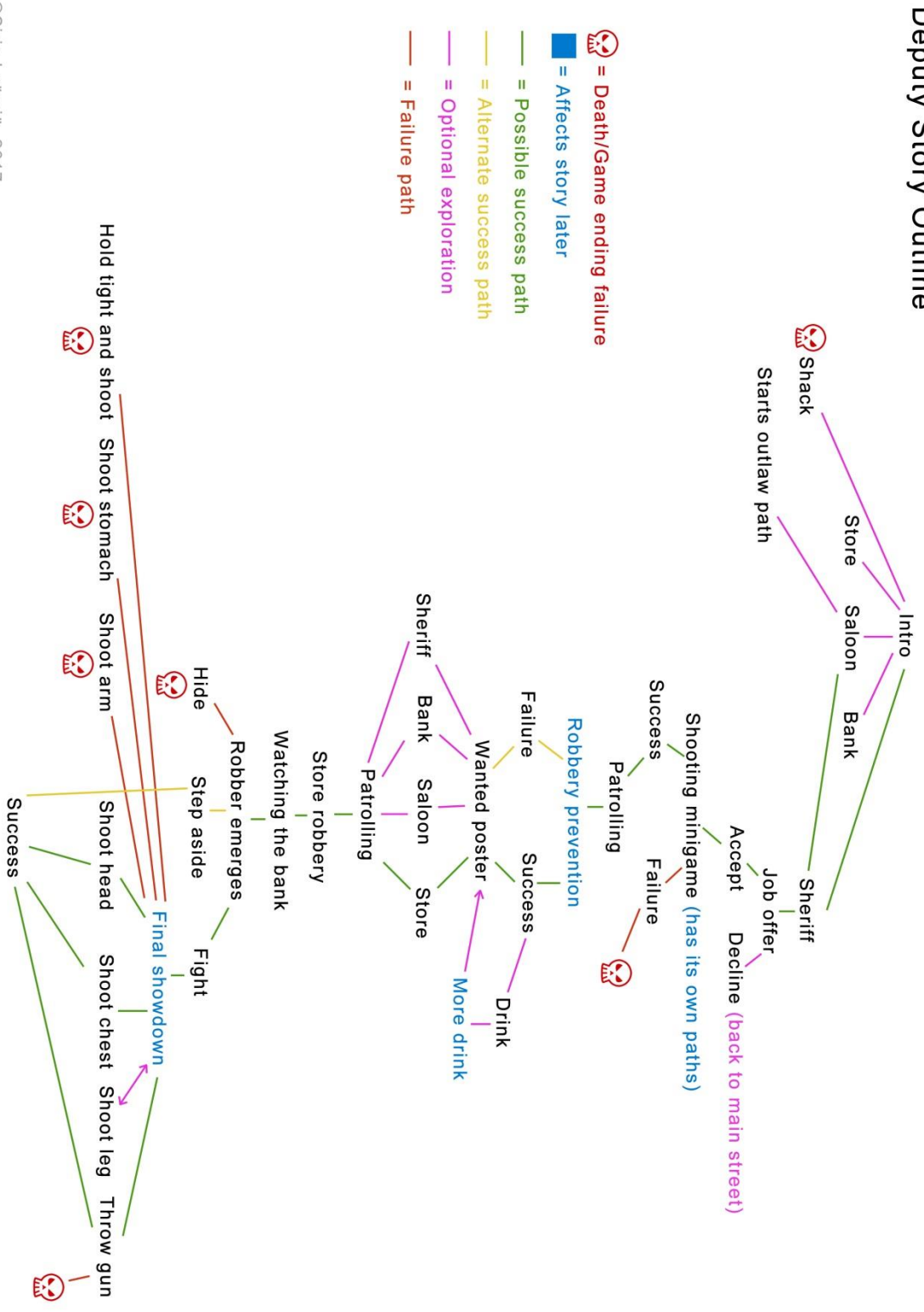
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Deputy Story Outline







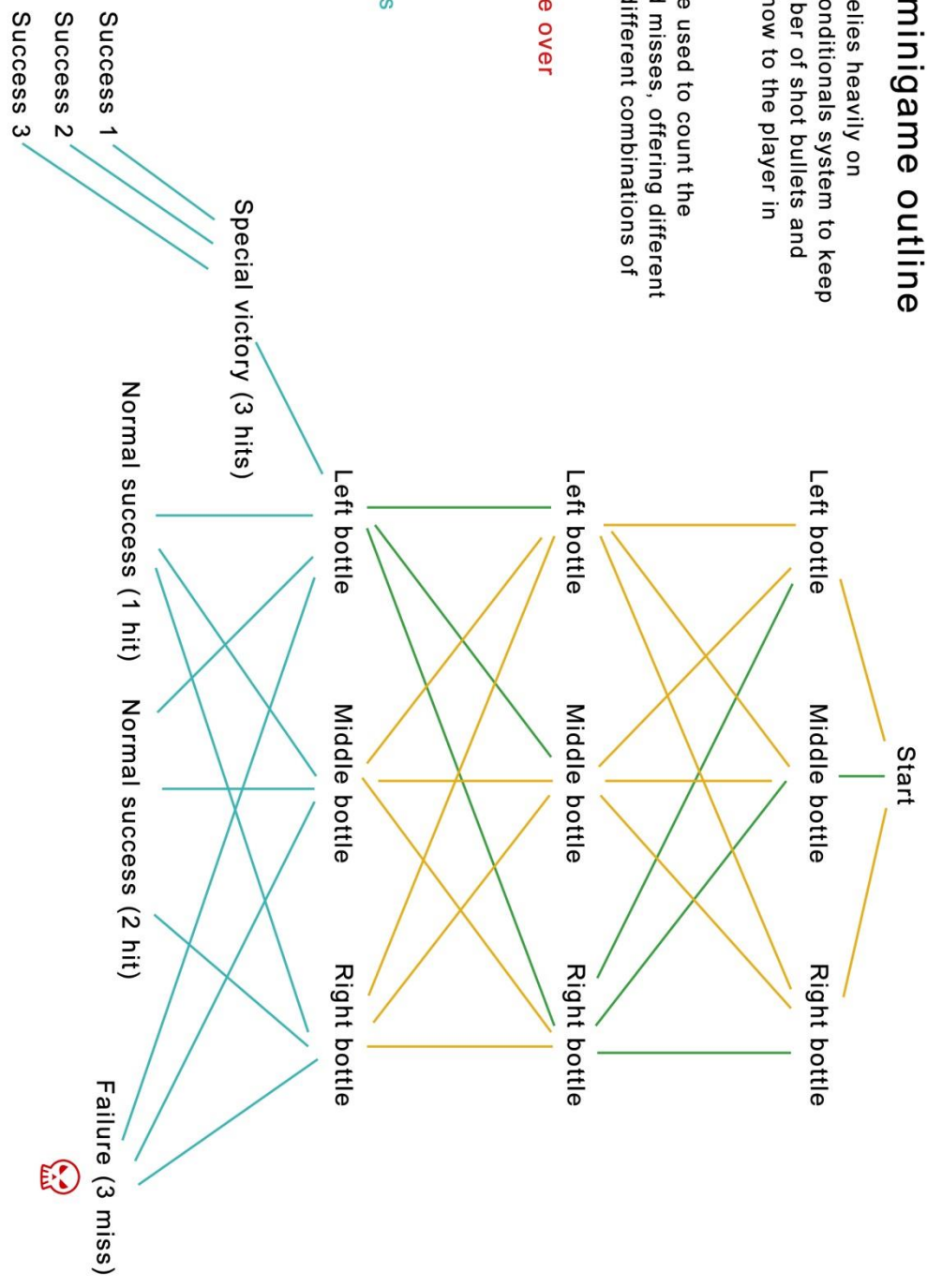
ROUGH OUTLINE OF THE DEPUTY STORY

Shooting minigame outline

This minigame relies heavily on Inkewriter's if conditionals system to keep track of the number of shot bullets and which texts to show to the player in response.

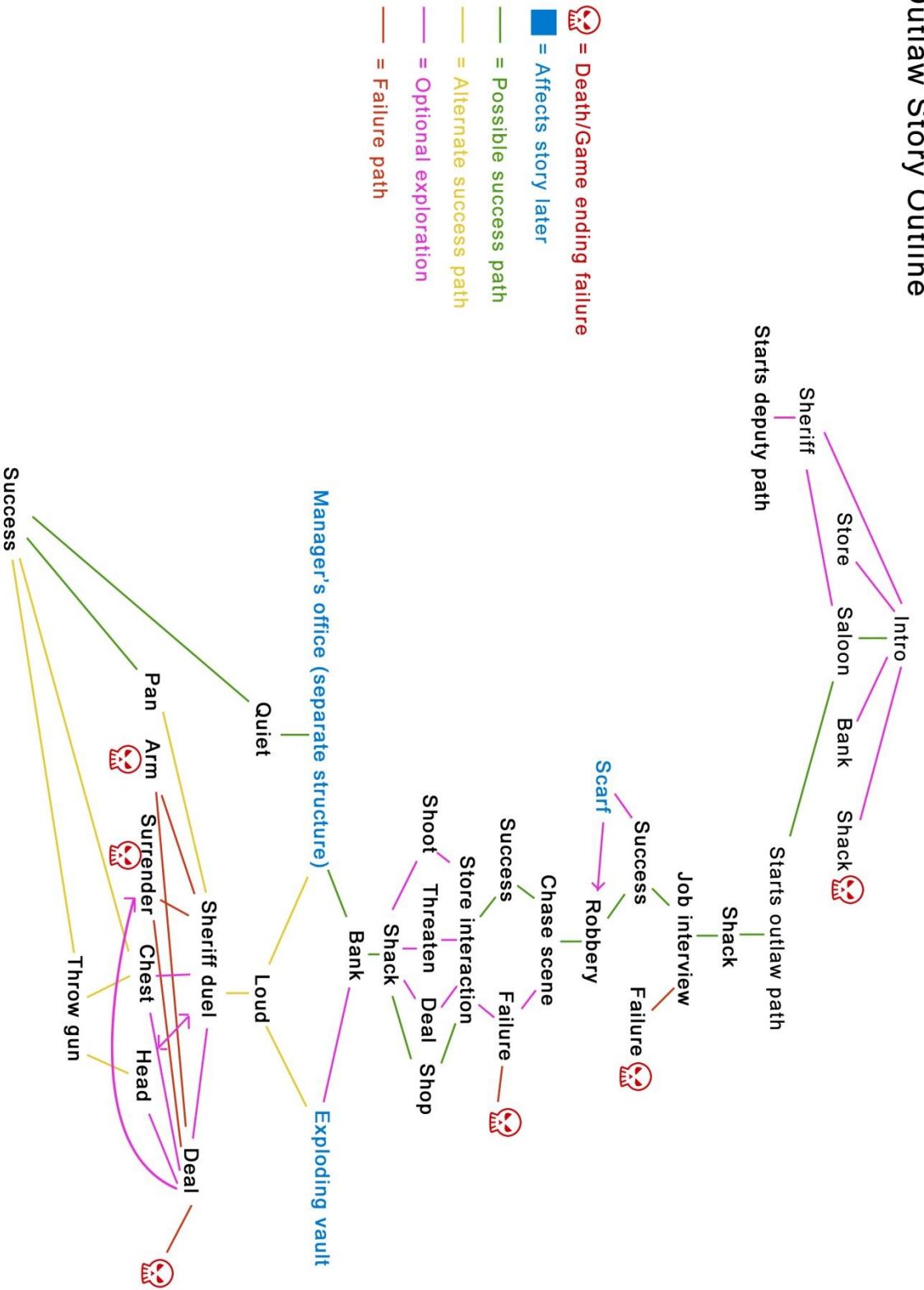
The counters are used to count the player's hits and misses, offering different texts based on different combinations of tags

-  = Adventure over
-  = Hit
-  = Miss
-  = Outcomes



SHOOTING MINIGAME OUTLINE (DEPUTY STORY)

Outlaw Story Outline



ROUGH OUTLINE OF THE OUTLAW STORY

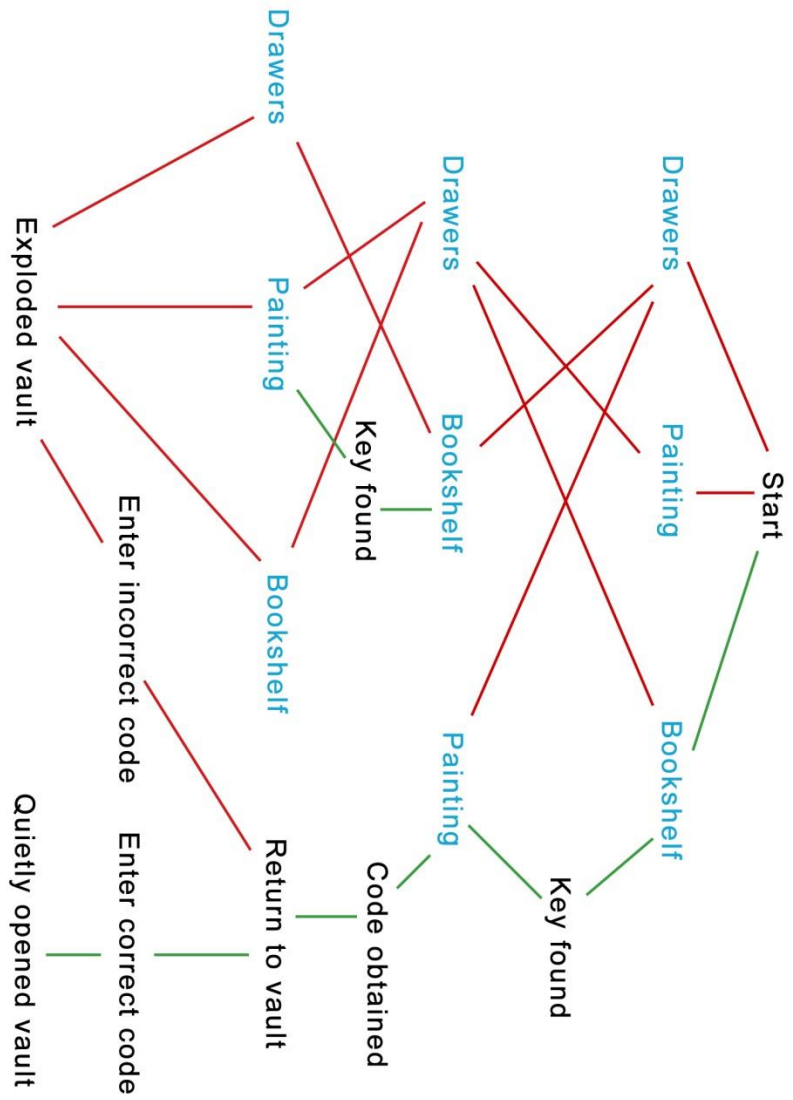
Manager's office puzzle structure

This minigame relies heavily on Inklewriter's if conditionals system to keep track of the number of times the player has explored the room. The counter counts up by one every time a new section is explored.

If the counter reaches three, the player's allies grow tired of waiting and blow up the vault door, resulting in a failed puzzle.

If the player manages to find the code, they can then try and open the vault quietly with it.

- = Incorrect choice
- = Correct choice
- = Adds one to the search counter



MANAGER'S OFFICE PUZZLE STRUCTURE