

Game Design Document

Morgan reist door de tijd

Morgan travels through time



Installment:
Morgan & Bommen Berend

By

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One Pager Page

Report overview

Case 4 - O2G2

Due to the declining interest in the celebration of Bommen Berend, KVVV and O2G2 have requested a game that would reignite this interest and teach primary school children of this important historical event for Groningen.



Target audience

The primary target audience is comprised of primary school students aged 7-11 from the groups 6-8. Teachers and primary school students not falling into the previous age demographic constitute our secondary target audience. Parents are our tertiary target audience.



Research

Our target audience was identified through the general demographic division in target audience for game design.

Research has shown that children enjoy a variety of games, among which adventure games, which are suitable to teach them historical events. It is not uncommon for games to be used in class, and Game Based Learning



The game is being developed for mobile and tablets, due to their availability to children, as children often own phones and schools often have tablets available. Currently 20% of the primary schools use tablets, although there has been an agreement that at least 9 out of 10 schools will use digital learning materials in 2020.

Concept

A story driven puzzle adventure game following the story of a young child transported to Groningen in 1672 who must work to prevent history being changed by their evil scientist neighbor, while gathering pieces of the time machine needed to return home.



Prototype

The current prototype covers most of the tutorial for the game. The tutorial includes the introduction to the story, playable puzzles, interfaces and mechanics, character art and backgrounds. The tutorial is complete from start to finish, but it needs some polish.



More in-depth information can be found inside the document

Disclaimer Regarding the Gate 3 Product

The handed in executable contains the tutorial and not yet any of the other levels. This GDD is also mainly focused on the tutorial right now. A lot of time has first been used on research and on setting up the basic framework of our game. A lot of the mechanics that have been created in this timespan can easily be reused in our coming levels. The first time setup for those mechanics and interfaces were, of course, a lot more work as compared to how much work it will be to reuse them.

The tutorial introduces the player to the story and shows them the base functionality of the game: the interface, the interaction with the NPCs, the puzzles/minigames and such.

We have established a framework for designing levels which lets us expand the game more easily from this point onwards.

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1. Introduction

This Game Design Document has been created as the base for the development of a mobile children's game about the history of the Siege of Groningen. This document has been put together as it is a) a good way to make sure that the game has an overall consistent design b) to have one main file each group member can refer back to. Changes may be applied following iteration on concepts and features based on the response received.

In the following pages the project description is first explained, after which technical specifications, the game specifications and the functional specifications will be set out. Onwards there's a short look at the schedule and finally, the process description and references follow.

2. Project Description

For Game Lab #1 a game had to be created for one of the cases. Case 4 had been given to us, which meant that we had to create a game to increase awareness and excitement about the celebration of Bommen Berend, which is about the Siege of Groningen.

This case resulted in the development of an educational mobile 2D point & tap game for children of groups 6 to 8 in Dutch primary schools, ranging from the ages 7 to 11, with puzzles and an intriguing storyline.

2.1 Concept

Morgan reist door de tijd is a game series about a child from 2019 who accidentally ends up in 1672 as they followed the neighbor's kid, Miro. Morgan needs to find their way back to their own time. In their quest to get back to 2019 they must also prevent the future from being changed by Miro.

The first installment of the game series, called *Morgan & Bommen Berend*, introduces the player to Morgan's story and takes them along on a journey through the events of Bommen Berend.

2.2 User Experience

This game is about making history interesting and exciting for children of the Dutch primary schools. This first installment focuses on portraying the history of Bommen Berend and creating curiosity about the festival. The game offers a combination of history lessons and fun by playfully introducing the children to the subject by means of storytelling and interactive puzzles. The game aims to not only inform the children about Bommen Berend but also teach them more of the time area.

2.3 Theme Setting Genre

This game has the setting of Groningen in 1672, with modern touches to accommodate the storyline and fantasy elements to appease the users. The game takes place during the Siege of Groningen and tries to follow most aspects of the Siege of Groningen.

2.4 Core Mechanics

In this game, the player can move back and forth through several locations for a multitude of activities. The quest of the player, to return home without having changed the past and thus the future, can be completed by interacting with NPCs, solving missions and doing puzzles of various kinds. Helping others and paying attention to the surroundings will be rewarded in the game. The puzzles will be aimed at various skills of the player, so that each player has a chance to shine.

As the game is aimed at touch screen devices such as mobile phones and tablets, the interaction with the game will be via touch screen motions. The player can interact with the

elements on the screen, they can collect objects into their inventory and move around in areas by swiping.

2.5 Targeted Platforms

The targeted platform is Android, for phones and tablets with the screen resolutions of:

800x480 Portrait	2160x1080 Portrait	16:9 Portrait
800x480 Landscape	2160x1080 Landscape	16:9 Landscape
1280x720 Portrait	2560x1440 Portrait	18:9 Portrait
1280x720 Landscape	2560x1440 Landscape	18:9 Landscape
1920x1080 Portrait	2960x1440 Portrait	
1920x1080 Landscape	2960x1440 Landscape	

These screen resolutions have been chosen to accommodate a diversity of tablets and smartphones. Though the focus is solely on Android now, support for other platforms may come in a later stage.

Tablets and smartphones have been chosen as they are widely available to our target audience. Currently, 20% of the primary schools use tablets, although there has been an agreement that at least 9 out of 10 schools will use digital learning materials in 2020. Most schools think that tablets will be the new standard (Mous, 2015). As of currently, there are at least 6215 primary schools in the Netherlands (DUO, 2019).

2.6 Target Audience

Our target audience is divided into several groups based upon their priority and how likely it will be that they are our users.

2.6.1 Primary target audience

Dutch primary school children groups 6 to 8, generally in the age category of 7 to 11 (Extra Credits, 2014, 2:13). The game is aimed at children from the Netherlands, with the intention of expanding this product in a (educational) series that covers the history of the country, but using the current subject as a starting point.

The primary schools in the Netherlands count 8 years in total. Usually, the children start when they are 4 or 5 and they finish primary school when they are 12 or 13. Some children are younger and some are older than the general age, as classes can be skipped or repeated depending on the development of the children. The years 6 to 8 are more often put together to do certain assignments, which makes them more suitable to be selected as the target audience group.

2.6.2 Secondary target audience

Primary school teachers who will have to handle and distribute the material.

Dutch primary school children not falling in the main age range, but that can still access the game.

2.6.3 Tertiary target audience

Parents: they tend to be swayed by brand recognition, word of mouth, or from noticing products from seeing it around them (Armstrong P., Bowman A., Gloge C., Nichols J., 2016, 1:58). However if the game will be distributed via schools (or museums), this step will be avoided.

2.7 User Requirements

2.7.1 Primary target audience requirements

- The game is easy enough to play on its own but has a broad experience that feels rewarding if the child does something right (School of Game Design, n.d.). In addition to having fun playing the game, the child should feel accomplished if they understand what they are doing, in order to maximize engagement. This can be achieved by creating fun and easy (intuitively understandable) mechanics and rewarding good performances.
- The game's educational purpose isn't overt: the teaching is mostly unobtrusive (School of Game Design, n.d.) in order to maximize immersion.
- The game gives the users the means to learn something without talking down on them (School of Game Design, n.d.).
- The game is accessible (intuitive to use and follow) despite the content (history).
- The game features are easy to manipulate to the child's needs and likings to ensure a better experience. For example, with settings, it is possible to change the volume. These settings could be used as well to enable a 'colour blindness' mode, or switch font to improve readability for children with dyslexia.
- As the Dutch education system is tendentially bilingual, and there may be children in Dutch primary schools whose first language isn't Dutch, the player should be able to change the language. In addition to making the game easier to play, it could serve as an additional education tool: to teach Dutch children English, and vice versa.
- The game UI is intuitive to the player. In addition to this, the player can easily 'go back' if they access something they didn't mean to.
- The game should be child appropriate. While it can touch dark themes, it shouldn't expose children to unnecessary violence or inappropriate content. To ensure the game will be child appropriate, we will follow the PEGI guidelines (PEGI, n.d.). In addition, the game will be free of advertisement and in-game purchases.

2.7.2 Teachers' requirements

- the product should be easy to introduce. The teacher should not need to spend too long to assist in setting up the game or need an elaborate interface for the students to understand how the product works, what the point of the product is.
- at the same time, the teacher should be left with the time to assist students if need be (ie. technical problems with the platform) without worrying about the students getting lost or too far ahead.

2.7.3 Parents' requirements

- the game does not only entertain children but also provides an education in order for my child to be productive.
- the game is ad-free (Armstrong P., Bowman A., Gloge C., Nichols J., 2016, 1:58) in order to protect my child from being manipulated into wanting to buy something and clicking on malicious links.
- the game is safe in regards to learning material, systems, and chats in order for my child to not have a mentally bad experience when using the product. A solution for this would be to either make the game single player or allow co-op via a specific code created in the instance it is used and shareable with friends (people in your friend list in-game/people you are talking with in real life). Another option would be to allow minimal communication: not allowing people to type, but only allowing them to select certain phrases or emojis.

2.8 Game Philosophy

As the popularity of the event Bommen Berend is in decline, the game aims to revive the interest in the event among the youngsters in the primary schools. The game aims to teach the youth about the events that lead to the celebration of Bommen Berend and about the way of life of 1672.

2.9 Design Goals

The design goals of this game are education, assisting education and teachers, amusement and problem-solving.

2.10 Influences

This game was influenced by a lot of different sources. The games that influenced it are for example: Spy Fox, Putput, Pajama Sam, Assassin's Creed series

Series which influenced this game are for example: Montana Jones, Argaï, Scooby Doo.

3. Technical Specifications

3.1 Concept Art

For this project, we first defined the style that would work best for our target audience, and secondly concepted how to implement fantasy elements. More in-depth information on the overall style can be found in the attachment Style Guide.





4. Game specifications

4.1 Gameplay

The game is about the player having been sent back to the past, along with someone else. By helping people the player learns about the events of the Siege of Groningen and the player gets to collect the items they need to get back to their own time. As of yet, there will be 5 points to visit: 1 for the tutorial, 3 for regular play, and 1 final one that finishes the game and has the confrontation with the evil neighbor's child, Miro.

4.1.1 Tutorial

The game starts off with a small video/collection of images to set the story. The player will be able to set their name and the appearance of the character after the introduction to the story. Once that has been done, a child of 1672 will help the player get started by showing them their map. The child will explain the base functionality of the game and show the player to the first puzzle, helping them with it. At the end of the first puzzle, the player finds the blueprint to the machine, which apparently Miro had accidentally dropped.

4.1.2 Normal Gameplay

There will be a map with several locations. Each of the locations represents a key point in the history of the Siege of Groningen and thus the locations have to be dealt with in chronological order. Each location has a few different interactions and is 'scrollable', meaning that the location is bigger than the size of the screen so that there is an 'exploration' feel to it. The interactions of the locations are NPC interactions, puzzles, and small games. All locations will provide a part of the time machine, an item needed for another interaction or an appearance item.

4.2 Progression

The player progresses the story by moving from location to location and doing all the interactions possible in those locations. All elements of the game can be failed, but the player won't die. They will be getting second chances or alternative happenings. The game aims to adapt to the level of the player instead of punishing the player for not being 'as good'.

4.3 Goal

The goal of the game is to complete it by doing through all of the locations and fulfilling all of the interactions so that the player learns about the Siege of Groningen.

4.4 Puzzles

Different kinds of puzzles will be used, all aimed at the age group of our target audience. They should partially relate to society of 1672 and partially to things the player should already know, like basic math and very basic English. The puzzles should have a diversity of not just being 'logical' or 'thinking' puzzles, but also just puzzles about being fast.

4.4.1 Suggested puzzles

Hidden objects: find the objects listed in the scene

Complete objective: use items in the environment and/or inventory to complete certain objectives

Connecting game: connect point A to point B with systematically turning elements in between.

Jigsaw puzzle: literally do a puzzle

Mahjong: keep on collecting pairs until the field is empty

Word finder: find all the words in the field and make the right word with the remaining letters

Whatever This Is Called: move your finger quickly through certain paths without hitting the walls

'Escape room': but then 'inside out' to get into a room; infiltration

Logic puzzles: can be related to the current case at hand, for example, finding the right key from a set to unlock a door (either based on instructions given or on the appearance of the key & the lock), pointing out who of a set of characters could have done X action based on the information given, figuring out what object a clue fragment the character found is part of. Puzzle ideas that have been expanded on are added to this document

4.4.2 Puzzle examples

One of the puzzles is a hidden object puzzle:



We strive to show this puzzle several times in our game, but each time with slightly different mechanics: One time the player will see the outline of the item they need to find, another time it'll be a list with words, a description of what they need to find, or they will just need to find it. The variation on rules gives the game a fresh feeling each time it is played.

There are more examples of puzzle ideas and created puzzles in the appendix.

The current hidden object puzzle is not as hidden as we had intended. It still needs some tweaking.

4.5 Level Overview

The original plan for the game was to have 5 levels, one of which the tutorial and one being the end level. Due to the time restraint the plan changed to merge the 5 levels into 3, so that it is more realistic to be able to finish the game. If there is time remaining in the next period after creating the two levels, we will expand upon the content and split levels up.

4.5.1 Tutorial

The tutorial is about introducing the player to the story and to help them get familiar with the user interface. The player can't fail the tutorial, though there is a scale of how well the player did. They can, later on, replay the puzzles to increase their own star-based scores.

4.5.2 Level 1

This is focused on the actual story of Bommen Berend, as would all other levels between the tutorial and the end be. In this, the difficulty is gradually increasing. The player will get confronted with the Siege of Groningen and will do their best to aid the city people in their fight against Bommen Berend.

4.5.3 End

The end is about finishing the story, which means that Bommen Berend gets chased away and Miro gets beaten, after which Morgan finds their way home. It tells the player about the celebrations of Bommen Berend as well. This level is more challenging than all the previous ones due to this being the "boss level". Puzzles can be failed here.

4.5.4 Overview

In the appendix, there is an overview of the planned subjects for each level, along with all the details thought of until thus far.

4.6 Reward system

Thanks to the feedback of teachers we realized we had to focus more on the reward system. Though we have a lot of marvellous ideas, the target audience is younger and in that age category research shows that they are more enthusiastic about instant gratification (Sherwin & Nielsen, 2019). This meant that we had to focus more on visual and audio feedback. So how do we make game elements feel more rewarding?

4.6.1 Research

Visual and auditory responses stimulate both children and adults in games, as those responses are capable of giving players an adrenaline rush and/or release dopamine (Pluralsight, 2015). Focusing on the natural reward system wired within most people's brains will allow for the game to motivate the players more and to keep their attention (Impractical Juggler, 2018).

4.6.2 Reward system ideas

The following are ideas that we came up with to improve the reward aspects of our game. Not all of them will necessarily be implemented, but all of them are useful to keep in mind during the iteration of the game.

Accepting a quest, confirming a change of outfit

A positive, happy sound should ring to indicate the positive effect.

Achievements

A list of achievements the player can reach. For example:

1672?	The Spy	Quick Eye
Met Jacob	Perfect Make-over	Solo
Nailed it	The Pact	Adventurer

The achievements would be based upon the normal story, playing really well and doing exceptional/strange things. So everyone would be able to unlock the normal achievements, but there would be more work in it to unlock the others.

Achieving something would mean a happy sound effect and the achievement popping up in the screen. Either in the top right or bottom right would be most suitable due to what the players are already used to in terms of UI/UX on phone/tablet/pc. The achievements would each have their own picture and title. They could be reviewed in a tab in the diary. Holding an achievement pressed down would give a summary about how they achieved it. In example: *Nailed it: Play a hidden object game without using any hints.*

Coins

Playing, in general, gives an amount of coins, but playing it really well gives more coins. These coins could be used to purchase more clothes or to purchase hints.

Completing puzzles

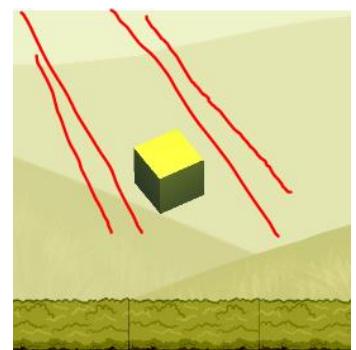
The amount of stars ‘bounce’ onto the screen, along with confetti particle effects in the background while a happy sound plays.

Finding items

After collecting the item, it appears bigger onto the screen for some moments, while light appears behind it. Or like a spinning gif of ‘sun rays’, as in to accentuate the importance of the found item. A sound effect should follow that makes it sound like a true ‘wow!!!’ moment. Happy, high pitched, fast.

Light

Accentuate the epic moment of collecting important items by casting a ray of light upon the item, just like this picture:

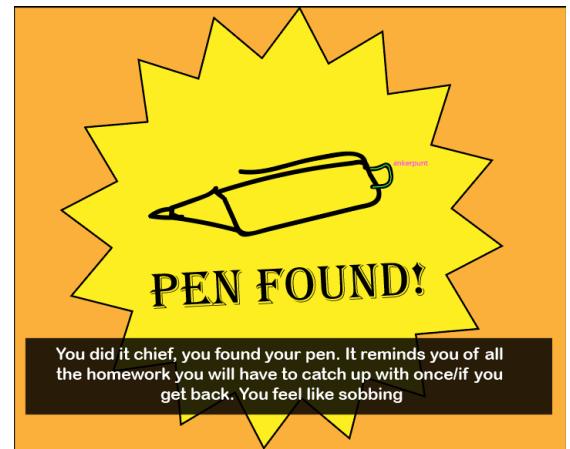


NPC Response

The response of the NPC will change upon how well one did in puzzles/minigames. If the player did really well, they will get praised. If the player did okay, they will be motivated to do even better next time. If the player didn't do so well, they will receive a free hint on how to do better next time.

Hidden object puzzle

With some or all of the items, finding them could trigger a little animation of the item popping up with a small description. This would give us room to introduce the item as well as make the hidden object puzzle a bit more engaging. Check image below for an example



Rewards for reaching certain milestones

3 stars on all tutorial puzzles.

Like completing the tutorial, or getting



5. Functional specifications

5.1 Game Mechanics / Game flow

In this game, the player can do a variety of things.

Character icon (top left)

- Tap to change the appearance

Settings menu (top right)

- select language
- select audio levels
- see about information (creators/app version/ToS)
- connect to google account
- (option to download all assets (to decrease loading time on 3g etc))
- select resolution

Inventory

- Select item (1 tap. Long tap for displaying information and bigger picture)
- Use item (Select and then click on the area/object/person to use it with/ or drag and drop)

Diary (bottom left)

- check the FAQ and instructions
- see achievements
- mission objectives
- replay puzzles
- Time Machine progress

Main map (in Diary)

- different locations which the player can select to go to
- see the timeline of the Siege of Groningen

Location

- interact with items (collect, view, use)
- interact with NPCs
- interact with puzzles
- move the view to left or right, depending on how the player swipes

5.2 Gameplay Elements

The game will have the following gameplay elements:

Appearance items

The appearance of the player is mostly a cosmetic element. It may sometimes affect the gameplay if the character needs to pass off as a certain person. For example, one cannot get into a baker's guild when wearing jeans and a t-shirt.

Diary

The diary is a small notebook that shows the missions with their objectives, the progress of the time machine blueprint, the F.A.Q. and offers the possibility to replay puzzles the player has completed before.

Items

Varying interactable objects that a player may find on different locations, which can be used in conversations or in solving puzzles.

Map

The map of Groningen can be checked to see the player's current position and to travel to other locations the player has been to before.

Phone

The settings icon leads to a phone which has the settings on there. With the settings, one can adjust the language, the screen resolution, and the sound settings.

Time Machine Blueprint

The time machine blueprint shows how many parts of the time machine the player currently has and how many the player still needs in order to use the time machine to get back to the future.

5.3 Story Writing

In the story of the game starts out with the player wanting to invite the neighbor's kid, Miro, to play, but this goes astray. As the player gets closer to the shed of Miro, the player spots something odd is going on. The player doesn't know what it is when suddenly a portal of light appears in the shed and Miro goes into it. With a rush of curiosity the player dashes after it, following Miro through the light. Suddenly the player ends up in 1672, the year of the Siege of Groningen. As the player lands in the middle of a field, they get spotted by a boy named Jacob. As the child from 1672 is worried about what will happen to their home, and the player is worried about getting back home, the two agree on a pact. The player will help the child end the war, as long as the child will help get the player back to their own time.

Miro is set on changing the timeline and with that trying to get himself in power as he as technology the people of 1672 can't even dream of.

The player is set on stopping Miro, as changing the past would change the future too!

5.4 User Interface

For the user interface, we first researched the general practices with digital touch screen products such as tablets and smartphones, after that we focused on the user interface practices for younger audiences.

5.4.1 General UI practices

When using swiping motions, people prefer to swipe horizontally from left to right(Wilson, 2015). Tablet users are often frustrated with the lack of clearly indicated touchable areas. Areas often cause unintended touches, they cannot be tapped when the user wants to tap it, or the touchable areas are too small to interact with properly. There should be clear visual clues and there should always be a way back to the previous screen. Touch screen users can be stimulated to continue exploring if part of what they see is cut off, as it is a cue to swipe to see more.

When designing the interface for a game that will be available for both smartphones and tablets, it is important to keep the differences in mind. Any app aiming to reach both devices needs to meet the following demands (Ashwini, 2017):

Adaptability: the content display adapts to the available screen space.

Interactivity: The screen size decides how much content can be shown and how much should be split up. The user should be able to interact with the whole screen through common gestures like swipes, pinches, taps and long taps.

Organization: For phone, screens is frustrating for the user to have tooltips, drop down menus, modal windows and sliders. Though it is less frustrating to use these on tablet screens, simple streamlined designs are preferred.

5.4.2 Younger Audience UI Practices

For younger audiences, it is very important to get audio and visual feedback from what they are doing (Sherwin & Nielsen, 2019). Younger audiences want instant gratification and prefer a simple and obvious User Interfaces.

Their main focus is entertainment. While exploring apps and such, they are more likely to chaotically try whichever they can.

Visualizing UI items with a metaphor makes it easier for them to navigate, such as having a map icon in the interface instead of just the word 'map'.

Younger audiences are likely to have problems to distinguish real content from advertising and promotions.

Our target audience is 7 to 11, however, these groups are split up in ages 6 to 8 and 9 to 12 (Gross, 2019).

As for the feel of the game, ages 6-8 prefer bright colours but with depth. They like characters that are human-like. In regards to the typography, simple and easy to read is preferred, but with a bit more challenging aspects here and there as they aren't 'young kids' anymore.

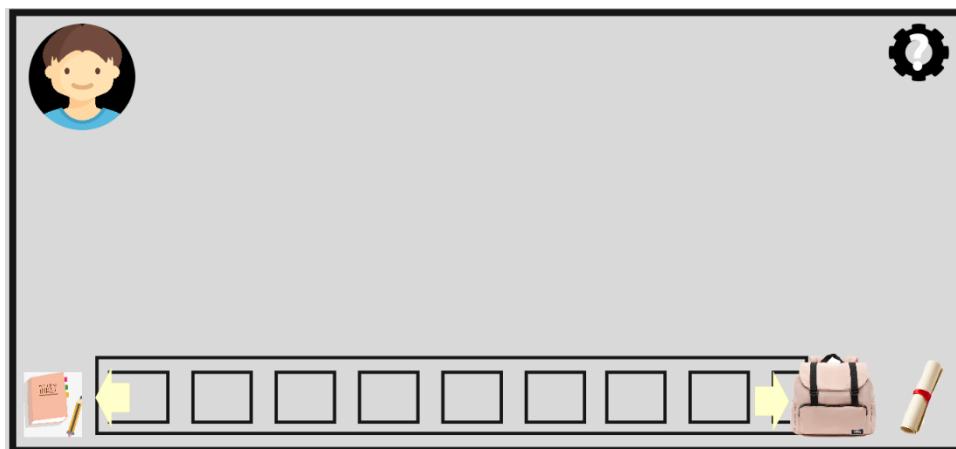
The ages 9-12 prefer a more grown-up mood with more realistic illustrations. They prefer the same type of typography but want more complex palettes and a higher difficulty in the used words.

To accommodate both of them, the palette should incorporate bright, saturated and muted colours in a balance. The characters should be semi-realistic human-like. The words used should be mindful of the user's language level, while also providing more difficult words in an understandable context to strengthen the 'big child'-feeling.

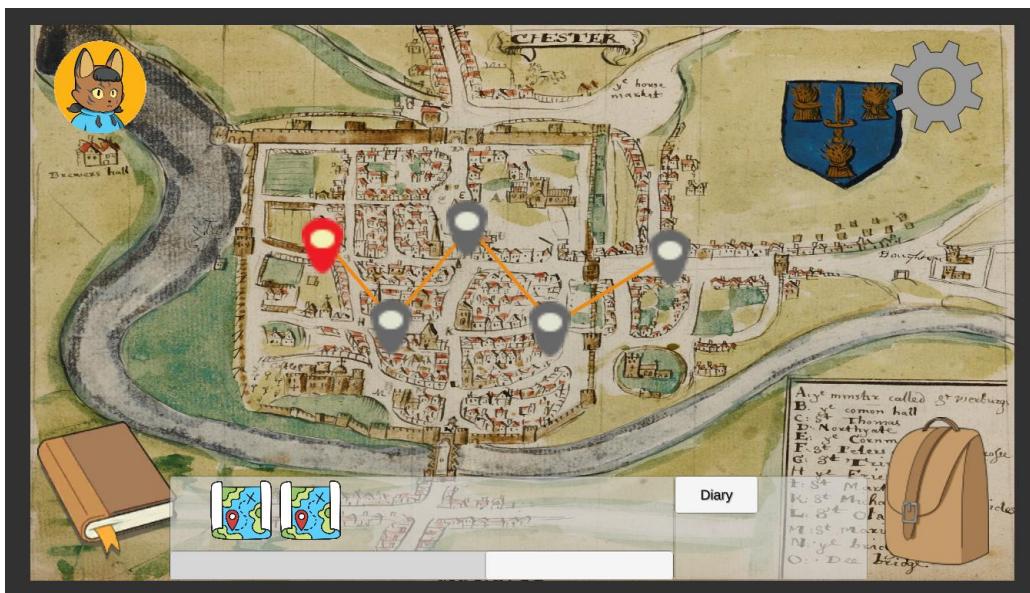
5.4.3 UI prototypes

These prototypes were created from a concept first, then the results of the research were applied to improve the UI.

Basic interface concept



In Between interface (with map open)



Current interface



5.5 Sound

As any game, our game will need sound in order to help the player immerse in the experience.

Background music

As background music we wanted an easy soundtrack that could easily be looped without the player realizing it too much. It needed to have a soothing base sound so that it would not conflict with the sound effects of other game elements. Elisa Kok made a prototype for us and is working on creating a full soundtrack for our game. Her reference information has been put in the references.

General feedback sounds

For actions the player is allowed to do, we wanted neutral feedback sound.

Good actions needed a high, cheerful sound to stimulate the player to repeat their actions.

Bad actions needed a lower and actions that were not allowed, more negative sound as to tell the player to not repeat the said action.

In a way the sound already needed to guide the player in such a way that they would know the result of their action without even reading the feedback of the NPC, as not all people are eager to read.

6. Testing

These following things should be play tested. This is a list to make sure we don't forget when we get to that phase.

Playtest list

- Art style
- difficulty puzzles and quests
- logic of gameplay
- logic of UI
- enjoyment of game
- is the history brought interesting enough?
- what are the general tablets the kids have at school?
- which groups would our game be most suitable for? 1-2-3, 4-5, 6-7-8?
- how difficult can the Dutch be? / how simple should the Dutch be?
- Are we missing things?
- Length (duration) of the whole game
- core gameplay loop
- Opinion on sound

7. Schedule

As a lot of research is being done and the concept is rather big, the game won't be ready before the end of the 9th of April (Gate 3). We aim to have our tutorial finished and to set-up the systems so that we can more easily implement the next levels.

Originally the game should have 5 levels, but to be on the safe side we have scaled it down to 3 in total, with the option to scale it up again if we have more time left at the end of the next block.

Next period we want to make level 1 and the boss level at least, while also improving what we have.

This is our weekly schedule:

Sprint stand ups:	Monday, Wednesday, Friday	
Group meetings:	Thrice a week, in person	Extra meetings as needed

We have also created a preliminary planning for the next period, which can be found in the appendix.

9. References

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Artist Reference

Elisa Kok, a sound creator by the name of Spicu. Can be visited via:
<https://www.youtube.com/channel/UCw7GWxrJL6EmapZWfbelOPA>

Appendix

A.The Siege of Groningen (1672)

Events

In the disastrous year 1672 The Dutch Republic was attacked from 4 sides at once. The North-Eastern side was attacked by the prince-bishops Bernhard von Galen (Nicknamed Bommen Berend), bishop of Münster(1606-1678).

In 1665 he had attempted to take over the area too, but did not get further than Winschoten. This time he saw his chance because The Dutch Republic was already getting attacked from several sides (Koninklijke Vereeniging voor Volksvermaken Groningen, n.d.-b).

Via Overijssel he travelled onwards to Coevorden. This had been seen as an impenetrable place. Onwards he tried to take over Bourtange, but they had a too strong defense. A lot of people from Drenthe fled to Groningen, as the leader (landdrost) of the province had fled as he believed collaborating was better than fighting.

At this point Carl van Rabenhaupt (1602-1675) from Groningen was chosen as leader for them. He was responsible for the defense of Groningen. Bommen Berend tried to reach Groningen by travelling around Bourtange.

From 21 July 1672 the Siege of Groningen started by the army of Bommen Berend. Troops from Cologne* aided him. Though a lot of 'progress' was reached in the South of Groningen, it proved to be a tough battle.

The troops from Cologne suffered a humiliating loss at Nienhuis at Garrelsweer. Bommen Berend's troops had been beaten at Noordhorn[12]. Though Bommen Berend had reached the city from the South, the Northern side of the city remained available for the delivery of supplies. This combination of events endangered Bommen Berend's troops/position and so after 4 weeks of harsh battle they retreated. Onwards Groningen was freed on the 17th of august 1672, but due to a change of calendar, that became the 28th of august. (juliaanse -> gregoriaanse)

A few months later Coevorden also got freed by Van Rabenhaupt (Historiek, 2018).

*military from Cologne was aiding Bommen Berend because Zonnekoning Lodewijk XIV/Louis XIV of France had made a pact with the dioceses of Münster and Cologne to take revenge on the Dutch Republic. There was a lot of envy from the surrounding countries: they had more power but less wealth than the Netherlands. Though the Netherlands had an excelled marine force, the ground troops were disappointing (Koops, 2018).

Defense details (Van den Brand, 2018)

- There was a sconce at Noorderhogebrug.
- The lands to the West, North and East of the city were put under water. This meant that Groningen could only be reached via Hondsrug.
- The attackers came from Aduarderzijl
- there were several defensive fighting positions (loopgraven). The troops from Cologne were between Winschoterdiep and Oosterpoort, while the troops from Münster were located between Oosterpoort and Marnixpijpen.
- Different kinds of cannonballs/bombs were used: to damage, to burn and to create a horrifying scent.

Places

Places that got taken by Bommen Berend, at least for a while:

Staphorst, Coevorden, Winschoten, Oudeschans (Koops, 2018), Westerwolde, Oldambt (Van den Brand, 2018)

Key Places in Groningen

Groote Griet - Grote Markt 36-39

At least 20 big cannons were made in preparation of the fight against Bommen Berend.

There is now a café at the spot where this specific cannon once stood (Koninklijke Vereeniging voor Volksvermaken Groningen, n.d.-a). The legend of Groote Griet speaks of a giant cannon which the people of Groningen used to shoot at Bommen Berend. At that moment he was having dinner at the tower of Haren. The cannonball supposedly shot the sauerkraut with bacon bits from under his nose (in a literal sense, not the idiom) (Van den Brand, 2018).

The 9 Gates (Stad Groningen Click't, 2018)

1. A-poort
2. Herepoort -> Oude Herepoort = Corner of Herestraat/Zuiderdiep
Groningen had many city gates and fortified walls to protect the inner city, which were crucial elements in the defense in 1672. The foundation of the gate is still present (Koninklijke Vereeniging voor Volksvermaken Groningen, n.d.-a).
3. Poelepoort
4. Oosterpoort
5. Boteringepoort
6. Ebbingepoort
7. Steentilpoort
8. Gardepoort (Groninger Internet Courant, 2018)
9. Kranepoort

Facts

- Bommen Berend was the nickname because he used a lot of bombs.
(bommen=bombs)
- Bommen Berend made a tactical mistake by overloading his artillery batteries in attempt to have a 'bigger reach'. This caused them to be unusable.
- The bad weather caused the defensive fighting positions to be filled with water.
- There was enough food in Groningen and there weren't that many civilian losses in Groningen itself.

Celebration Elements

Traditional elements of the celebration:

- 'peerdenspul' (running horses)
- a fair
- firework in the city park (stadspark)

Key persons

Good side

Carl von Rabenhaupt, baron of Sucha (1602-1675). A Bohemian Hussite nobleman. Rabenhaupt was recruited by the Dutch in 1671 as colonel of his own regiment, later promoted to lieutenant general.

Bad side

Christoph Bernhard Freiherr von Galen:

Prince-bishops Bernhard von Galen, bisschop of Münster, also 'Bommen Berend' due to his bomb tactics.

Extremely focused on getting power, prestige and converting people (back) to catholicism.

Map Groningen 1672

This is a map of Groningen and the surrounding fortresses in 1672.

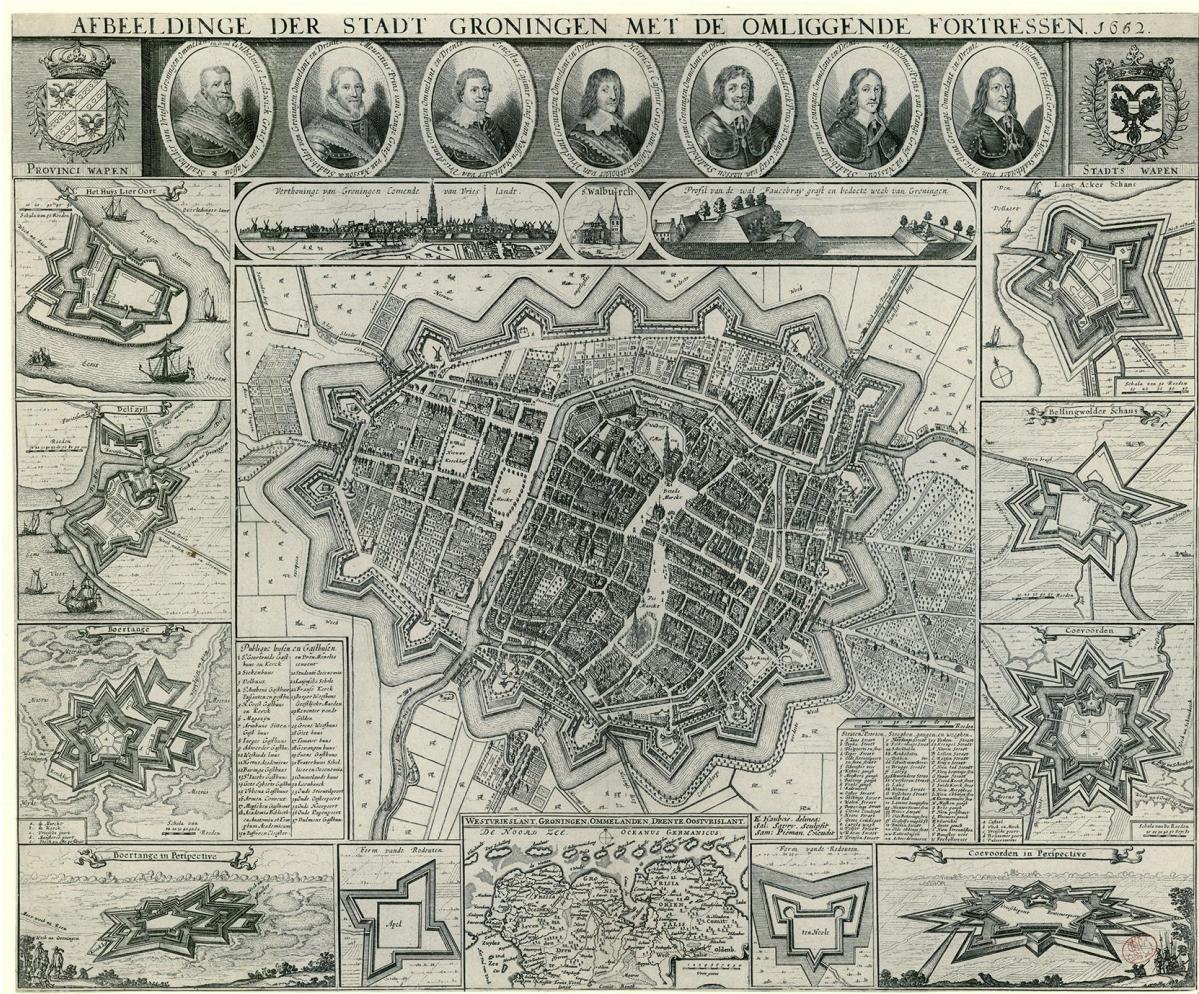


Figure 1. Map of Groningen (1652 and/or 1672).

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Figures

Figure 1. S. Savery (Print maker), E. Haubois (original creator). (1652 and/or 1672). *Map of Groningen*. Retrieved on March 21, 2019, from <https://www.rijksmuseum.nl/nl/collectie/RP-P-AO-3-16>

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B. Tutorial Details & Story

Main Objective: introduce player to story and explain functionality

Player: has backpack/shoulder bag with a few things with them, so that the interface makes sense.

NPCs: Jacob, Jacob's sister and mother. [Jacob's uncle perhaps] Potentially an NPC for the puzzles. [we can first use Jacob as NPC for the puzzles]

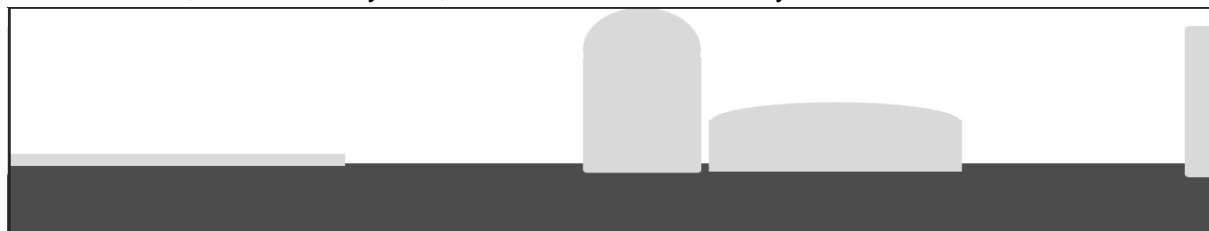
In short: Get sent to past, get introduction kid from that time, get to Groningen

Location map: The first map location should be one on the edge of the map. The actual map should start at farm lands, then move onto nature, a small mill or such and then the start of groningen.

-Temporary- sketch area grey area:

*This will be altered after the puzzles, so they can fit in and so we can better formulate what those exact places need to be.

The size should be 1x the height of the normal resolution but 3x the width of the normal resolution. So, if it is 1280 by 720, it should become 3840 by 720.



Important moments:

- Introduction clips/movie/pictures
- Explanation functions
- Puzzles/minigames in the route to Groningen
- Small clips/npc interaction at the end of the tutorial part

Short version dialogues

Conversation 1:

J: Hey, are you alright? It must have been those soldiers...

Hey, gaat het met je? ...Het waren zeker die soldaten..

P:?

J: Hey, you, come on, there's no time to be laying about. We need to get going before the soldiers come!

We should be able to reach Groningen by nightfall, mother guesses.

Hey, kom op! Er is geen tijd om te blijven liggen! We moeten gaan voordat de soldaten komen. Moeder denkt dat we Groningen rond de avond kunnen halen.

P: Where are we?

Waar zijn we?

J: They must have hit you pretty hard. But that's fine, you'll be fine again.

We're in Drenthe right now, taking the nature route to Groningen, so it's less likely we'll encounter soldiers on our way.

Ze hebben je vast hard geslagen.. Maar geen zorgen, het komt vast wel weer goed. We zijn nu in Drenthe en we gaan de natuur route nemen naar Groningen. De kans is dan kleiner dat we soldaten tegen komen.

[Player receives map, so map icon appears on interface]

J: Here, you can have this. Sister has another one, so it's fine. And don't worry about the date. Not that much has changed between 1665 and 1672 according to Mother, the map is still fine to use.

Hier, je mag dit wel hebben. Mijn zus heeft er nog een, dus het is prima. Maak je geen zorgen over de datum. Er is niet veel veranderd tussen 1665 en 1672 volgens moeder, dus de kaart is nog prima om te gebruiken.

<map screen opens up, the current position of the player is marked and the position of groningen lights up as Jacob says "We're going here!" /"Hier gaan we heen!">

Conversation 2:

J: Hey, are those your things on the ground?

Hey, zijn die dingen op de grond van jou?

Conversation 3:

J: Let's get going!

Laten we gaan!

(IF THE PLAYER IS GOING IN THE OPPOSITE DIRECTION)

Conversation 4:

J: Hey... we seem to be going the wrong way?

Hey... We lijken de verkeerde kant op te gaan?

(ELSE)

Conversation 5:

J: Look! It's Groningen!

Kijk! Dat is Groningen!

Conversation 6:

U: Welcome stranger. Any friend of Jacob, is a friend of ours.

Welkom vreemdeling. Een vriend van Jacob, is een vriend van ons.

Conversation 7:

J: So where are you from?

Dus, waar kom je vandaan?

P: I'm from Groningen.

Groningen

J: You're from Groningen? Then why were you in Drenthe?

And why were you dressed like that? I have never seen clothes like that before!

Je komt uit Groningen? Waarom was je dan in Drenthe?

En waarom ben je zo gekleed? Ik heb nog nooit dat soort kleding gezien!

P: Well... I followed someone and got here

Nou... Ik was iemand aan het volgen en toen kwam ik hier.

J: Oh? But that still doesn't say anything about your clothes.

Oh? Maar waarom ben je zo gekleed?

P: I'm from 2019, we dress differently there.

Ik kom uit 2019. We dragen daar andere kleding.

J: Wow! 2019? That is so cool! Look, these are the clothes we have!

Wow! 2019? Dat is zo gaaf! Kijk, dit is kleding die wij hebben!

Conversation 8:

J: Hey.. you're from the future. Do you know what the future looks like?

Hey.. Jij komt uit de toekomst, he? Weet jij hoe de toekomst eruit ziet?

P: A bit.. I know what it looks like but I don't know everything about it.. I don't know how to get back home either.

Een beetje.. Ik weet hoe het eruit ziet, maar ik weet niet alles ervan. Ik weet ook niet hoe ik thuis kan komen.

J: How about this... I'll help you get back to the future, and you'll help me end this war, so we can both go back home!

Wat denk je hiervan... Ik help jou terug te gaan naar de toekomst, en dan help jij mij om deze oorlog te stoppen? Dan kunnen we beiden terug naar huis!

P: Alright, let's both get back home!

Ja, laten we beiden terug naar huis gaan!

Long version:

It was a bright and sunny day when Player went into their garden. The player wanted to invite the neighbor's child, called Miro. Though the player considered Miro as a bit strange, the player wanted to invite Miro anyway. How was Miro going to get used to this neighborhood, if Miro never joined them for play? The player had seen Miro tinkering away at some weird machine in the shed quite some times now, always declining to play with them. Who knew, maybe today would be different? At least the weather was gorgeous! The player hopped over to the back of the garden, where the fence was lower and they could just peak through the window of the shed to see what Miro was up to. The player reached out to knock on the window, as Miro seemed to be immersed in his project. Just as the player's hand touched the window a bright flash came from the machine. Shocked the player looked at it. Miro just stepped into the bright light! What?!

Anxious about Miro's wellbeing and curious about where Miro could have gone, the player dashed over the fence and charged into the shed. The bright light almost looked like a mirror with the swirling colours of soap being dropped onto a water surface. Amazed by the sight, the player moved over and gently reached out to touch the odd light. As the player did, the light sucked the player in. Everything grew dark for a bit as the player began to feel rather dizzy and disorientated.

Moments later, which could easily have been hours or days later, the player heard a kind voice speak to them.

"...Hey... Are you alright?" the voice asked hesitating. "...It must have been *those soldiers*..." Slowly the player opened their eyes, taking in the new environment. The player guessed it had to be a dream. The last moment they remembered, they had been in the shed with the weird light... Not on a farmland in the middle of nowhere? And that beautiful bright and sunny weather, nothing had remained of it. Just a bleak sky with grey plumes of smoke. The air smelled like a barbecue, but the player was sure there hadn't been a barbecue in the neighborhood just now. As the player looked at the source of the voice, the player saw a young boy standing partially over him, watching him with some concern. A small smile seemed to come on the boy's face as he realized the player was conscious again.

"Hey you, come on. There's no time to be laying about, we need to get going before more soldiers come!"

Before the player had any time to ask questions, the boy helped the player up on his feet and dragged him along to what seemed to be his older sister and mother, who had quite a

bit of luggage on them. "We should be able to reach Groningen by nightfall, mother guesses" the boy told him.

As the player tagged along with the small family, they wondered curiously "Where are we?". The question surprised the boy a bit, but he recovered quickly. "They must've hit you pretty hard.." the boy guessed. "But that's fine. You'll be fine again" the boy said, patting the player's shoulder. "We're in Drenthe right now. We're taking the nature route to Groningen, so it's less likely we'll encounter soldiers on our way." The boy pulled a map out of the shoulder bag he had on him, giving it to the player. "Here, you can have this. Sister has another one, so it's fine." the boy stated, as he opened up the map for the player and pointed out their direction.

[hidden object puzzle= getting the other interface items]

Curiously the player observed it. Not only did this look like one of those maps from the museum, or perhaps even those treasure maps of television, it also said something very odd: 1665.

"1665?" the player asked. It seemed to be the year of the map.

"Oh, yea.. Though it's 1672, the map is still pretty accurate, so don't worry about it" the boy answered.

The idea that the player had time-travelled felt rather odd. Though it was a marvellous idea that such would be possible, it felt like this could not be real. The differences were obvious, yet it felt more logical that he had hit his head and this was just a dream.

[puzzle city gate]

As time passed, the boy had introduced himself as Jacob, and they had arrived in Groningen in the evening. In Groningen they managed to take refuge in the house of Jacob's uncle. Though it was a small house, it was big enough for them all to fit. Jacob's uncle lived there alone, which meant that he had a spare room and a small attic available for his guests. Jacob and the player ended up in the small attic room, as the family was more than willing to provide the player with a place to stay as well. In these rough times, it was best to stay together, Jacob's family believed.

[clothing puzzle]

While lying on bed, Jacob couldn't contain his curiosity about the player anymore.

"So where are you from?" Jacob asked softly, as they were supposed to be sleeping.

"I'm from Groningen" the player answered.

"You're from Groningen? Then why were you in Drenthe? And why were you dressed like that? I haven't seen anyone in those kinds of clothes before" Jacob mentioned.

The player remained silent for a moment, wondering if they should be honest about it or not. It was a rather weird story, honestly.

"Well.. I followed someone and got here." the player tried.

"Oh? But that still doesn't say anything about your clothes" the boy remarked.

"Well... I'm actually from 2019.. Miro, my neighbor made a machine and it got me here. I'm not sure why, but I travelled back in time" the player stated, watching Jacob closely.

A moment Jacob remained quiet as he was visibly thinking about this.

"Wow! That is so cool! So you know how this all goes? You know what the future will be like?" Jacob wondered.

"..A bit. I mean, I know what the future looks like.. but I don't know everything about the future.. Honestly.. I just want to get back to my own time.." the player admitted.

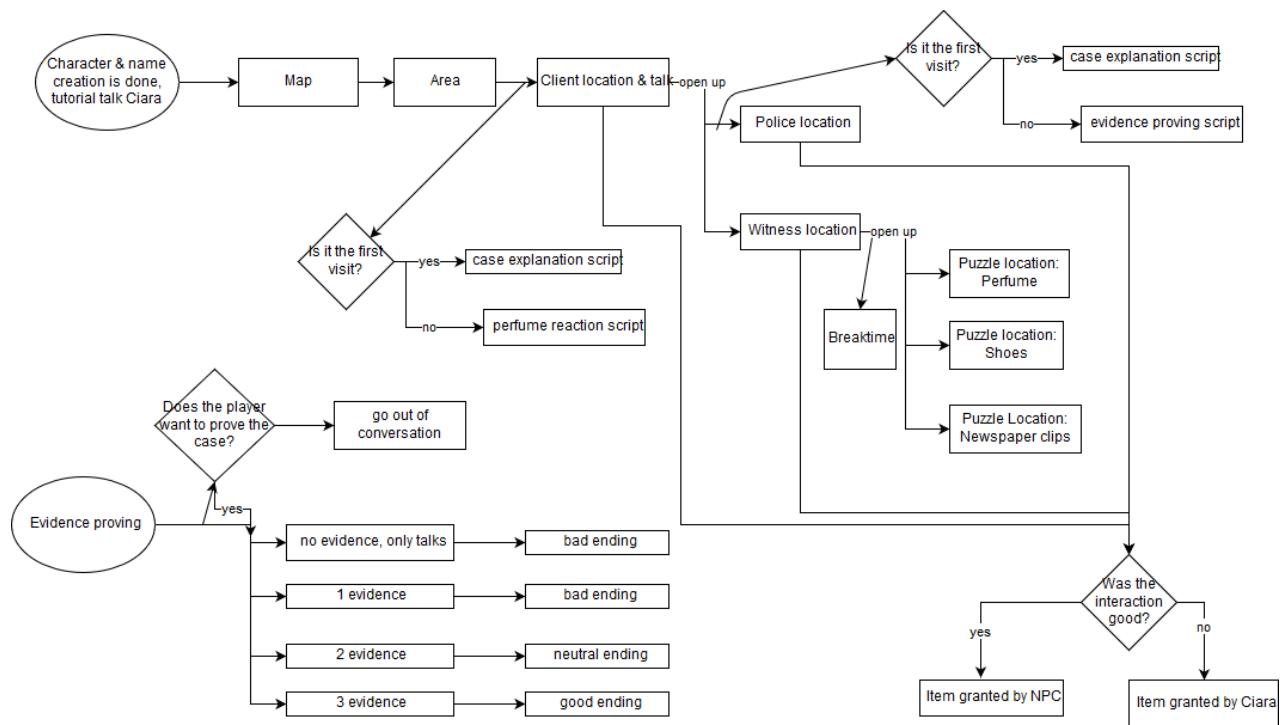
"..Yea... I get that... I want this war to be over so I can go back home... and so dad will be back too.." Jacob sighed. "I know! How about this? I will help you get back to the future, if

"you help me stop this war" Jacob suggested in a fit of enthusiasm. It seemed Jacob had great faith in the abilities and knowledge of the player.

"Okay" the player answered. "Let's get us both back home!" the player agreed, making a pinky swear with Jacob.

[this marks the end of the tutorial. As the morning begins, the first spot on the map in Groningen will be available for the player to go to and Jacob will suggest the player that they'd look around to see if they can help people, so that those people might help them in return]

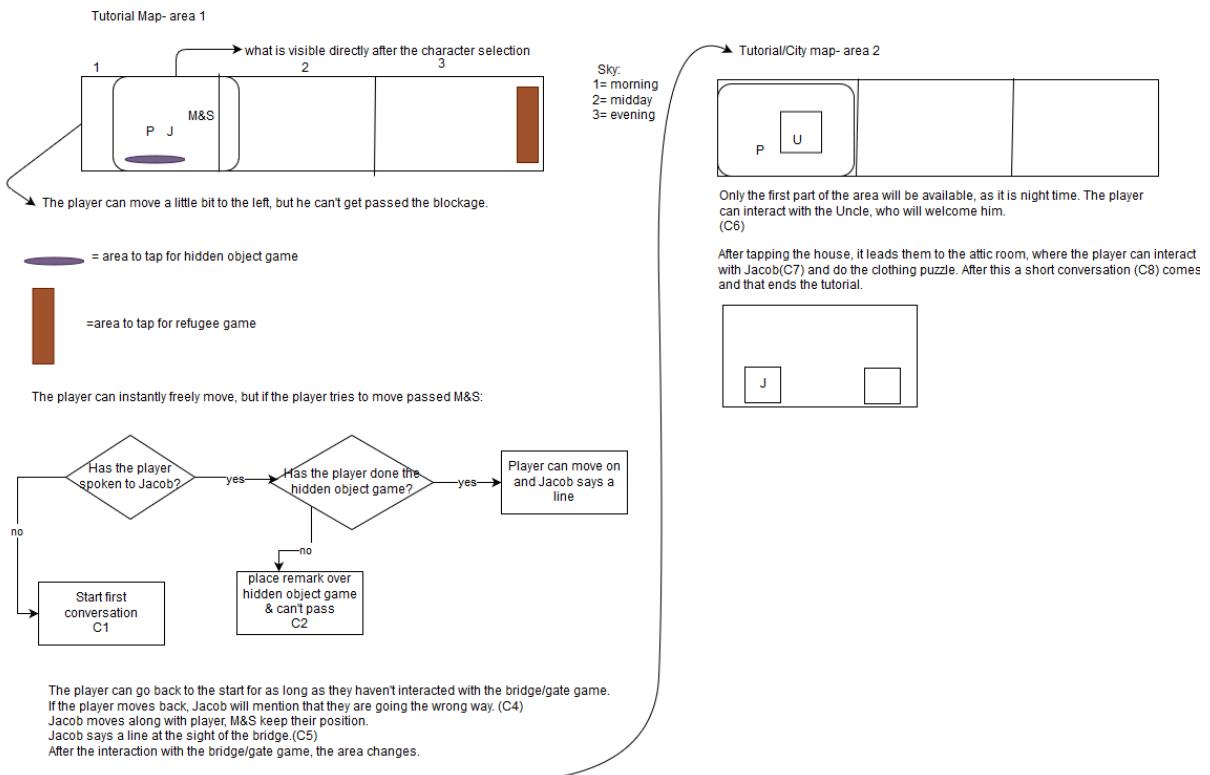
C. Tutorial Level Flowchart



*But only if the proper answers are given

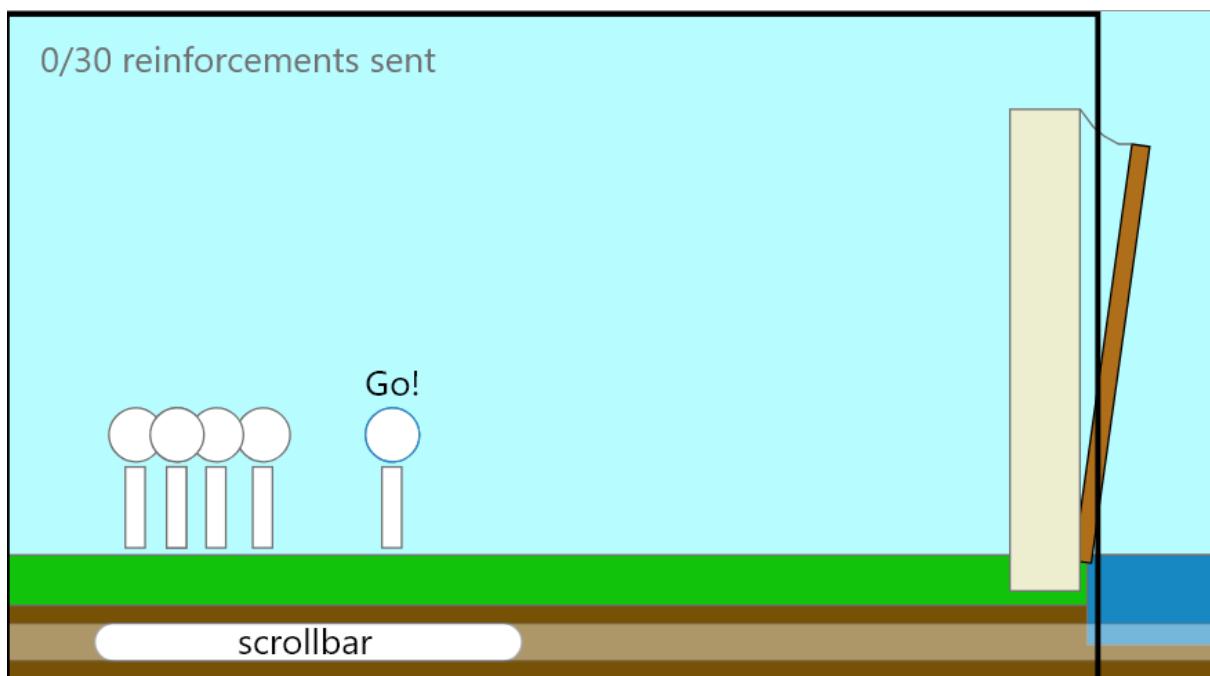
** When using 2 or more evidence pieces, the system needs to keep track of which evidence has already been used and check if the same is being used again in the conversation. The police NPC will give a somewhat snarky response if a piece of evidence gets shown twice.

After initial introduction and character selection:



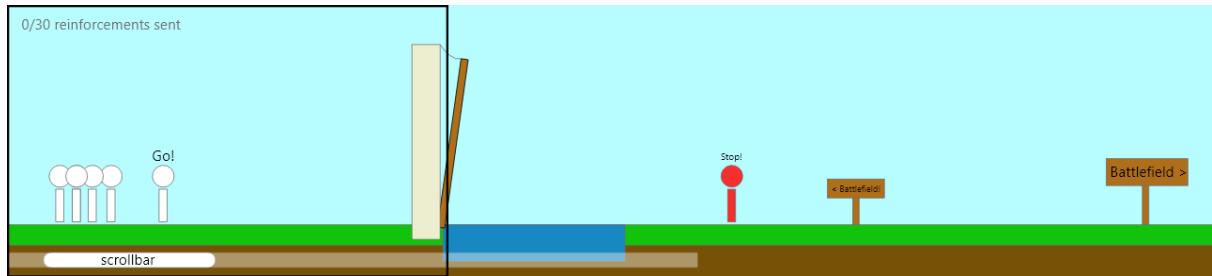
D. Puzzle ideas

Rescue puzzle



Areas surrounding Groningen are getting attacked by Bommen Berend's troops. Because of this, the people are moving to Groningen for safety. On the way there, obstacles are hindering the people from moving forward. Some obstacles are put there by the main character's neighbour to introduce him into the story. The neighbour will track down the refugees and once he catches them, they count to the captured refugees. The puzzle works as an introduction to the main scene of the Siege of Groningen, Groningen itself. The puzzle requires the player to manage multiple things at once to receive the highest possible score, three stars.

This stretches out over an entire field where the player can scroll from left to right. Left is where the people run in, and right is where they need to go. On the way there are hindrances to the people and the player needs to make sure they get there in time.



Example of the entire field (shorter than final version), with the black bars indicating what the player can see. The purpose of the game is to manage multiple aspects at once, as the soldiers will be at different points of the track at once. The score depends on how many soldiers the player managed to get to the proper site in time.

How it'd control:

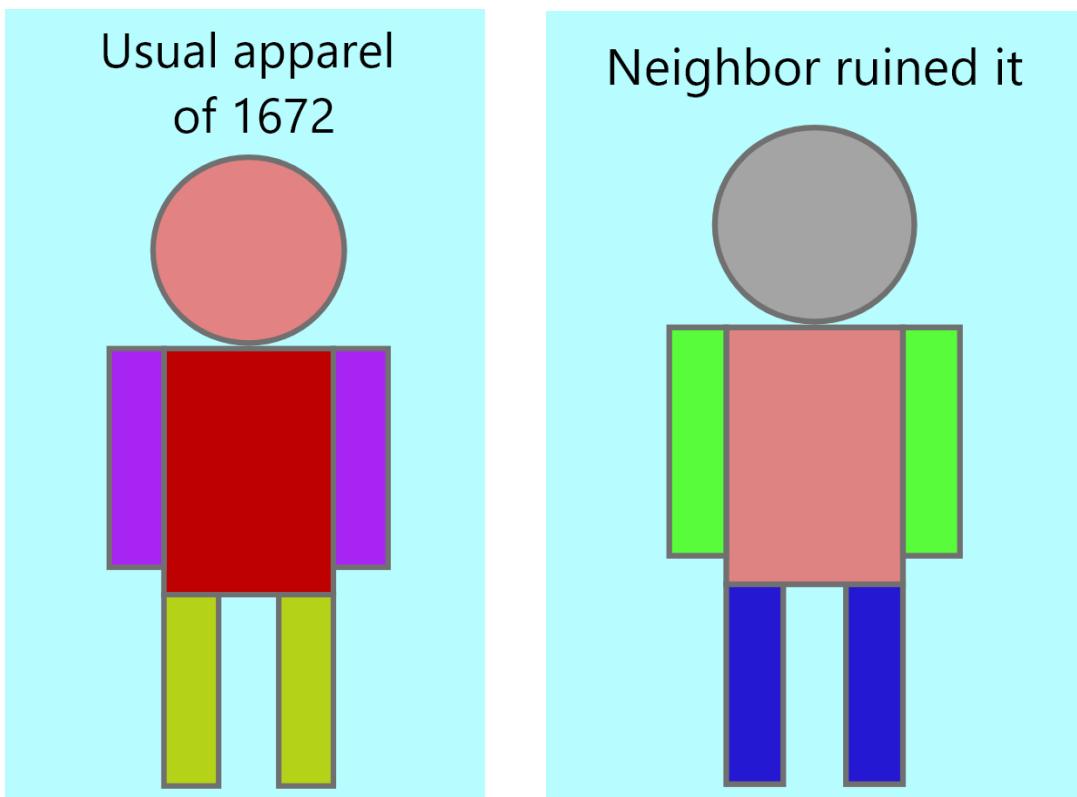
The player scrolls from left to right and back using their finger to drag the screen. The player can hold and drag at any place on the screen to move it, not specifically the bottom. The player interacts with the objects by clicking on them. This will open a small pop up screen for the player revealing some choices (e.g "open" and "close" for a gate).

Over time, objects will change from status so the player has to constantly manage the objects to make sure they're still performing the correct action (e.g the gate closes automatically after a while).

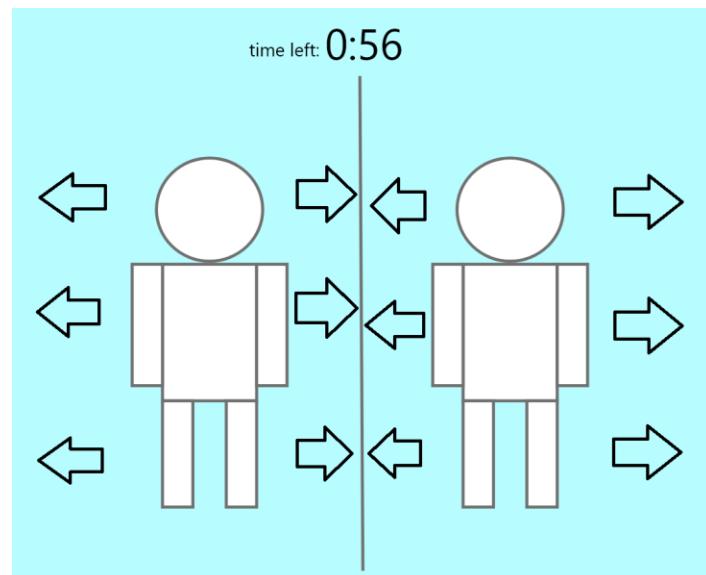
The player is informed about amount of people that have passed through the level at the top left of the screen. The game timer is at the top of the screen as well, either center or right.

The game ends when the time is up or the goal is reached. If players don't fully complete the goal they could still end up gaining points based on how many characters passed through the level. If they do complete the goal they get full points.

Clothing puzzle



Player gets to see what people of the time usual wore, typical style of clothing. Then the player sees how the neighbour ruined it and gets to the play state.



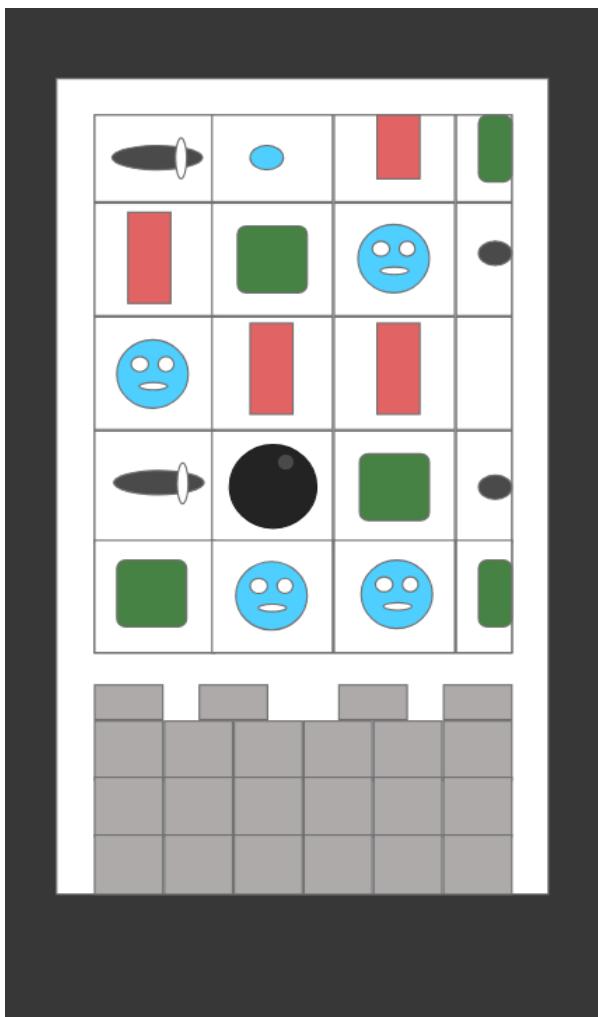
Clothing puzzle concept.



Clothing puzzle in-game screen.

A short “puzzle” game where the player gets familiar with the clothing of that time. The artists can choose certain looks from certain time periods, like 70s, 80s or medieval for example. To make it interesting there should be many styles to choose from. Even if the player doesn’t get everything correctly, they could get points based on how many clothes they did pick correctly.

Bomb puzzle



The Bishop of Münster was and is often called Bommen Berend due to his eagerness to use cannons with bombs. His main tactic was to bomb places until people would surrender.

Possible lay-out for the bomb game

“Bejewelled” style game where the player must prevent the bombs from hitting the wall by sliding the tiles correctly. The other items are typical imagery from that time period, like horses and family weapons and such. If you let too many bombs hit the wall, the city will be pillaged and it will all be your fault. I guess that might be a little much for a 10 y/o to bear, but they’ll get over it.

How it'd control:

The player has a grid in front of them with different kinds of tiles. The player can move the tiles by dragging them by their finger. If the player lines up three or more they “break” those tiles, causing every tile above that to fall down. This rewards the player with points, but runs the risk of making the bomb hit the wall. When certain tiles break next to the bomb, they remove the bomb from the map.

The game is completed when the player has achieved enough points or when too many bombs hit the wall.

Endless Runner to Groningen

The player has to move up and down to evade trees, lakes, enemy soldiers, fires and such to get to Groningen safely. They do so by swiping which way they want to go. It would be a three-lane endless runner. Potentially easier played from top down (so vertical) than from left to right (horizontal). The player would have to survive for a certain amount of time to beat the game. The player would have 3 lives, if they have no more lives left, they would fail the minigame and have to redo it.

The Right Way

The player has to turn and twist connections to form a path to the end destination. In many hidden object games this is done with pipes that need to connect, however, in our case it would be more suitable to do so with paths on a map. A bit as if the player is masterminding the best tactic.

Get My Stuff



A hidden object game just after the introduction video, so the player scavenges the ground to see if any of his stuff dropped on the floor before leaving. They could have to get their backpack, pen, diary, find the schematics of the time machine, a mirror and some trivial things? (basically, find some fluff and the things of the interface) No maximum time, but a score based upon the time and amount of clicks taken. Hint button present, which recharges every 20/30 seconds.

Close the Gate

A game in which you drag and drop weights to get the perfect amount of balance to get the door up without putting too much weight on the chains. The player would tap the item and then the location to get it there, or tap-drag the item to the right location. It's about the logic of the maths behind it.

Alternatively, it could be that the gate gets closed by cogwheels but someone has sabotaged it, so the player needs to put the right cogwheels in the right position for the mechanism to work again. This would have the same tap-mechanics.

Spelling puzzle

What if the player gets to read a letter and the amount of errors in there give off a certain message, as a spy letter.

Dear



So then there would be a main piece of text and the amount of errors decide which word needs to be in place. Each block shown here needs to be checked and each block's answer is worth one word in the final text:

Monday the troops will come from [A] at [B]. They will be lead by [C]. Their main plan is [D]. You can stop them by doing [E].

- A -> place
- B -> time of day
- C -> person
- D -> plan of attack
- E -> defensive response

So for example with A. Check how many spelling mistakes a seems to have, then select the answer based upon the amount of spelling mistakes.

- 1 mistake: Hondsrug
- 2 mistakes: Reitdiep
- 3 mistakes: Hereweg
- 4 mistakes: the East
- 5 mistakes: Haren

E. Style Guide

Overall style & inspiration

The overall look of Morgan Reist Door De Tijd is inspired by games such as Spy Fox, Putt-Putt, Pyjama Sam, Paper Mario & other children media.

The style will be “simple”, although further specifications for each aspect can be found in their dedicated sections. The game will be in 2D, with a parallax effect to add the illusion of depth to the background.

The setting of the game is both historical and fantasy: most of the game is set in Groningen in 1672, but in an alternate fantasy reality where everyone is an animal.

For further historical details about the setting, a research document has been set up to contain the information necessary.

Style

Characters & environment are seen in a frontal view. The user sees the scene from the point of view of the main character, therefore the main character is not visible. The main character is visible in dialogues and bears the customizations the player applies.

Environments

To keep things simple and readable on mobile devices, we are going for an artstyle with minimal detailing. Characters, items and background will consist mostly of line-art + flat color + 1 layer of cell shading. We will aim to keep the point-sizes of the line-art consistent throughout our project.



Always make it clear where you can and cannot go, for this there will be a clearly defined walkable path:



The target platform for this game consists of mobile devices such as phones and tablets, with resolution 1280x720 (2560x1440).

The main light source in open areas comes from the top right, therefore the shadows fall on the bottom left. This applies at all times save exceptions (for example, for dramatic reasons). The colours used will be generally browns, reds, yellows and contrasting colours. Colours have been chosen both inspired from paintings, reenactments from Bommen Berend, and due to their warmth.

Colours used will be chosen taking into account readability of the interface and scenes to all viewers, including colour blind people. Following the guidelines found during research:

1. Use both colours and symbols
2. Minimalistic design
3. Patterns and textures to show contrast (when applicable)
4. Contrast with colours and hues
5. Avoid bad colour combos (red/green, green/brown, blue/purple, green/blue, light green/yellow, blue/gray, green/gray, green/black)

Character design

Lighting and shading for every character remains consistent with the background (light: top-right, shadow: bottom-left) or generic enough to be able to fit with most situations.

Main Character

Have a standing sprite in the scene and a dialogue sprite for dialogues. The MC can move left, right, up and down but the sprite only shows left and right movement. The sprite for the dialogues appears to be facing right and is slightly bigger than the walking sprite. The MC is customizable.



Example of available options for character customization

Side Characters

Like the main character, the NPCs have a standing sprite in the scene and a dialogue sprite for dialogues, that looks to the left during dialogues. NPCs generally stand still. This will not apply to Jacob, who will guide the MC on occasions. Characters may in the future be able to change expression during the dialogue (show surprise, shock, anger,...).

Items, as they appear in the inventory

The style remains consistent with the characters and settings. The same light and shading applies. The size used so far was 200x200px, which takes into account both the size of the item itself and a transparent portion left for the background.

Background

Initial scene

An animation of some sort for the introduction to the game to explain the premise of the story. The animation is short so as to convey the premise to the player without boring them with the details, as the tutorial dialogue delves further into it. The introduction is presented as a series of photos of the events, as photos imply memories and hence the past.

Other backgrounds needed will be: a map (interactive via mission points), described further ahead, and the settings of each scenes. Each setting is longer than the camera view and therefore the player will have to swipe left and right to explore the scenes. A more specific description will be added when the story is more defined.

UI

Scene view



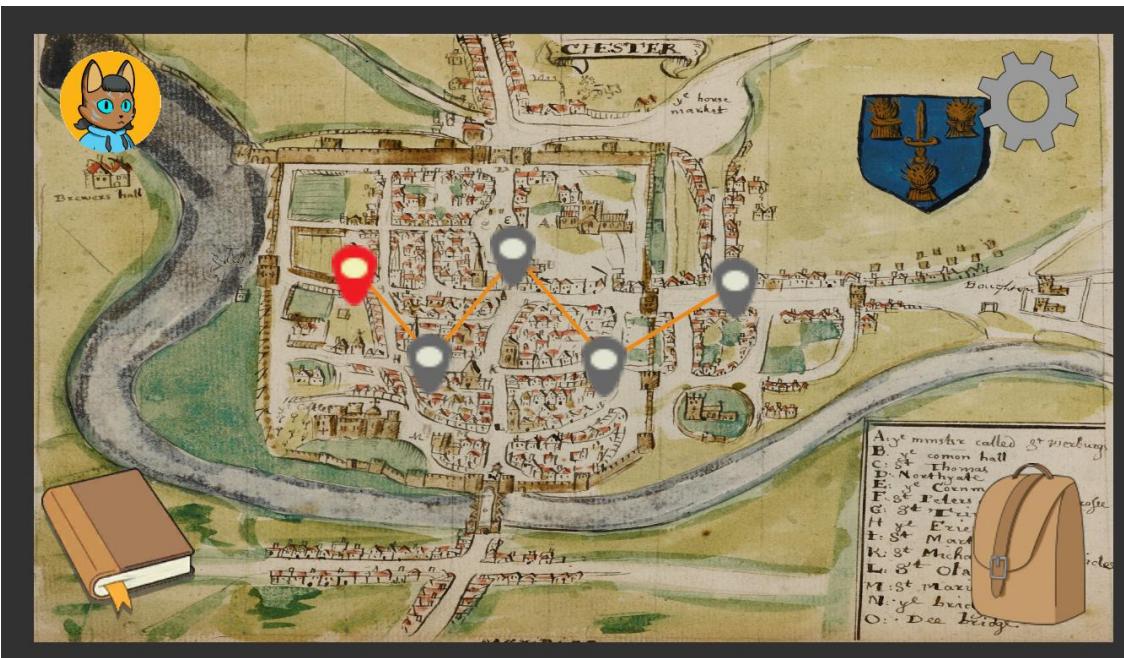
Initial look of the prototype



An example of a background from the tutorial with a character reference for size.



The current implementation.



The map view with a placeholder map.



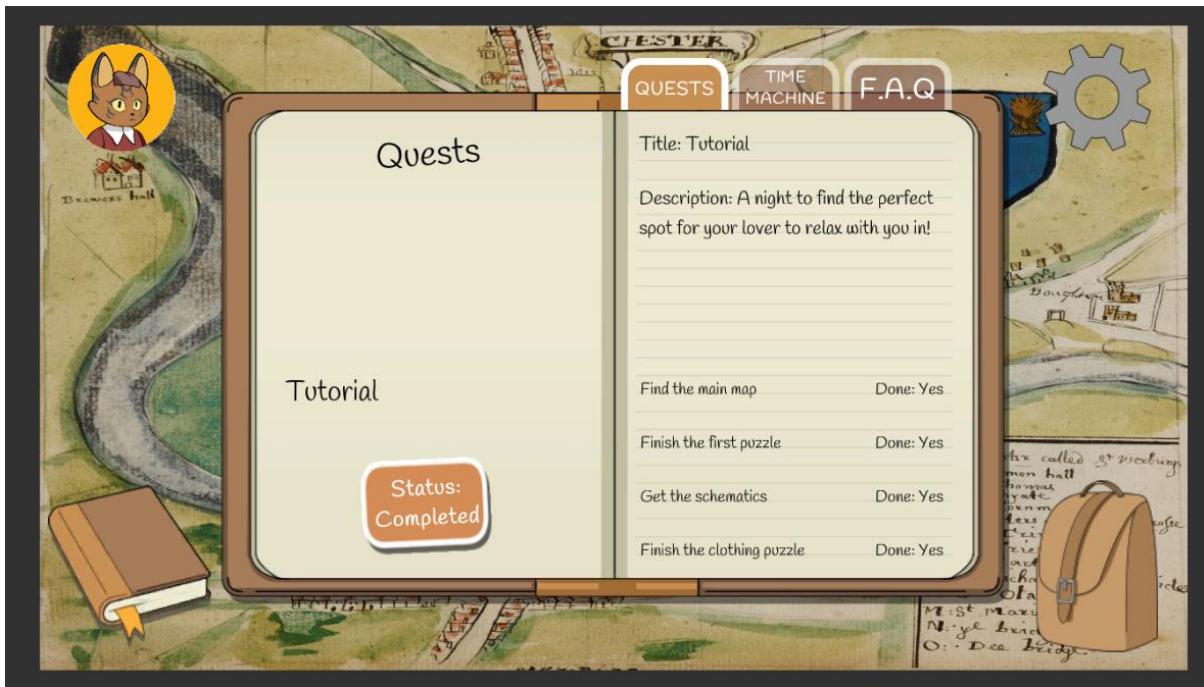
The final map.



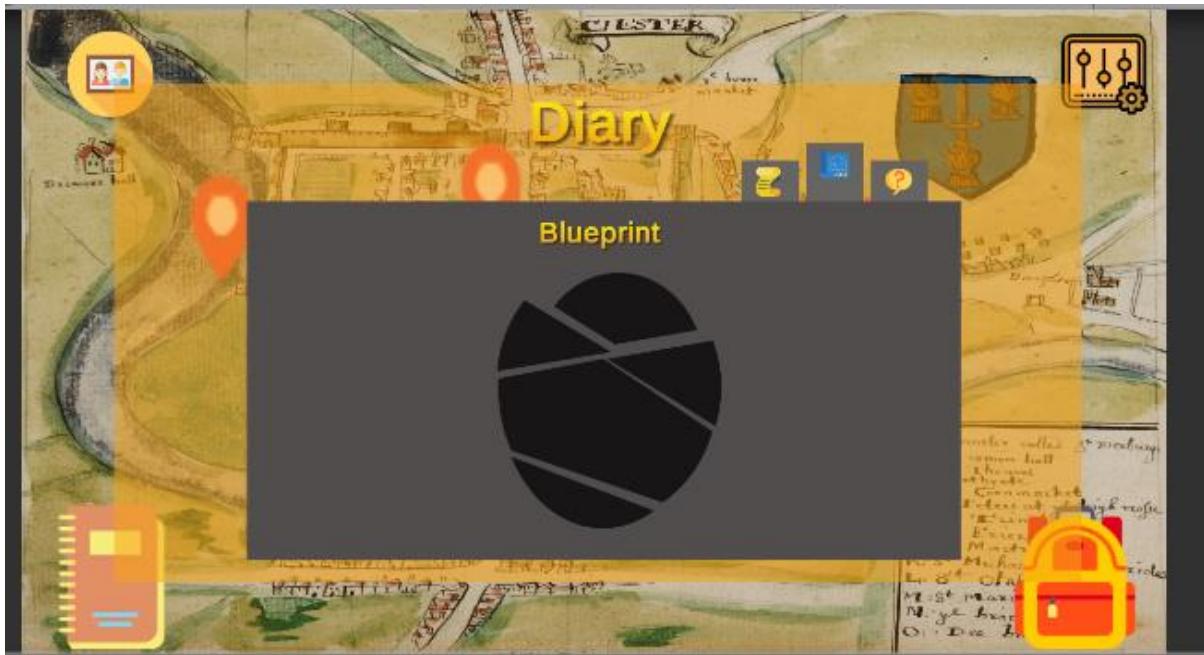
Diary set up on-screen prototype.

A detailed view of the "Diary" interface set-up. On the left, there's a panel titled "Quest" with three orange buttons labeled "TYPE", "DF", and "QUEST". On the right, there's a main panel divided into sections. At the top are three buttons: "OBJECTIVES" (orange), "TIME MACHINE" (brown), and "F.A.Q." (purple). Below these are sections for "Title" (with a text input field containing "[description]") and "Objectives" (with a list: "- A", "- B", "- C"). In the bottom right corner of the main panel is a button with a checkmark and the text "Leave Quest".

Diary interface set-up.



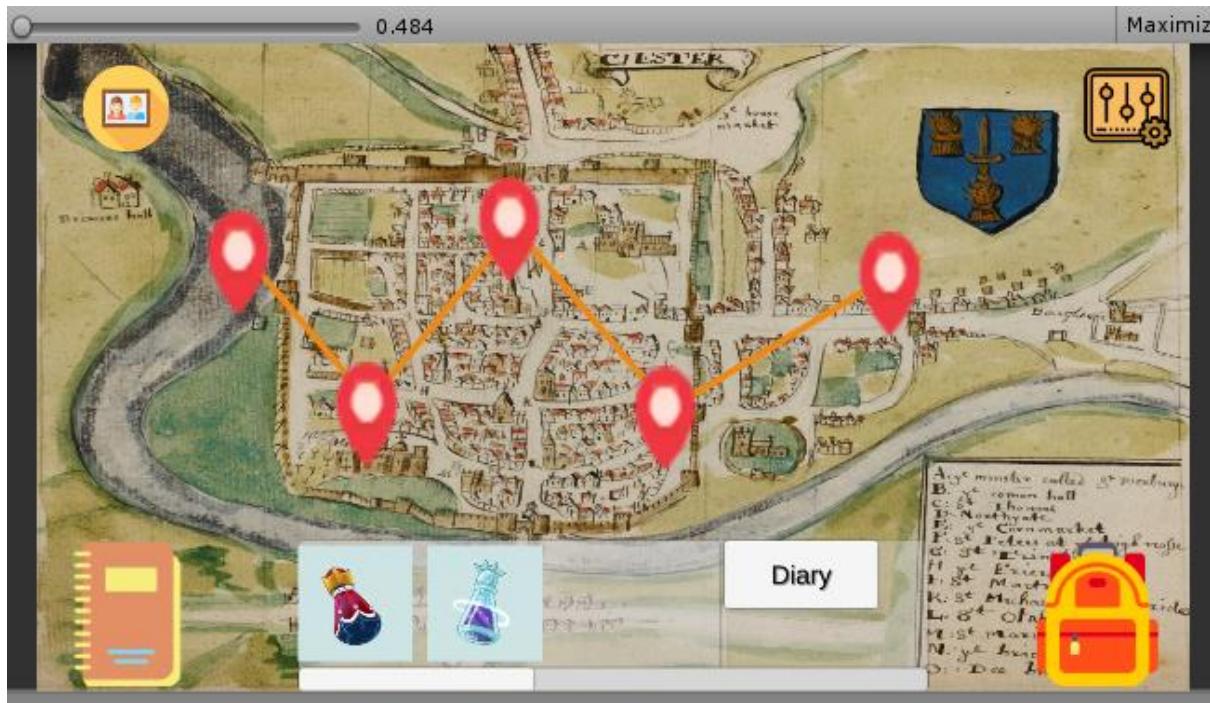
Quest completed panel.



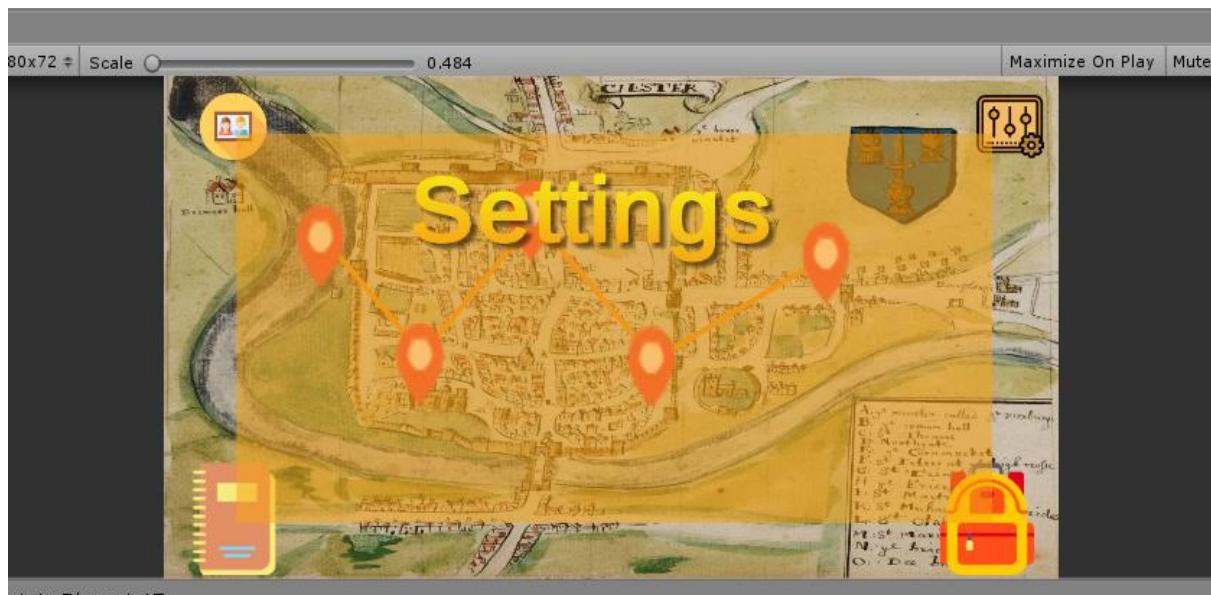
Blueprint prototype.



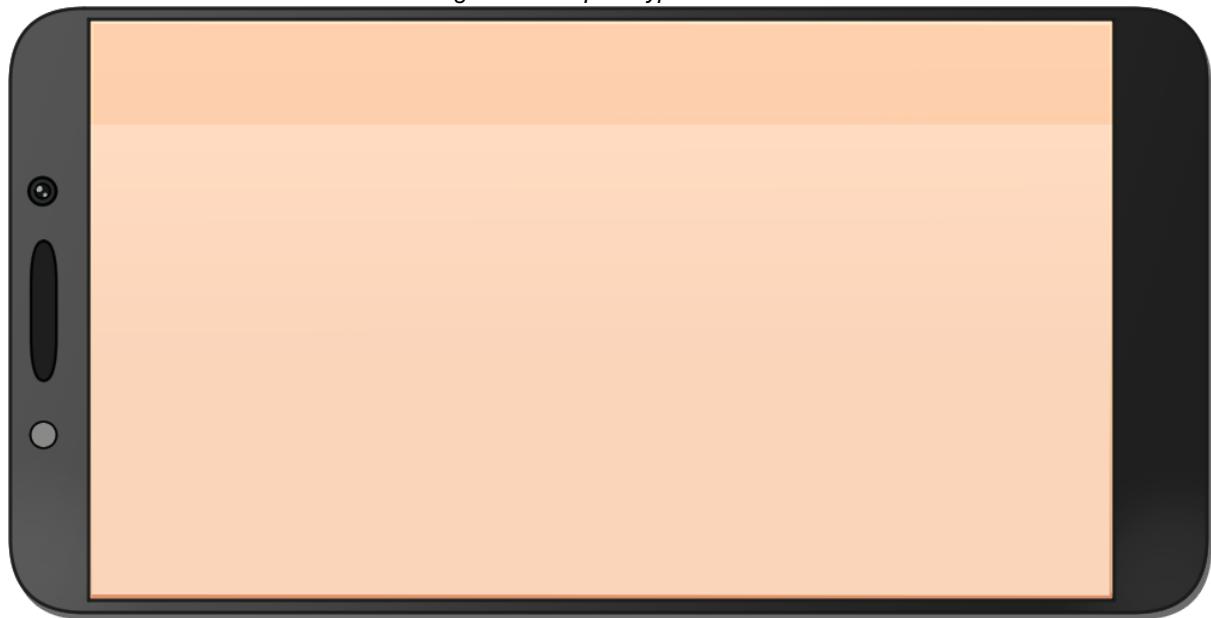
Final blueprint interface.



Inventory prototype



Settings interface prototype.



Settings interface base.



Initial prototype of the customization page



The prototype of the customization page.



The customization page.

Puzzles

Puzzle interfaces may vary according to type of mini game or puzzle.

Panels

Panels will consist out of 9 sliced UI-background elements. Placed on top of the background image, text and icons can be placed.

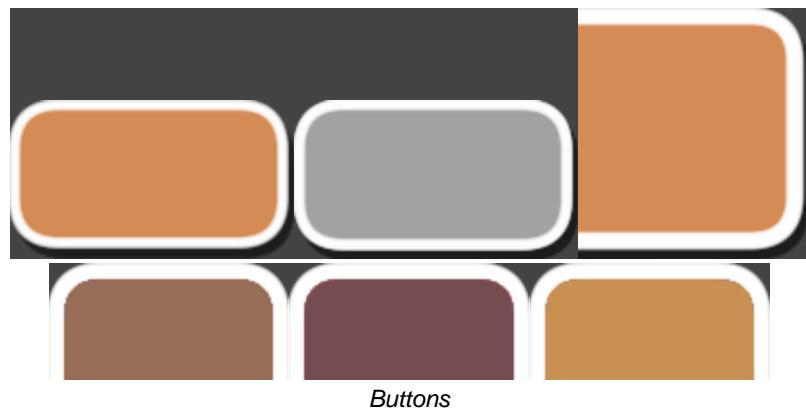
Settings panel background:



Buttons

Buttons should be reusable. This means we will apply the 9 slice technique.





The decline and confirm buttons and their respective icons.



Icons

Diary icon:



Settings icon:



Bag icon:

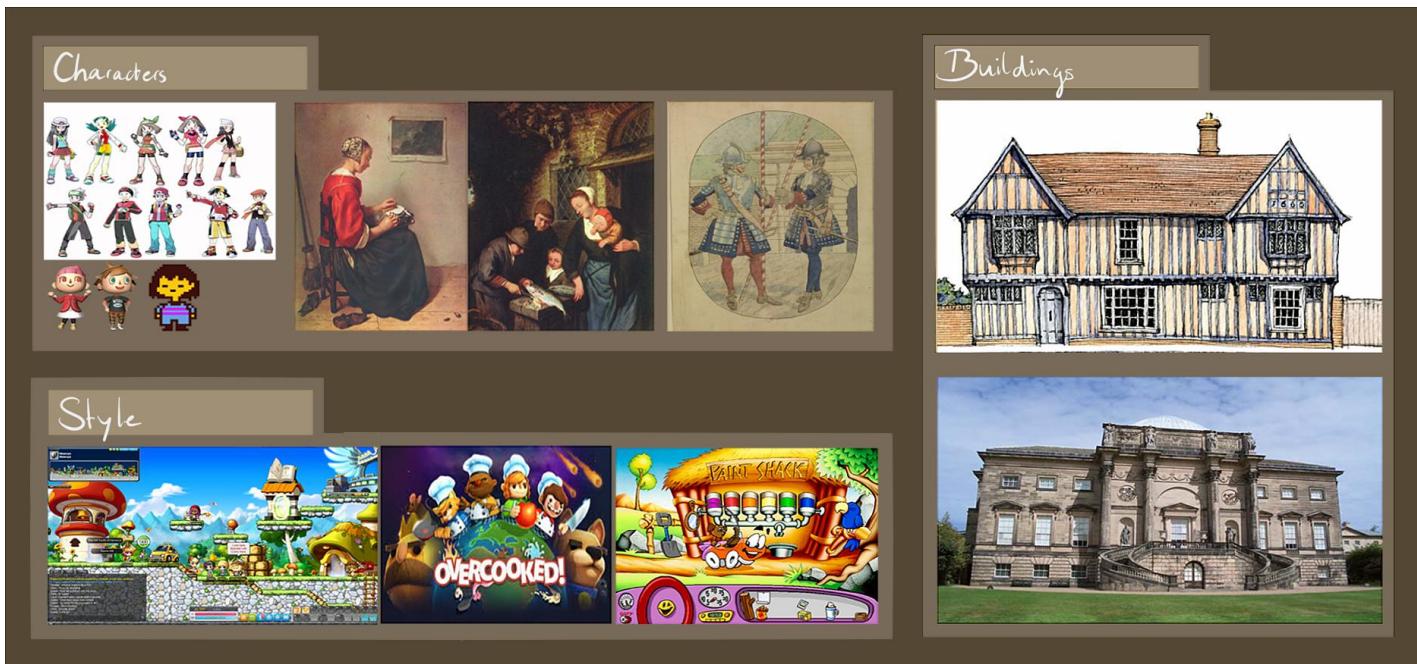


Font

<https://fonts.google.com/specimen/Handlee>

Some interface elements might later be replaced with custom fonts (for example, for titles of interfaces such as the diary quest page, it would look cuter and more relatable if the handwriting looked like it was made of pencils or crayons.

F. Moodboard



G. Level Planning

Level	Level 1	Level 2	Level 3	Boss Level
Historical events				
	Flooding West, North and East	Bombings	Bombings	Groote Griet
	Breaking down the south for resources		Small victories	Berend overloads his own cannons
				Bommen Berend leaves 27/28th Oct
				Celebration with fair, horses and firework(?) (1673)
Game events				
	introduction into history (attack from 4 sides etc) (school visit)	Stop Miro's Tricks	Sabotage Miro's Plan	Showdown Miro
	watch students take up the defence	rescue the refugees		
				Travel back to own time
Scenes				
	City scene #1 (street Uncle)	City scene #3		Home scene (reuse original starting scene?)
	Flooding scene	Martini Tower Scene		Bombardment Scene
	City scene #2			
Games / puzzles				
	Pipes puzzle for flooding	bomb bejewelled puzzle	Letter Puzzle	ready cannon
	Letter Puzzle	another hidden object puzzle		
		Letter Puzzle		
NPCs				
	Jacob	Jacob	Jacob	Jacob
	Bommen Berend	Carl von Rabenhaupt	Carl von Rabenhaupt	Miro
	Jacob's Uncle		Bommen Berend	Carl von Rabenhaupt

				Bommen Berend
	Captain Bernard Johan Prott			
Game Items				
	Component Machine	Component Machine	Component Machine	Final component Machine
Subjects		To Keep In Mind		Event Suggestions
maths		Via Reitdiep troops, food and other supplies came into the city		School visit
history		Berend had to travel from Hondsrug to the South of Groningen, via Hereweg		Stop fires
geography/topography		The bombing was positioned at Helpman		Help wounded
language (maybe add some Gronings)		Thousands of troops were positioned between Haren and Kempkersberg, which provided a good view of Groningen		Go to church
music		The story of Groote Griet takes place in a Church Tower in Haren. This would mark the end of the siege		Meet Carl
nature- something with plants or animals		Coevorden was taken, but their leader was not a skilled warrior; it was just the mayor's son.		Encounter Berend
topography: explain how we get attacked from 4 sides (like which countries)		Bourtange had the famous captain Bernard Johan Prott.		Tactic discussion Carl
technology				Help the smith produce weapons
science				Help make food

H. Planning 4th Period

Period 4	preliminary planning										
week	Between week	1	vacation	2	3	4	5	6	7	8	
	refine tutorial based on feedback	new sprites	new animations	test level 1	new sprites	new animations	test final level	refine & complete game	reserve week		
	define level 1	environments	digital implementation	define final level	environments	digital implementation	refine final level	improve final level based upon feedback			
		mechanics	puzzles/minigames	refine level 1	mechanics	puzzles/minigames	put everything together				
				putting everything together		digital implementation					
					define minigames						
						improve level 1 based upon feedback					
											Gate 4 - 18th of June