Project X Turtle Vs Rabbit

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Project Description

The project is a Hangman-like game designed during the orientation phase of Fontys ICT. Originally designed by me for an assignment aimed at making the classic Hangman game more engaging for children, it features a race between a turtle and rabbit to the finish line, reminiscent of beloved storybooks.

I chose this topic because it presents an ideal opportunity to apply the knowledge acquired in previous lessons and transform my design concept into a fully functional game. I aim to create a fun and interactive game while showing my growth on multiple learning outcomes.

The game maintains the classic Hangman structure with an added twist and pixelated design. Players will guess letters to form a word, influencing the progress of two racing characters. Drawing inspiration from storybook races where the turtle triumphs, players assume the role of the turtle and strive to win the race. With each correct guess, the turtle advances closer to the finish line. However, incorrect guesses allow the rabbit to gain ground. Victory is achieved by successfully guessing the word, enabling the turtle to cross the finish line first, while defeat occurs if the rabbit reaches the finish line first due to too many incorrect guesses.

In the following sections, I will explore my main research question: How does incorporating a racing element into the traditional Hangman game affect player engagement, and what is the optimal structure for this new game? To answer this question, I will conduct web research focusing on design pattern analysis and I will do user tests on the game. After that, my project schedule will be displayed, outlining each step required to complete the game on time.

Research Question

How does incorporating a racing element into the traditional Hangman game affect player engagement, and what is the optimal structure for this new game?

To answer this research question, I will employ a combination of design pattern analysis and user testing.

Design Pattern Analysis:

By identifying relevant design patterns, I will draw insights from existing game design frameworks. Through web research, I will explore best practices in game design, particularly focusing on the integration of dynamic elements and pixelated design. By doing this, I aim to achieve a better professional standard through detailed documentation of my work and research. Additionally, by planning and organizing my work effectively, I will also develop my personal leadership skills.

User Testing:

I will conduct user testing to gather feedback on the design, assessing elements such as usability, enjoyment, and the integration of the turtle and rabbit race concept. This feedback will be instrumental in refining the game mechanics and ensuring an engaging and enjoyable experience for players. By conducting user tests, I will enhance my skills in iterative design by improving my design based on user feedback, and in interactive media products by thoroughly testing my game. When coding and testing, I will also work on my development and version control skills by writing and documenting my code and progress.

Planning

I'll start by researching my initial design for any improvements in style and placement. Then, I'll conduct user testing to gather feedback on usability and engagement. Using insights from testing, I'll iterate on the design to align with user preferences. After that, I'll translate the refined design into code and implement game game mechanics like word guessing and character movement. Finally, I'll do a user test on the functional game and try to fix any issues. Throughout this process I will need to ask for feedback from the teacher and document every step I make.

Project X Schedule Overview

| Day	Task
02-06	Research on design elements and placement
03-06	Improving design from orientation phase
04-06	User Testing of game prototype
05-06	iteration design based on user test
06/09-06	Implementing prototype/design in code
09-06	Teacher Feedback and implementation of feedback
10/12-06	Developing Game Mechanics such as word guessing, character movement, win/lose conditions.
13-06	Teacher Feedback and implementation of feedback
14-06	user testing functional game
15-06	iterating based on user test
16-06	Final testing for bugs and other issues and adjusting accordingly
17-06	Final Review

Research/User testing

After the planning phase, I did some user testing on my initial design. This revealed several significant flaws that needed to be addressed.

One major issue was the player's guide page, which contained too much text. To improve user experience, I decided to split the information. This approach is commonly used. A game description is displayed initially, and by clicking on the arrow button, players can view the instructions on how to play the game.
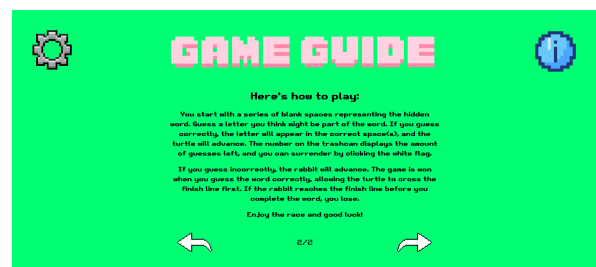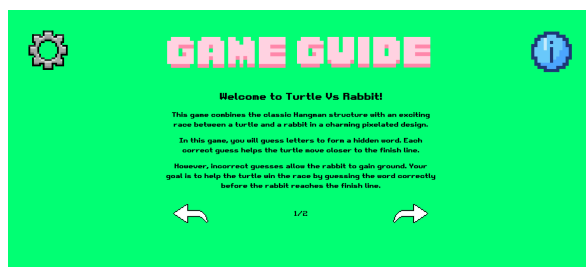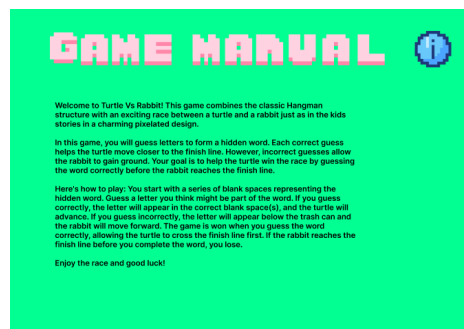

Another element that required fixing was the background. User testing indicated that the background was too busy and had a tropical jungle theme, which is not suitable since neither turtles nor rabbits live in such an environment.

Additionally, the number of guess attempts left is displayed on a trashcan icon which is 7 since this is the standard in hangman as well, and there is an option to give up when clicking the white flag.
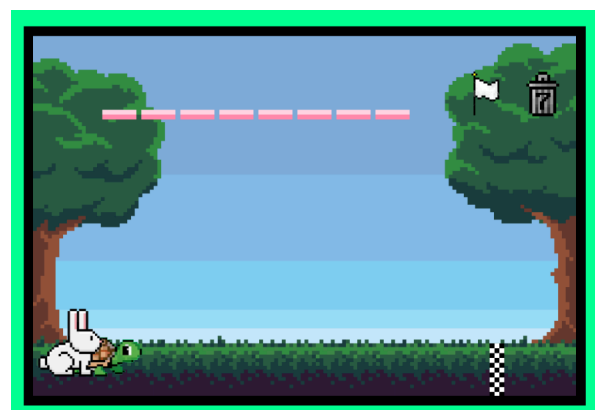
A great idea that was brought to me by one of the users who first tested my game was to enhance it by making the turtle and rabbit characters talk, adding a fun element to the game. I also included a guide page and settings button so players can immediately change settings or check the rules without returning to the home screen.
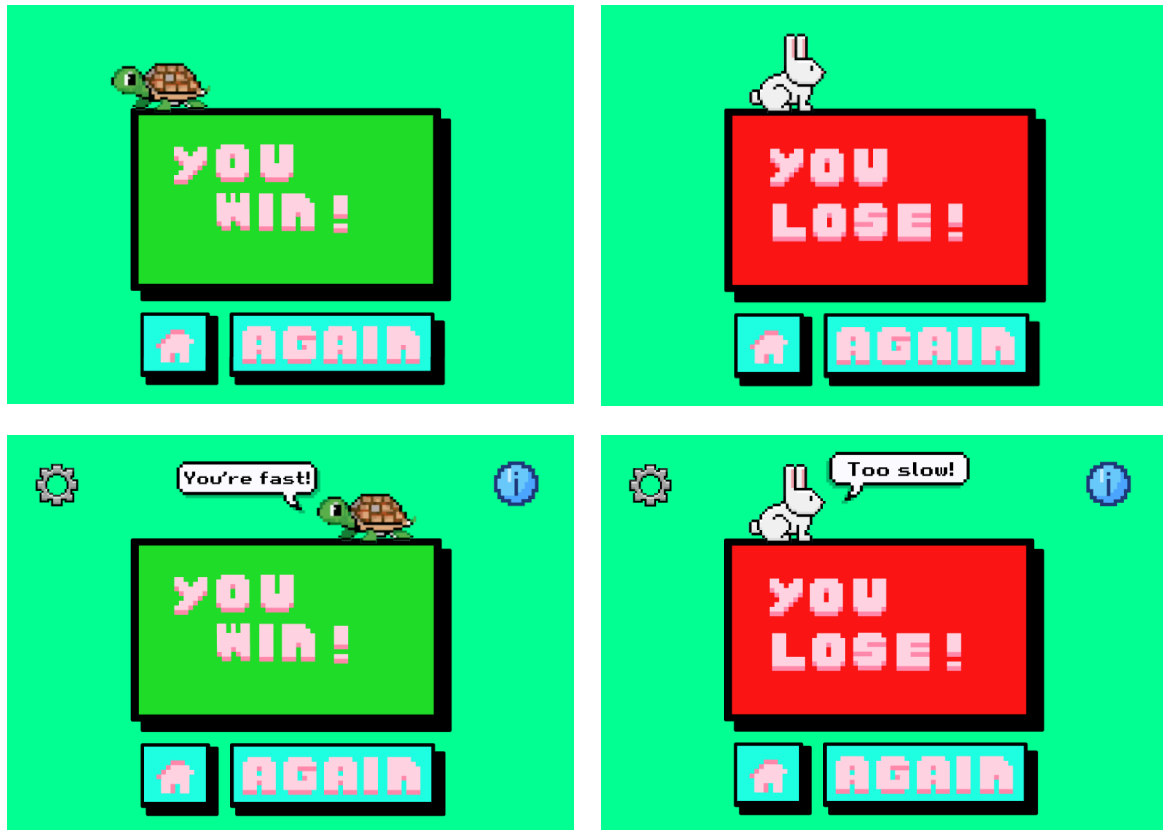
All of these changes being the background, split guide page, talking animals, displaying the attempts left, a surrender button, and extra buttons on the loser and winner pages led to my second iteration and an improved design, after which I began bringing it to life in code.

Developing the Game

The main design elements, including the turtle, rabbit, info, and settings images, were imported from my prototype in Figma. However, elements such as the title container and the interactive play button were created using CSS.

Even after user testing several changes were made to the game when coding based on my own testing and teacher feedback allowing for a third iteration, particularly on the main game page.
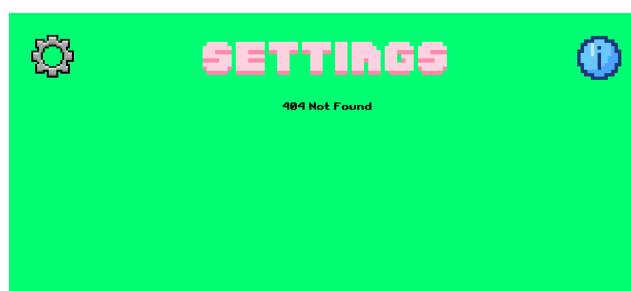
Initially, I planned to use the keyboard for letter input and display incorrect guesses below the trash can. However, I opted for a clickable letter panel instead, allowing mouse interaction. While correct letters turn green and appear in their correct position on the word display.

Additionally, clicking the white flag first displays the text "The word was:" and reveals the correct word before redirecting to the losing page, ensuring players see the word they missed.

Sound effects were also added to buttons on the game, welcome, settings, and info pages.
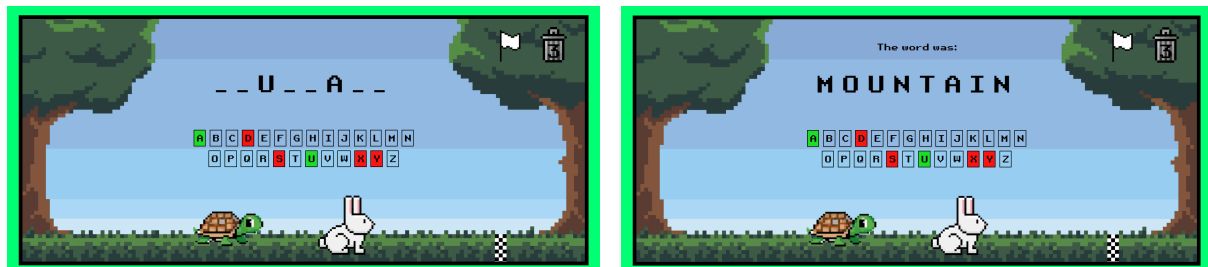
After all, the only thing that wasn't completed to my satisfaction is the settings page, as there are few settings for the current game features. If more features, such as choosing your own words or adding a time limit, were implemented, these settings would be necessary. But currently the only setting that could be of use is turning the sound off and on which would be a good addition but I didn't think of this as a priority and wasn't able to do it in the given timeframe.

The final outcome of the game looks like this:

https://i536107.hera.fontysict.net/game/index.html