TRASHPOINTS

D1. Scope document

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Overview of Concept

TrashPoints follows an ambient theme and consists of a point and click game where the player must find hidden objects and recycle them in the correct bins, with the goal of teaching the players how to recycle and encourage them to do so.

The game will be developed using Unity, with the target platform being PC (Windows 10).

Objectives

This game presents the player with different levels in which they must find all the trash polluting the beautiful scenery shown. After doing so, they must also separate the trash into the correct recycling bins. The score will be determined based on the time the player takes to find the objects, how they separated it through the bins, and how many wrong clicks they have (to keep the player from just clicking around randomly).

Description

TrashPoints fits in the "find the hidden objects" genre with an ambient theme. The target audience for this game would be a younger audience – children from 6 to 12 years old – as it is a very simple game and easy to play.

The game contains several levels, where the goal is to find trash that is ruining the different scenery presented. As such, this is a point and click game, because the player needs to find all the trash before moving on to the second goal which consists of separating the trash into the correct bins, granting them extra points for each correct decision, and penalizing them for wrong choices. The general style of the game is fairly cartoonish for the most part, with the recycling bins having a simpler design while the scenarios themselves are more realistic. There are no actual characters in the game.

Key Features

While the concept of hidden objects that must be found is something that is already present on several games, the key feature of this game would be the part where the player has to separate the trash into the correct recycling bins, and in doing so, learning the recycling practices. This would be used to teach a younger audience to recycle and motivate them to do so.

Technical Specification

The software to use for the development of the game will consist in the following:

- Figma;
- Adobe Illustrator CC 2021;
- Unity 2020.3.22f1;
- Microsoft Visual Studio 2019.

The recommended hardware specifications for the development of the game are:

- A 64-bit processor and operating system (Windows 10);
- Processor: Intel(R) Core(TM) i7-10510U or AMD CPU equivalent or better;
- Memory: 16 GB RAM;
- Graphics: Nvidia GTX 1650 or AMD Radeon RX 580 or better.

The recommended hardware specifications for the players of the game are:

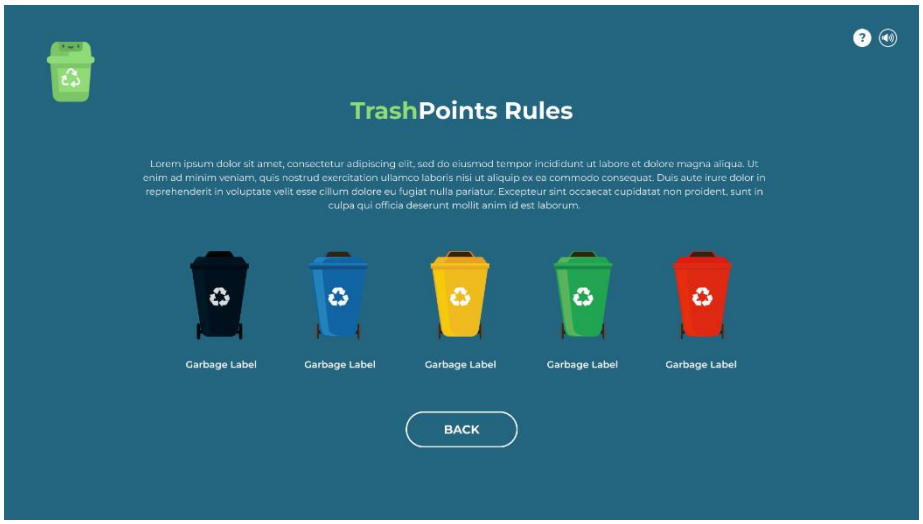
- Requires a 64-bit processor and operating system (Windows 10);
- Processor: Ryzen 5 2600 6-Core CPU or Intel CPU equivalent or better;
- Memory: 12 GB RAM;
- Graphics: Nvidia GTX 1050 or AMD Radeon RX 560 or better.

The target platform will be PC (Windows 10). There isn't multiplayer support for this version of the game.

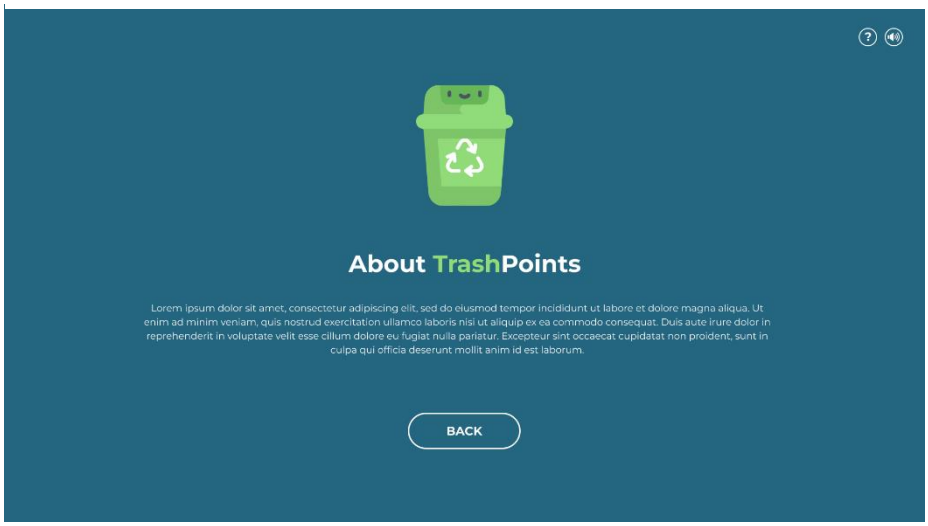
Concept art

Below is presented the UI of the game:

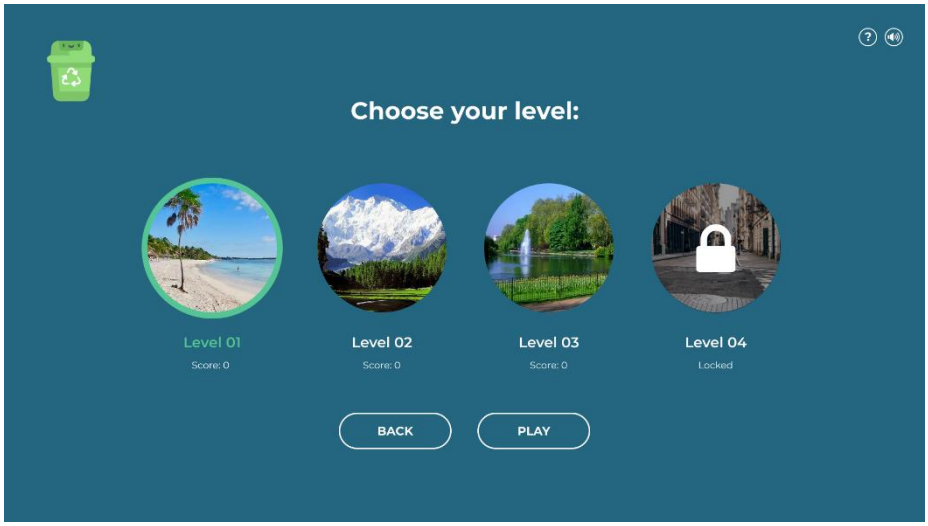
1. Main Menu



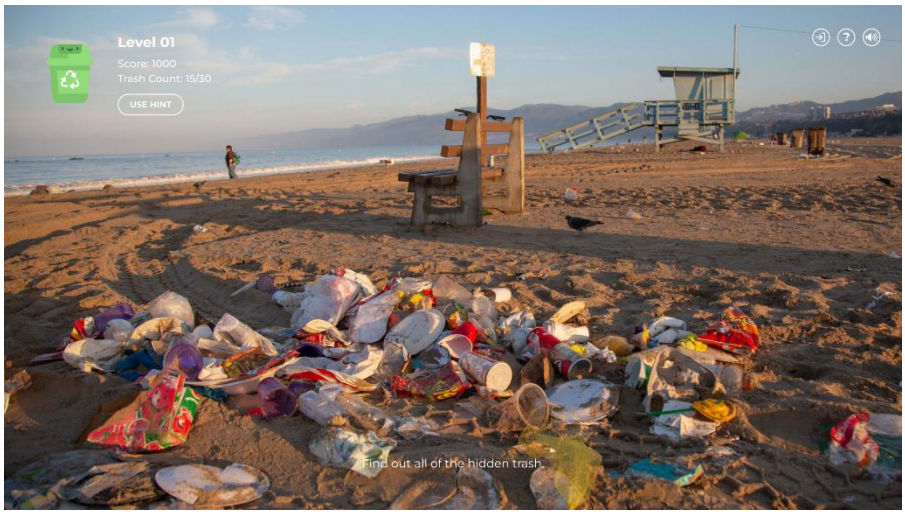
2. Rules



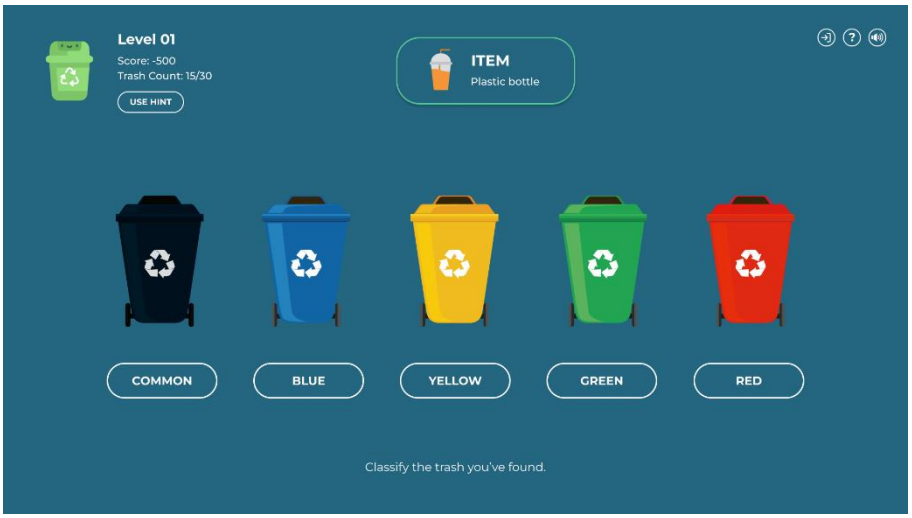
3. About



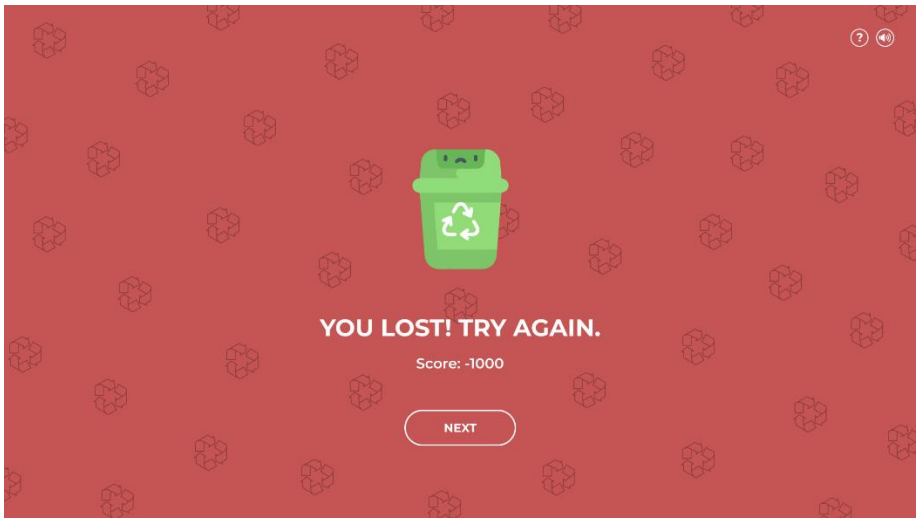
4. Levels Menu



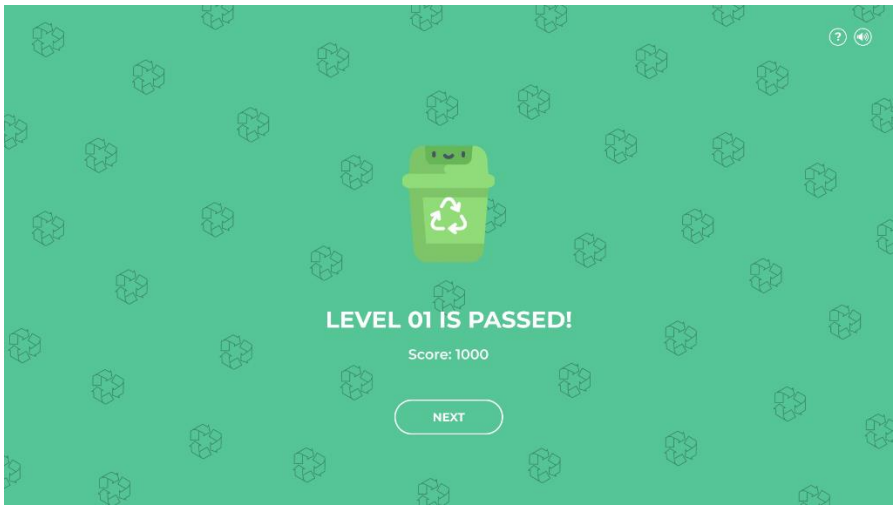
5. Chosen Level (Part I: Find the trash)



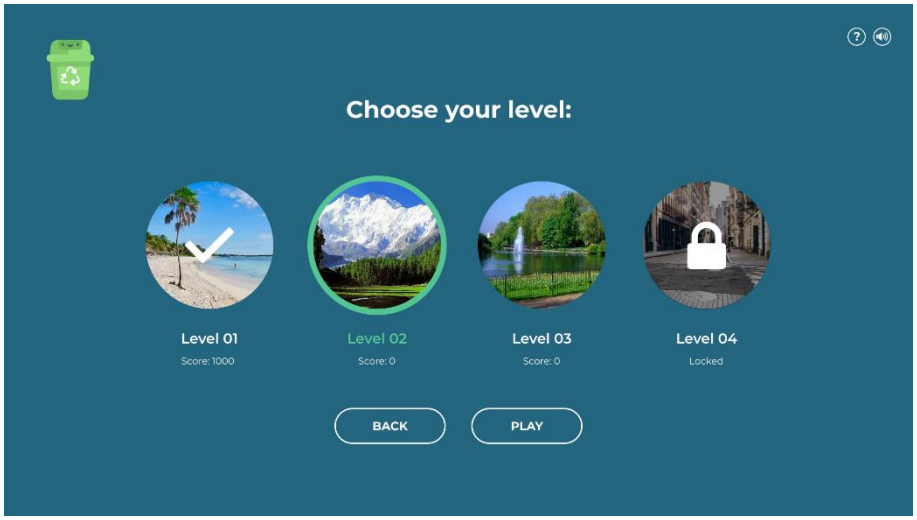
6. Chosen Level (Part II: Classify the trash)



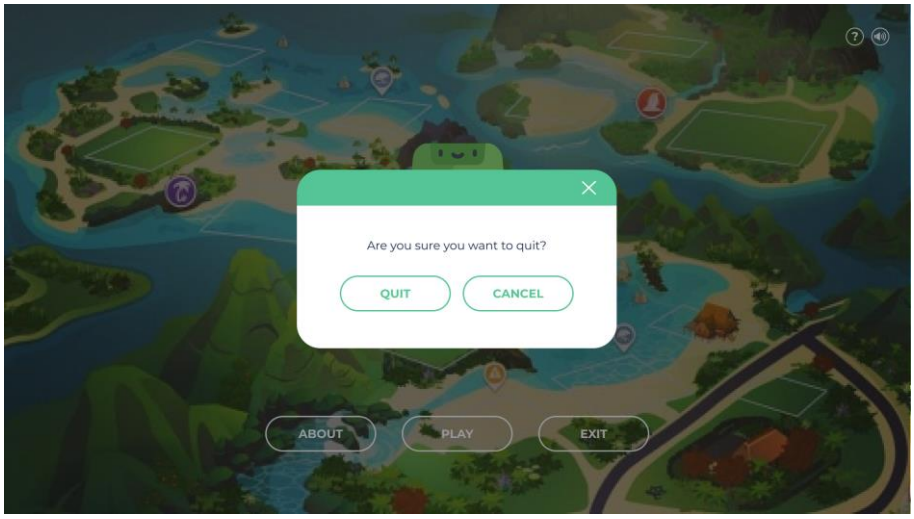
7. You Lost Screen



8. You Win Screen

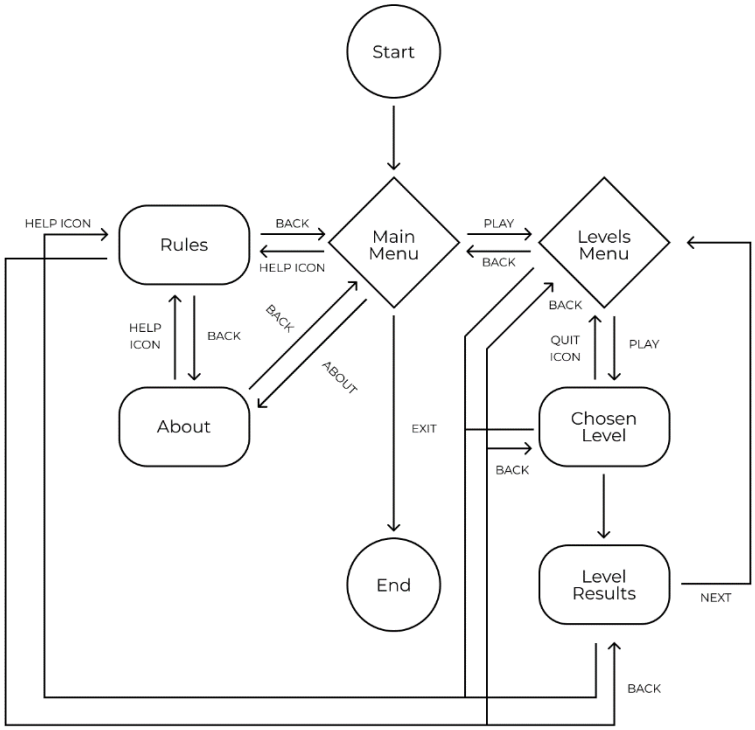


9. Levels Menu after playing one level (Level 01)



10. Quit Popup (Example of a Popup)

The Flowchart of the game is presented below:



11. TrashPoints' Flowchart

The game's controls are simply the mouse/touchpad.

Schedule and Deliverables

10/05/2022 D1.1. Scope document (version 1.0)

24/05/2022 D2.1. Game Design Document (version 0.x)

D2.2. First Prototype

20/06/2022 D2.1. Game Design Document (version 1.0)

D3.1. Final prototype

Functional and Non-functional requirements

Functional Requirements:

- About
    - The player must be able to access the about menu from the main menu.
    - The player must be able to back out to the main menu.
- Rules
    - The player must be able to access the rules information from the main menu.
    - The player must be able to view the rules at any time by using the help button.
    - The player must be able to back out of the menu, going back to whichever menu they were in before.
- Levels
    - This menu must be accessible using the play button in the main menu.
    - The maximum score for each of the levels must be visible.
    - The player must be able to select the level they wish to play, as long as all conditions are met (level is unlocked).
    - The player must be able to see which levels have been completed.
    - The player must be able to back out to the main menu.
- Playing a Level
    - The player must be able to click on a piece of trash to collect it for later recycling.
    - The game must deduct score from the player should they be clicking away at random.
    - A counter should inform the player of how much trash has been found and how much trash is in the scene.
    - Information about the current level and the score should be shown.
    - A hint button should be shown for the player to use should they need it.
    - After collecting all the trash in the level, the recycling phase of the level should be shown.
    - The current item being recycled should be shown.
    - The player must be able to separate the trash through the different bins by clicking on them, gaining score for correct choices, and losing score for wrong choices.
    - The level must be considered as passed should the score be positive.
    - The level must be considered as failed should the score be negative, requiring the player to try again.
    - The player must be able to back out of the level at any time.

- Game
    - The player must be able to leave the game.

Non-functional Requirements:

- The game is played on PC.
- It is recommended to have the recommended specifications to play the game.

References

Icons used in the game's UI were retrieved from https://www.flaticon.com/

Images used in the game's UI were retrieved from https://images.google.com/