

Unnamed Platformer for UTM CSCI 352

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Abstract

The project is a video game in the 2D platformer genre. The player is made to run through a level, and upon each successful completion, the level is changed to increase the difficulty. The intended target is people that play video games, primarily those that stream games as live reactions mesh well with high difficulties.

1. Introduction

This project is a video game in the genre of 2D platformer. The goal of the game is to reach the exit of the level that the player character is placed in. The level's layout will progressively get more complex with each clear, along with adding new hazards that increase the difficulty further. The penalty for failing a level is to be sent back to the beginning of said level, allowing the player to learn the level with every attempt.

The targeted audience for this project is people in the 18-34 age group who play video games on a regular basis. Specifically, those in the age group that livestream games. Due to the increasingly difficult challenge that the game provides, having live reactions of attempts to beat the game will provide content for the targeted audience.

1.1. Background

A 2D platformer is a game genre set on a 2D plane where the player controlled character must move and jump to avoid obstacles and reach the end.

We decided to make a platforming game because of our love for games in general and our shared interest in platformers. Because of this, we feel we can properly create one.

1.2. Impacts

This project is not meant to impact the world in some way. The point of a game is to provide entertainment, which will only impact a portion of the population if it were to gain traction within the community. At the current time, there is no plan for a meaningful story in the game, so the impact will be purely driven by the quality of the gameplay.

1.3. Challenges

The main challenges will most likely be coding the physics of the player character; developing new mechanics instead of being purely moving and jumping; keeping the game fun despite the difficulty.

2. Scope

This platforming game is considered done once three levels of the game are playable from start to finish with minimal bugs or exploits. The player should be able to get through these stages without too much unnecessary frustration with either the difficulty of these stages or the control of the player character. The player character should be fully implemented with all moves intact (moving, jumping) and all hazards (such as spikes) should fail the level upon contact with the player character. As a stretch goal, we want to include more levels with new hazards. An additional stretch goal is the addition of extra moves (i.e walljumping, sliding) the player character requires to progress in more difficult levels. An additional stretch goal is scaling the window and the game assets to fit more than one resolution.

2.1. Requirements

[Placeholder]

2.1.1. Functional.

- Placeholder

Use Case ID	Use Case Name	Primary Actor	Complexity	Priority
1	Case 1	Actor 1	Complexity 1	1
2	Case 2	Actor 2	Complexity 2	1

TABLE 1. SAMPLE USE CASE TABLE

2.1.2. Non-Functional.

- Placeholder

2.2. Use Cases

This subsection is arguably part of how you define your project scope (why it is in the Scope section...). In a traditional Waterfall approach, as part of your requirements gathering phase (what does the product actually *need* to do?), you will typically sit down with a user to develop use cases.

You should have a table listing all use cases discussed in the document, the ID is just the order it is listed in, the name should be indicative of what should happen, the primary actor is typically most important in an application where you may have different levels of users (think admin vs normal user), complexity is a best-guess on your part as to how hard it should be. A lower number in priority indicates that it needs to happen sooner rather than later. A sample table, or Use Case Index can be seen in Table 1.

Use Case Number: 1

Use Case Name: Add item to cart

Description: A shopper on our site has identified an item they wish to buy. They will click on a “Add to Cart” button. This will kick off a process to add one instance of the item to their cart.

You will then go on to (minimally) discuss a basic flow for the process:

- 1) User navigates to page listing desired item
- 2) User left-clicks on “Add to Cart” button.
- 3) User cart is updated to reflect the new item, this also updates the current total.

Termination Outcome: The user now has a single instance of the item in their cart.

You may need to also add in any alternative flows:

Alternative: Item already exists in the cart

- 1) User navigates to page listing desired item
- 2) User left-clicks on “Add to Cart” button.
- 3) User cart is updated to reflect the new item, showing that one more instance of the existing item has been added. This also updates the current total.

Termination Outcome: The user now has multiple instances of the item in their cart.

You will often also need to include pictures or diagrams. It is quite common to see use-case diagrams in such write-ups. To properly reference an image, you will need to use the `figure` environment and will need to reference it in your text (via the `ref` command) (see Figure 1) (see Figure 2) (see Figure 3)

After fully describing a use case, it is time to move on to the next use case:

Use Case Number: 2

Use Case Name: Checkout

Description: A shopper on our site has finished shopping. They will click on a “Checkout” button. This will kick off a process to calculate cart total, any taxes, shipping rates, and collect payment from the shopper.

You will then need to continue to flesh out all use cases you have identified for your project.

2.3. Interface Mockups

At first, this will largely be completely made up, as you get further along in your project, and closer to a final product, this will typically become simple screenshots of your running application.

In this subsection, you will be showing what the screen should look like as the user moves through various use cases (make sure to tie the interface mockups back to the specific use cases they illustrate).

3. Project Timeline

Go back to your notes and look up a typical project development life cycle for the Waterfall approach. How will you follow this life cycle over the remainder of this semester? This will usually involve a chart showing your proposed timeline, with specific milestones plotted out. Make sure you have deliverable dates from the course schedule listed, with a plan to meet them (NOTE: these are generally optimistic deadlines).

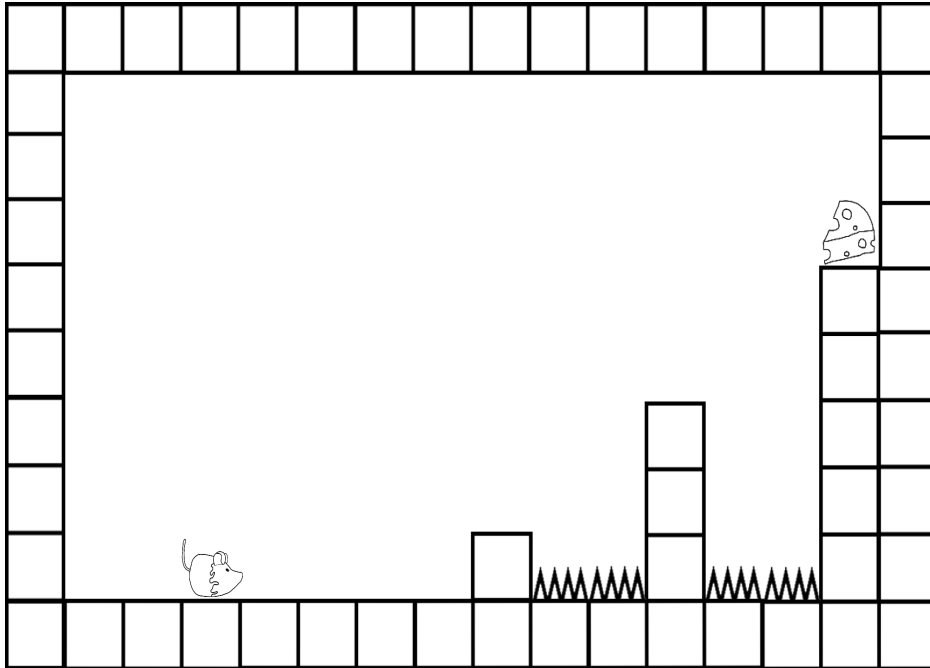


Figure 1. Mockup of a player loading into a level

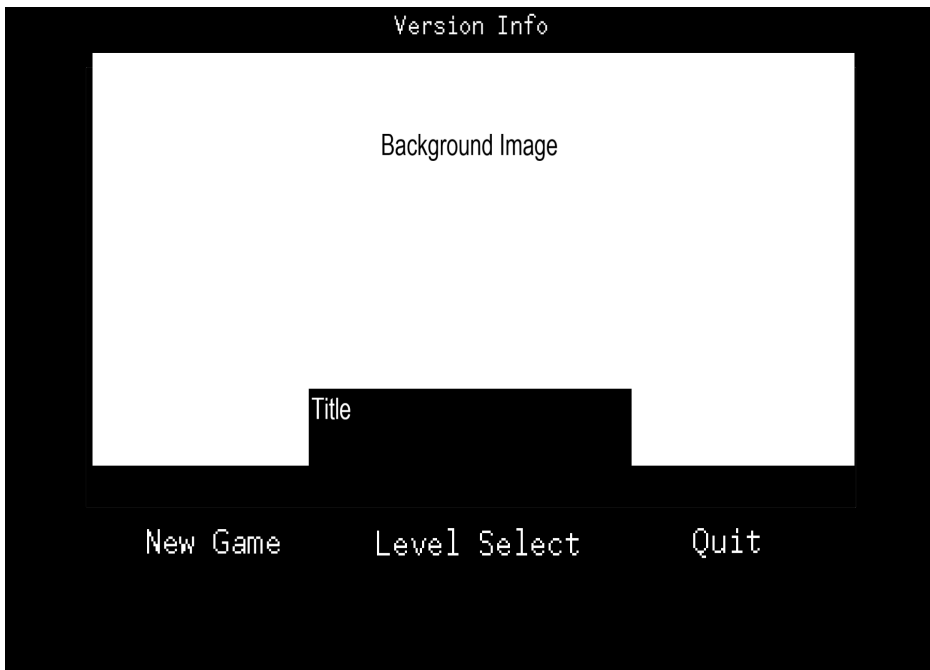


Figure 2. Mockup of the main menu screen

4. Project Structure

At first, this will be a little empty (it will need to be filled in by the time you turn in your final report). This is your chance to discuss all of your design decisions (consider this the README's big brother).

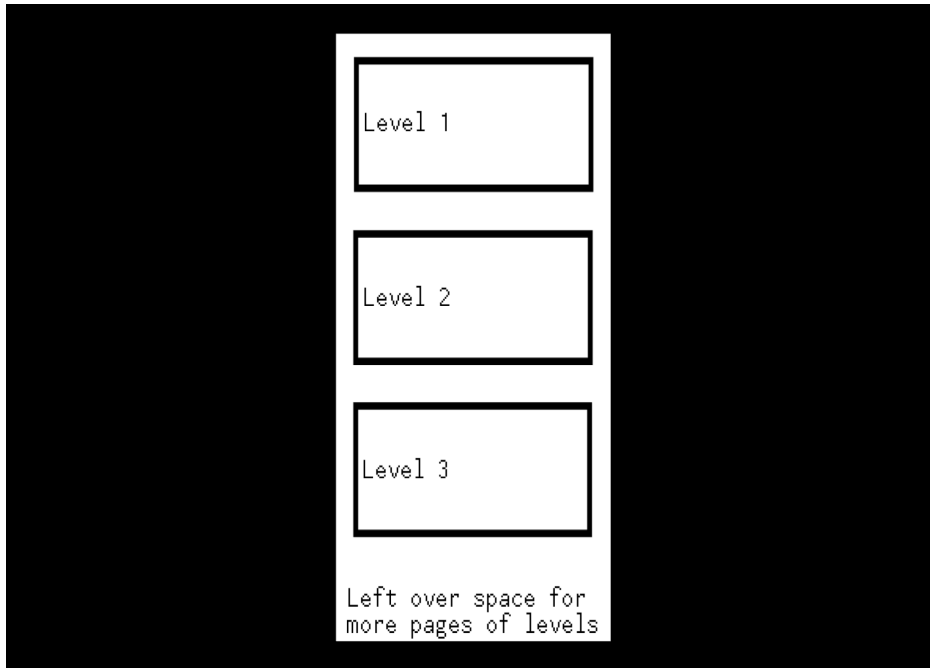


Figure 3. Mockup of the level select screen

4.1. UML Outline

Show the full structure of your program. Make sure to keep on updating this section as your project evolves (you often start out with one plan, but end up modifying things as you move along). As a note, while Dia fails miserably at generating pdfs (probably my fault), I have had much success with png files. Make sure to wrap your images in a `figure` environment, and to reference with the `ref` command. For example, see Figure 4.

4.2. Design Patterns Used

Make sure to actually use at least 2 design patterns from this class. This is not normally part of such documentation, but largely just specific to this class – I want to see you use the patterns!

5. Results

This section will start out a little vague, but it should grow as your project evolves. With each deliverable you hand in, give me a final summary of where your project stands. By the end, this should be a reflective section discussing how many of your original goals you managed to attain/how many desired use cases you implemented/how many extra features you added.

5.1. Future Work

Where are you going next with your project? For early deliverables, what are your next steps? (HINT: you will typically want to look back at your timeline and evaluate: did you meet your expected goals? Are you ahead of schedule? Did you decide to shift gears and implement a new feature?) By the end, what do you plan on doing with this project? Will you try to sell it? Set it on fire? Link to it on your resume and forget it exists?

References

- [1] H. Kopka and P. W. Daly, *A Guide to L^AT_EX*, 3rd ed. Harlow, England: Addison-Wesley, 1999.



Figure 4. Your figures should be in the *figure* environment, and have captions. Should also be of diagrams pertaining to your project, not random internet kittens