Games Development – Design Document

Evan Mitchell – 2209213

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References List

Websites such as Stack Overflow, Unity Forum, and Unity Scripting API, were all used to further research methods on supplementing the creation of the game and its functions, in particular for elements such as Ray casting and Instancing.

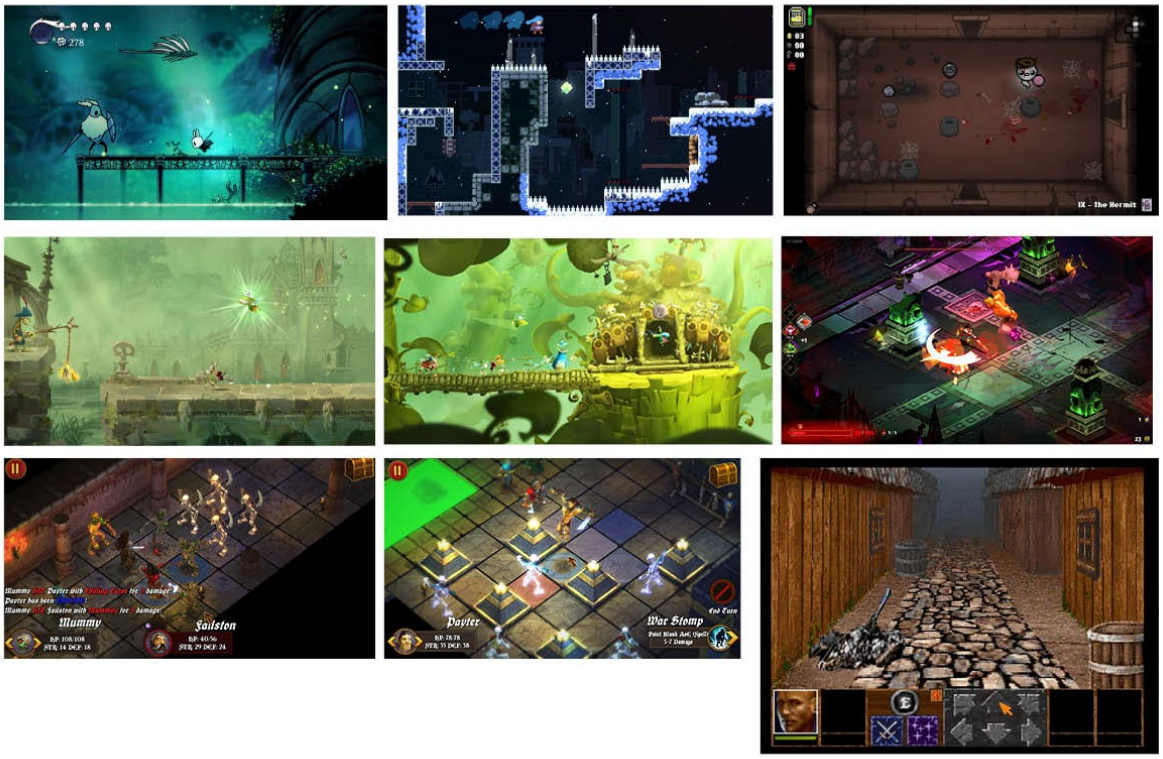
Sprint Plan

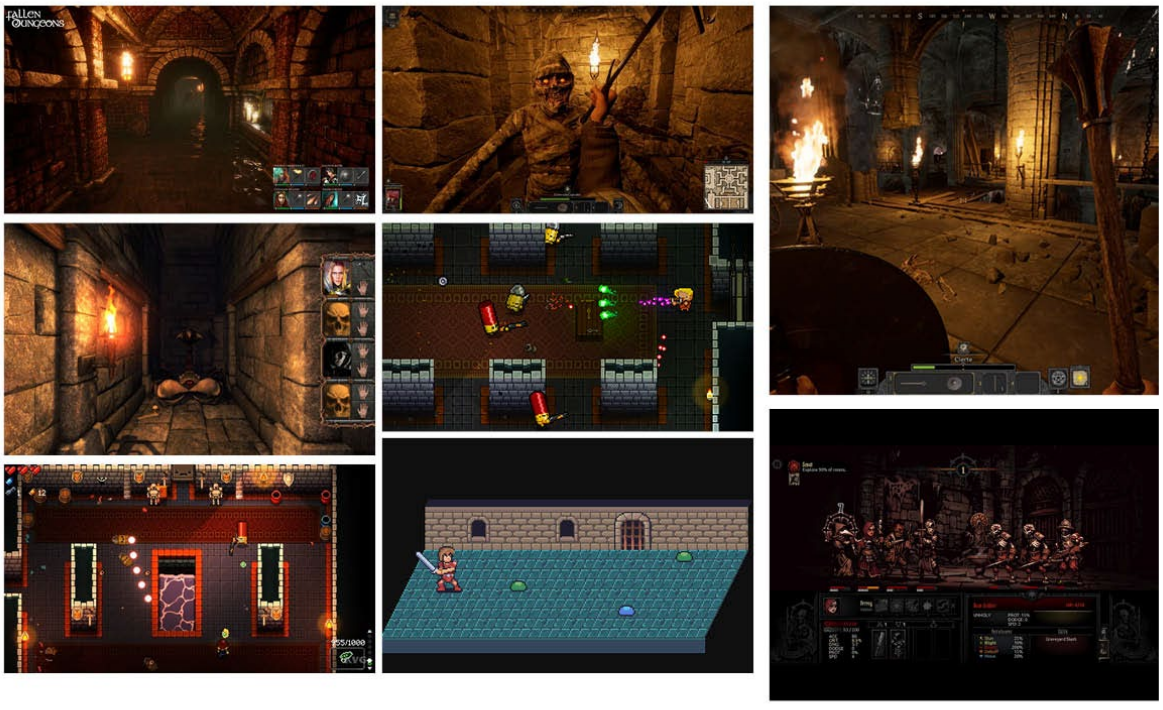
Gantt Chart Week:	1	2	3	4	5	6	7	8	9	10	11	12	13
Design Document													
Starting Area													
Additional Scene													
Persistent Game State													
2 Game Objects using PhysX													
Trigger Zone													
Rigidbody Hitting Player													
Level Loader System													
Custom Material													
Rigidbody Hitting Rigidbody													
Gamestate Manager													
Gameobject Interaction													
Audio/SFX													
Player Activated Instantiated													
3 Accessibility Features													
Ray Casting													
Tutorial													
Expanded UI													
Project Testing													
5 Min Video Demo													

Week 1 begins: 18/09/2023

Week 13 begins: 11/12/2023

Moodboards





Requirements Analysis – 300 words

Functional:

- MUST use assets from the Unity Asset store.
- MUST Involve a player character.
- MUST be able to deal and take damage from enemies.
- MUST have at least 1 finished level.
- MUST randomly generate room layout in levels.
- MUST involve persistent game state of health and score.
- MUST be able to “clear” rooms based off if all enemies have been killed.
- MUST be able to transition from a menu screen to the game, and the inverse.
- SHOULD record a highscore.
- SHOULD have “special attack”.
- SHOULD have multiple levels, increasing in size each time.
- SHOULD have alternate room to an enemy only room.
- SHOULD have traps that interact with the player.
- SHOULD have enemies that can move towards and attack the player.
- SHOULD have basic audio when attacking and taking damage.
- SHOULD have changeable settings, particularly accessibility aiding ones.
- SHOULD use custom made assets/materials.
- COULD have more audio, like on room clear, or background music.
- COULD have an endless mode.
- COULD Implement feedback from testing.

Non-Functional:

- MUST be made in Unity LTS 2022.3.8f1.
- MUST perform testing with at least 3 participants.
- COULD perform testing with 5+ participants.

Accessibility Analysis

Game 1

An example of great accessibility features within a game, is the 2D platformer ‘*Celeste*’, which sports an incredible 30+ options for accessibility.

Upon release the game had few options that provided an accessible experience to those that needed them, however, through continuous updates, the game now is hailed as a pinnacle of what a modern game should hope to include to aid accessibility, with its most famous feature being its assist mode.

The assist mode allows the player to alter multiple aspects about the game in order to make progression easier, such as slowing the game down, make you invincible, give you infinite stamina, skip parts of the game, and more. The assist mode allows those who struggle to progress in the game, particularly those with accessibility issues, to play without issue, and still have the same experiences as those who choose to play without it. It gives a massive amount of choice and control over a players in-game experience, meaning someone who just needs a little assistance can choose to slow the game down marginally, but maybe not

turn on the invincible mode as to retain some level of challenge, or players can avoid the mode entirely, and play the game in its full difficulty.

There are also further settings that allow for players to aid their in-game experience, such as: you can change the difficulty at any time, you can get assistance with controls like aiming, steering, and running, you can turn off in-game timers and time limits, increasing the size of your map, outline things you can interact with, and turn off flashing and screen shake.

Celeste not only aids in accessibility by having only a few input options to control the game through, it also allows for both the use of either keyboard or controller to play, as well as for the full remapping of both these controllers, granting another massive boost in a player's ability to engage with the game and all its functions.

Throughout the rest of Celeste's accessibility options, we see more commonplace settings, such text enhancement options, and a plethora of visual and audio adjustable options, in order to make the game as accessible as possible to as many people as possible.

Game 2

A less typical example of accessibility in a game can be seen in From Software's '*Elden Ring'.* The usual accessibility features such as extended subtitle options, or spatial audio, can't be found, which is something that has been criticized repeatedly, however, it does offer accessibility in a more unique manner, through the customization of the game experience.

Through the huge amount of weapons, armours, accessories, spells, stats, and buffs, players have almost total control over every aspect of everything their character does, meaning players never have to be stuck with gameplay that does not aid their ability to play the game. For example, a player with reduced motor control or slower reflexes may struggle to play with a mage build, that requires a lot of switching between spells, and replenishing your mana constantly, and so, may opt for a playstyle that involves single, big hit, weapons, to reduce the amount of inputs needed for them, yet they can still achieve the same results.

Another feature that the game offers that aids accessibility is the use of "Sprit Ashes", or NPC summoning, during boss battles. As boss battles offer some of the greatest challenge in the game, they can be a huge barrier in the game for any player, regardless of accessibility needs, however, players are given the option to summon allies to help them defeat these bosses, in the form of non-player characters that fight alongside you. These summons operate independently, dealing out damage, and taking 'aggro' from the bosses away from the player, massively increasing the ease of fights, with some even offering extra support like healing the player. The summons are also entirely optional, so whilst for some they are key to helping them progress through and even play the game, those who see them as making the game too easy can avoid them, and enjoy the game at a level of challenge appropriate for them.

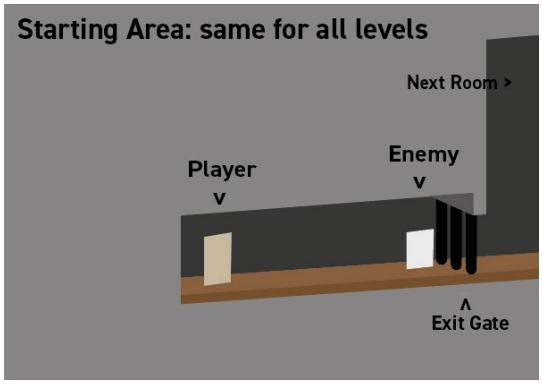
The game also offers an "auto lock on" feature, that again can be toggled on or off by players, so that the level of challenge can again be altered, but allows those who will struggle to manage moving the camera, and moving the player, and attacking enemies, all at once, can alleviate these problems, by letting the auto lock move the camera, and guarantee a certain enemy will be hit, greatly improving accessibility, and overall ease of play.

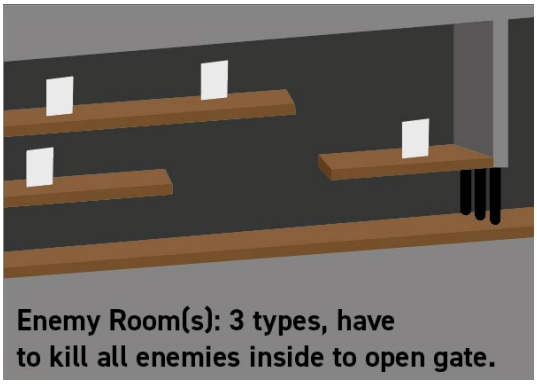
Elden Ring, as mentioned, does suffer from lacking traditional accessibility options however. All camera and audio options are incredibly limited, with only simple functions available, severely lacking the great amount of options expected in a triple A game title of the modern age, with things such as spatial audio and visual cues when enemies are targeting you. The

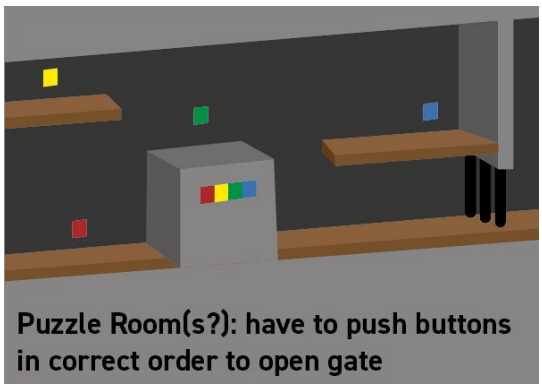
game does support subtitles, however, the font or size cannot be altered on them, leading to poor legibility in certain areas of the game that are poor backgrounds for the text.

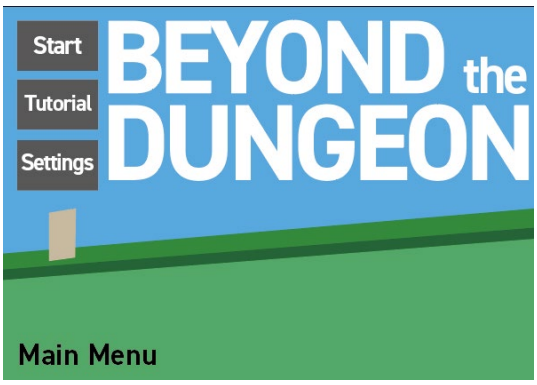
Wireframes

Game Wireframes

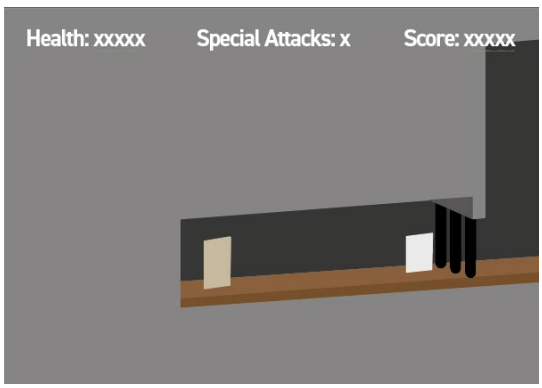


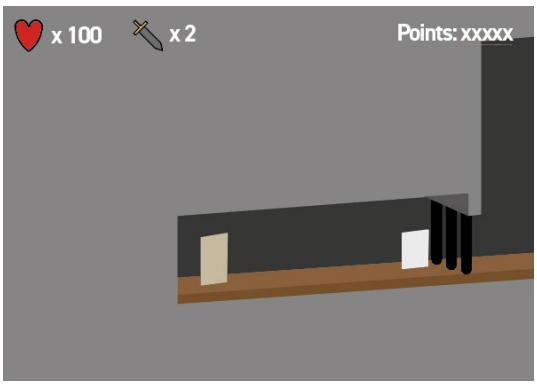


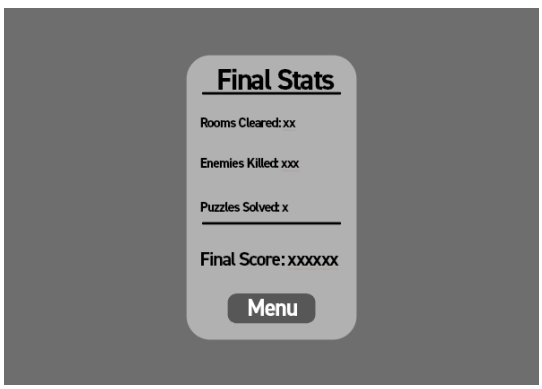


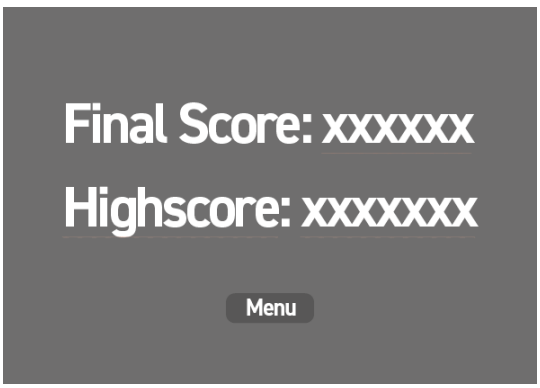


GUI Wireframes









Asset Creation

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