Sprint Backlog

*Green indicates the item has been implemented

Name	Description	Effort
Day/Night	Day/Night cycle lighting implemented into game	4 - Not too hard to implement, a good introduction to Unity engine
Active Tower	An rotating tower controlled by the user is implemented, which can shoot at enemies	7 - Core component of game, functionality is not too hard to implement because it is controlled by user input
Embed in Webpage	Embed the game in a webpage so it can be played online, then keep track of stats and such online	7 - Could be easy to implement, but it is pretty different than everything else in the project and requires outside research
Rotate Game Camera	Give the user controls to rotate the camera to get different views of the game	4 - Hardest challenge is placing cameras and figuring out how to activate/deactivate them
Buy AI towers	The user should have the ability to buy and place towers on the board to shoot at enemies automatically	9 - Many mechanics are required here that all have to work together, including projectiles, finding enemies, money system, placement
Hover over tiles	When the user hovers over a tile, it should light up and pop up to make the game board more “alive”	3 - The main challenge is in writing the script to translate the tiles
Start Screen	When the user starts the game, they are presented with a start screen to begin the game	5 - This will require some separation from the rest of the project, and might require some research to accomplish
Money System	The user is rewarded for destroying enemies with money, this money can be used to buy power-ups and additional defenses.	6 - This could be hard to keep track of throughout the game.
Health System	The tower and the enemies need to have health, which when depleted kills either the enemy or the game if the tower is depleted	5 - Implementation might not be too bad, but integrating with the rest of the game could be more difficult.

Randomly Generated Map	When the game starts, the map should be randomly generated, so that each playthrough is a unique experience	8 - Hard to implement and crucial to the success of our overall design
Creation of Enemies	Enemies should be created at an appropriate frequency relative to the game level	6 - Balancing randomness and not making the game too tough could be a challenge with this.
Projectiles	One main projectile class will be used by the different types of towers to destroy enemies	8 - Figuring out the instantiation and detecting collision with enemies could be challenging.
Passive Towers	The user can buy passive towers that provide benefits to the user.	7 - This could be tough because it would have to edit the attributes of many different aspects of the game
Health Tower	The user can buy towers that give health to the user at a constant rate.	5 - Not as hard to implement because it only needs to edit the attribute of one object.
Speed Tower	The user can buy towers that slow down the enemies.	5 - need to access the enemy attributes of enemies within a given range.
Damage Tower	The user can buy towers that connect to other towers to increase the damage done to enemies.	7 - Needs to connect to other towers within a given radius and access the attributes of these.
UI handling of purchases	UI implemented to allow the user to buy towers and restrict them from buying towers if their funds are too low.	7 - Difficult to manage UI and 3D game at once within the Unity engine.
Laser Towers	Allow the user to buy laser towers which shoot a laser at enemies, doing a certain amount of damage per second.	7 - This is difficult because we have to display the laser connection between the towers and the moving enemies.
Audio Elements	Add background music and sound effects for different events in the game	4 - Not very difficult because Unity has good infrastructure to accomplish this.
Start Screen	Start screen implemented which allows the user to start the game, and exit the game, as well as providing a nice visual.	6 - Difficult because it requires us to make a completely new scene in Unity.

High Score display	Keep track of the highest score achieved and display this in the start screen.	5 - Probably easy to implement, the difficulty lies in storing this information somewhere, possibly in an online database.
Waves of Enemies	Many enemies spawn at a time to present a challenging wave for the player to deal with.	6 - The logic for when this happens and how many enemies are spawned at a time could be tricky.
Money Tower	The user can purchase a money tower which periodically adds money to the player's total	4 - Not very hard to implement, it just needs to access the player wallet periodically.
Health Bars above enemies	UI displaying the health of enemies which floats above them as they travel on the path	8 - Very difficult to make the UI move in 3D space.
Upgrades for the player tower	Add the ability for the user to buy upgrades for their tower, such as better weapons.	7 - Hard to implement controlling which type of projectile is created by the player tower.
Night time Difficulty	Make the game much more difficult, yet more profitable during the night for variation in gameplay	9 - Hard to detect night time, many attributes of many classes need to be accessed. Might require a large restructure.
Different types of enemies	As the difficulty increases, spawn different types of enemies to add variation to gameplay.	8 - Difficult to create the behavior for these enemies, and would greatly affect the structure of enemy spawning.
Different maps	Allow the user to choose from different options at the start which affect which map is added.	9 - Very difficult because we would have to create completely new procedural generation and scenes.