### Assignment 5 - Agile Project Planning

SE 638: Software Project Management

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### Work Summary

Each team member researched each question individually before meeting up to share their findings. After debating and gathering insight for each question, the parts were divided equally between team members. The team met twice to assign sections and perform a group review.

Shaima Albugami

* Section 1: discussion of the game
* Section 2: Project overview statement
* Section 3: Version 2
* Section 4: Cycle 1

Michelle Ibarra

* Section 3 - Version 4 Game Store
* Section 4
  + Cycle 4 – Host a game
  + Cycle 5 -Join a game
* Section 7
  + Describes Microsoft Project Plan based on the Work Breakdown Structure (WBS)
  + Created the Microsoft Project Plan
  + Created the Labor Estimates

Steven Greulich

* Section 3 – Version 1
* Section 4 – Cycle 3
* Section 5

Yiyun Zhang

* Section 3 – Version 3
* Section 4 – Cycle 2
* Section 6

## 1. A discussion of the game type and context, potential audience/market, and the main features of the game (how it will be played).

Among us is a multiplayer game that was released on June 15, 2018. In this game, 4 to 10 players need to survive in a spaceship. The players need to finish a list of tasks to repair the spaceship; these tasks are assigned automatically. One to three of these players can be imposters. The imposters' role is to kill all the crewmates without getting caught or to sabotage the environment by damaging the spaceship's equipment. When a player finds a dead body, they can hold an emergency meeting where everyone can join, including the imposters. In the emergency meeting, everyone tries to suspect the imposters by using the chat function. After each emergency meeting, they can either vote off a suspected imposter or skip the voting and continue to play. The player who gets voted off will be ejected from the spaceship/game. The players who get killed by the imposters can still finish their tasks as ghosts but cannot participate in the emergency meetings. When the environment gets sabotaged, the players have a limited time to fix the equipment to survive. The players can win by either voting off the imposters or completing all their tasks.

This game can be played in public or private. The public environment allows the player to play with strangers, while the private environment allows the player to play with friends. Players can also host a game publicly where anyone can join the game or privately where the host has to give the code to their friends. The host could kick players out of the game if they were inappropriate. All that is needed to play this game is a smartphone/laptop with an internet connection. Below is a screenshot of the game interface.

## 2. A project overview statement (POS)

|  |  |  |  |
| --- | --- | --- | --- |
| PROJECT OVERVIEW STATEMENT | Project Name  Among Us | Project No.  AmongUs\_V1 | Project Manager  Ashely Schor |
| **Problem / Opportunity**  In a time where video games are focused on having the good players running from the bad ones, a game that provide a mysterious environment is needed. A game that requires all players to work as one team and not as sperate teams or individuals. Among us is a deductive game where players need to work together to find the imposters among them while trying to repair a spaceship.  There is an opportunity to attract players to download the game by making the game available on iOS and Android. For that to happen, the game needs to have an attractive design with animation and sound effects that empathize the mysterious aspect of the game. The game should keep the users invested by changing the game environments and increasing the level of difficulty. Revenue can be generated by having advertisement, paying to unlock experts’ levels, promoting other games, and selling merchandize.  Among us will have three spaceship environments. There are three levels in each environment: Easy mode (few tasks, few obstacles, multiple players, one imposter), Moderate Mode (more tasks, more obstacles, multiple players, two imposter), Hard Mode (more tasks, more obstacles, multiple players, three imposter). | | | |
| **Goal**  To develop an attractive game that provides a mysterious and enticing environment where players can join regardless of their demographic. The game will be available on iOS and Android. It will generate revenues by having advertisement, paying to unlock experts’ levels, promoting other games, and selling merchandize. | | | |
| **Objectives**  Version 1 (The easy mode) will:  1. Design an intuitive play environment to provide a quick learning curve.  2. Allow the host of the game to adjust the game difficultly to provide a flexible environment that accommodate different players skills.  3. Provide simple tasks that require no prior skills. Players can finish as much or as little tasks as they want.  4. Use animations that encourages players to finish their tasks and have a sense of accomplishment.  5. Players don’t have to participate in the emergency meeting and they only need to participate in the voting. The simplicity and the flexibility of the game put less pressure on players which increases the possibility of them returning back.  6. Allow players to change their names, customize their color, skins, and pets so players can immerse themselves in the game.  7. Allow players to interact with each other at any given time to use their intellect to find who the imposter is. | | | |
| **Success Criteria**   * At least 200 downloads per day * At least 500 players per day * At least 3 levels played per visit. * At least 20% increase in the number of click on advertisements * Game rank is 4.5/5.0 in Apple store and Google play store. * Game name mentioned at least 70% on social media. | | | |
| **Assumptions, Risks, Obstacles**  1. We assume that the game will not have legal issue in term of copyright.  2. We assume that the game can be installed via Apple Store and Google Play.  3. We assume that the game can be played by people who have no prior video game experience  4. We assume that the promotion of the game will be through popular video gamers, blogs, social media and word of mouth.  5. The risk of effectively communicating the game concept to the players.  6. The risk of Failing to prioritize features for design and development.  7. The risk of taking longer time than expected to finish Version 1 of the game to familiarize with which will increase the payback period of the project. | | | |
| Prepared by John Smith | Date November 23rd 2020 | Approved by Ashely Schor | Date November 25th 2020 |

## 3. Version Plan

Version 1: Base game for one stage

* **Scope** – Version one of game would be the minimal viable product in order to initially launch the game. Users can first create an account and have the ability to add and accept friend requests. A player could then decide to host a game, which can either be public or private. If the player chooses private, the player would be given a code that would need to be given to other players in order to join their game. On the other hand, if the game is public, a code is still given for people to join, but anyone without a code can join as well. The player is also given the option to join games if they do not wish to host a game. The same options would be available to those users, they will have the ability to join a public game or join a private game that is being hosted given a unique code. Once the game has started, the team is broken out between crewmates and imposters. Each crewmate will be given a set of tasks that they will need to perform on the spaceship. The tasks for version one of the game include: connecting the broken wires, downloading files, uploading files and swiping an access card. If all of the tasks are completed, the crewmates win the round. However, the role of the imposter is to either kill off the crewmates or to sabotage the tasks so that they cannot be completed. If the Imposters sabotages a task, the crewmates have a limited amount of time to restore the task. If the time limit is up, the imposter will win the round. If the crewmates are able to restore the sabotaged task, the game continues. The imposter also has the ability to kill off the crewmates, but they must do this without being seen. If the imposter kills a player and another player sees them, that crewmate can try to convince the other teams via a chat window to boot the suspected person off the ship. After discussion, everyone can decide to vote who they think that the imposter might be. If they guess correctly, the imposter will be booted off the ship and the crewmates will win the round. If they guess incorrectly however, a crewmate will be booted from the game and the game will continue. Each round continues until one of the following scenarios occurs: crewmates complete all assigned tasks, the imposter kills all of the crewmates, the imposter is booted off the ship, or the imposter is able to successfully sabotage one of the crewmates tasks.

Version 2: Create new levels - Create and implement a new spaceship environment (More tasks, more obstacles, bigger spaceship)

* **Scope** – Version two of the game will introduce a new spaceship environment. This environment has more rooms with a bigger spaceship. These rooms are admin, cafeteria communications, electrical, engines, medbay, navigation, o2, reactor, security, shields, storage, and weapons. We will introduce a new set of tasks that vary in terms of visibility, how many people are required to finish them, and duration. The types of tasks are visual tasks, common tasks, short tasks, and long tasks. The visual tasks are tasks where other players can see crewmates performing. These types of tasks help prove that a crewmate is not an imposter. If a crewmate was accused of being an imposter, they could complete the visual task in front of crewmates to prove otherwise, as imposters cannot perform tasks. The visual tasks are empty garbage and submit scan. The common tasks are the tasks that require two crewmates to complete them together at the same time and place. Having two crewmates complete a task together ensure that none of them is an imposter. These two crewmates can support each other in emergency meetings. The common tasks are swipe cards and fix wiring. The short tasks are short in duration: align engine output, calibrate distributor, clean 02 filters, clear asteroids, prime shields, stabilize steering, and unlock manifolds. The long tasks are longer in duration: upload data, submit scan, start the reactor, inspect sample, and fuel engines. Imposters in this map can be up to 3, and the players' speed can be adjusted. The host of the game has control over choosing the number of imposters and the players' speed. Another control will be introduced, adjusting the discussion time of the emergency meeting and the voting time.

Version 3: Play Customization

* **Scope** – Version 3 would be the improvement of game elements diversity. There will be four major customization options being provided to the players: character customizations, map customizations, audio customizations and interface customizations. For character customizations, players can change the appearance of their characters including gender, face, emote, hair style, hair color, skin color, hat, glasses and cloth. For map customizations, players can change the map effects for decoration purpose, such as ground style, weather condition, light effects and blood effects. The voice customizations allow players choose their preferred voice packets, including character voice, task complete sound effect, background sound effect, interaction sound effect, movement sound effect, kill sound effect, win and loss sound effect. For interface customization, players can customize the interface elements including button and task board’s style, size, color, alpha, font and visibility. The difference between customizations and game store items is that the customizations are parts of the original game content: players don’t need to spend money or time to acquire them. The play customization’s goal is to enrich the contents in the gameplay, allow players to have capabilities to choose their favorite combinations of appearances, visual effects, voices and sounds while proceeding the gameplay. However, these customization options don’t affect the gameplay mechanisms of the game, they are only for decoration and visual effects only.

Version 4: Game Store (selling character types, badges, stickers, etc.)

* **Scope** – The scope for version 4 of Among Us is to develop and implement the Game Store. A Game Store would be a mechanism to generate sales during or between games. One mechanism that helps generate Game Store sales is offering Players ways to customize their game player. The major features for developing the Game Store include the categories of products, store bag (inventory of purchased Game Store items), and payment.

For the Game Store category, Players can purchase Accessories, Tools, Levels, Social, and Promotional items. In the Accessories category, Players can purchase hats, skins, shoes, t-shirt, glasses, and more, to create unique personas to use during the game. While there is a standard set of accessory items for purchase, there are also time limited accessories Players can purchase at a higher price point. In the Tools category, Players can purchase items that can assist them by providing temporary relief from a sabotage event during game play. These items include oxygen tank, night vision goggles, flashlight, biohazard mask, invisibility cloak, spells, and more. Further, this Game Store offers Players to purchase Levels not available in the out of the box app. The allure to these Levels available by purchase in the Game Store is they have environmental challenges, user interactions, sabotaging capabilities that are not available in the free version Levels. Moreover, the Social Categories provide Players the option to purchase Avatar Profile images, Among Us Emojis, and Additional Game Music. The final Game Store category is Promotions. The Promotion products is simply a bundle of existing Game Store items available for purchase at a lower price than if the bundle was purchased individually.

## 4. A Cycle Plan overview for Version 1

**Cycle 1:**

* **Cycle 1 Scope** – In this cycle, we will create the basic features of the game environment. The cycle is focused on creating the user interface of the game, the characters animations, character interaction with the environment and with each other, the sabotaging capabilities and basic user controls.
* **Cycle 1 Objective** – The objective of this cycle is to provide players with the basic game environment to grasp the concept and the dynamic of the game.
* **Cycle 1 Feature-Sets**: Implement the spaceship, basic character animation (drop into the spaceship, walk, interact with the environment, and interact with each other), basic gameplay environment & basic UI controls, and basic sabotaging capabilities.

Cycle 2: Game play mechanic:

* **Cycle 2 Scope** – In this cycle, we will create the game play mechanics for the game. The roles setting, player objectives will be designed and implemented in this cycle. In the end, the game chat function will also be added to the game.
* **Cycle 2 Objective** – The objective of this cycle is to provide players a functional gameplay mechanics and complete game content.
* **Cycle 2 Feature-Sets**: Implement the roles settings, player objectives and game chat.

Cycle 3: Creating Account:

* **Cycle 3 Scope** – In this cycle, we will create the user profile for the game. Within the user profile, a user can create / edit a user profile. After games are played, the user profile will display the winning statistics for the given profile. The user will also have the ability to accept friend requests from other players in addition to being able to send friend requests to other players.
* **Cycle 3 Objective** – The objective of this cycle is to provide players their own unique profile to play the game as well as being able to accept and send friend requests.
* **Cycle 3 Feature-Sets**: Implement the user profile, winnings statistics, friend requests and add a friend.

Cycle 4: Host a game:

* **Scope:** In Cycle 4, the priority will be to develop the features for a Player to Host a game. This will provide Players the ability starts a public or private game and control what Players can enter the game. Anyone Player can host a game.
* **Objective:** The objective of Cycle 4 will be to allow Players to create games and control which other Players can participate from the games the Player initializes.
* **Feature Sets:** The features included in Cycle 4 include the Player’s ability to create a public game, the Player’s ability to create a private game, the ability to add a Player to a game, and the ability to reject a Play from a game.

Cycle 5: Join a game:

* **Cycle 5 Scope:** In Cycle 5, the priority will be to develop the feature for a Player to join a game. Players can only join one game at a time.
* **Cycle 5 Objective:** The objective of Cycle 5 will be to create methods for a Player to join a game. Players should be able to join public or private games.
* **Cycle 5 Feature Sets:** The features included in Cycle 5 include the ability for a Player to search for public games to join and to select private games to join.

## 5. A work breakdown structure for Version 1 of the project:

**Cycle 1 Feature Decomposition:**

**Cycle 1 Feature Sets:** Implement the spaceship, basic character animation (drop into the spaceship, walk, interact with the environment, and interact with each other), basic gameplay environment & basic UI controls, and basic sabotaging capabilities.

**Cycle 1 High-Level Features (Defined as User Stories), with Mid-Level & Low-Level Feature Decomposition:**

* **F1.** As a player, I will be dropped into the spaceship at the beginning of the round
  + **F1.1** While awaiting the maximum player count, the player will be placed into a spaceship lobby while awaiting more players
    - **F1.1.1** When players join the match, the counter will increase showing how many players are remaining to start the match
    - **F1.1.2** When the maximum count of players are met, the game will automatically start
    - **F1.1.3** The host of the game has the ability to start the game at anytime after four people have joined the game lobby
  + **F1.2** After the host starts the game, I will be brought into the game map
    - **F1.2.1** When the host hits start, a countdown will appear on the screen
    - **F1.2.2** When the countdown hits zero, all players will start in the cafeteria room on the map
* **F2.** As a player, I can interact with objects within the game map
  + **F2.1** As a player, I cannot run through walls
    - **F2.1.1** The system will not move the character through the wall
    - **F2.1.2** The system will continue to display the character animation if running, but not move the character through the wall
  + **F2.2** As a player, I cannot run through other players within the game
    - **F2.2.1** The system will not move the character through other players
    - **F2.2.2** The system will continue to display the character animation if running, but not move the character through other characters
  + **F2.3** As a player, I cannot run through physical objects within the game
    - **F2.3.1** The system will not move the character through physical objects
    - **F2.3.2** The system will continue to display the character animation if running, but not move the character through objects
  + **F2.4** As a player I can interact with objects within the game to perform tasks
    - **F2.4.1** The task that can be interacted with will be highlighted in yellow
    - **F2.4.2** A player can only interact with an object when they are within range of the task
    - **F2.4.3** When a player is within range of the object and clicks on the task, the task screen will be displayed for the player
    - **F2.4.4** When the player completes the task, the task will no longer be highlighted on the screen
    - **F2.4.5** When the player completes the task, the task will no longer be enabled to be clicked.
* **F3.** As a player, when I click the directional pads on my keyboard, I should see the character move on the screen
  + **F3.1** When the player clicks on the up directional key, the player will move up in the game
    - **F3.1.1** When the up button is pressed down, the character will move up on the screen
    - **F3.1.2** When the up button is released, the character will stop moving on the screen
  + **F3.2** When the player clicks on the down directional key, the player will down in the game
    - **F3.2.1** When the down button is pressed down, the character will move down on the screen
    - **F3.2.2** When the down button is released, the character will stop moving on the screen
  + **F3.3** When the player clicks on the left directional key, the player will move left in the game
    - **F3.3.1** When the left button is pressed down, the character will move left on the screen
    - **F3.3.2** When the left button is released, the character will stop moving on the screen
  + **F3.4** When the player clicks on the right directional key, the player will move right in the game
    - **F3.4.1** When the right button is pressed down, the character will move right on the screen
    - **F3.4.2** When the right button is released, the character will stop moving on the screen
* **F4.** As a player that is the imposter, I will be given the ability to sabotage tasks that are on the map
  + **F4.1.** As the imposter, I shall be able to see a list of all available tasks that can be sabotaged
    - **F4.1.1** When the imposter clicks on a task, an alarm will sound for all players
    - **F4.1.2** When the imposter clicks on a task, an on-screen alert will appear for other characters stating which task is being sabotaged
  + **F4.2** As the imposter, I can win the game if the sabotaged task is not revived from the crewmate players
    - **F4.2.1** If the sabotaged task is not revived by the crewmates within sixty seconds, the imposter will win the round
    - **F4.2.2** If the sabotaged task is revived by the crewmates within sixty seconds, the countdown clock will be removed from the screen
    - **F4.2.3** If the sabotaged task is revived by the crewmates within sixty seconds, the alarm sound will be stopped.
* **F5.** As a player I will be given a Heads-Up Display (HUD) to give me available options within the game to select
  + **F5.1** As a crewmate player, I will have an icon to select for calling an emergency meeting
    - **F5.1.1** The icon will only be clickable once per game.
    - **F5.1.2** When the icon is clicked, it will sound an alarm
    - **F5.1.3** When the icon is clicked, it will bring all characters back to the starting point on the map
    - **F5.1.4** When the icon is clicked, it will enable the chat feature within the game for characters to discuss
  + **F5.2** As a crewmate player, I will have an icon to leave the game
    - **F5.2.1** When the icon is clicked, the crewmate player can confirm leaving the game
    - **F5.2.2** When the icon is clicked, the crewmate player can cancel the request to leaving the game
  + **F5.3** As a crewmate player, I will have an icon for performing a task
    - **F5.3.1** The icon for performing a task will be enabled when they are within 5 feet of the task
    - **F5.3.2** The icon for performing the task will be disabled once the player completes the task
    - **F5.3.3** If the player closes the task, the icon will remain enabled
    - **F5.3.4** When the player clicks on the icon, it will bring up the appropriate task for the player to complete
  + **F5.4 As an imposter, I will have an icon for sabotaging a task**
    - **F5.4.1** When the icon is clicked, the imposter will have a map pop up
    - **F5.4.2** The map that is displayed, will show all of the available tasks that can be sabotaged
  + **F5.5 As imposter, I will have an icon to leave the game**
    - **F5.5.1** When the icon is clicked, the crewmate player can confirm leaving the game
    - **F.5.5.2** When the icon is clicked, the crewmate player can cancel the request to leaving the game

**Cycle 2 Feature Decomposition:**

**Cycle 2 Feature Sets:** Implement roles, objectives and game chat.

**Cycle 2 High-Level Features (Defined as User Stories) with Mid-Level Feature Decomposition:**

* **F1.** As a player, when I move on the screen, the player should have an animation that shows them moving in the game
  + **F1.1** When the player is actively moving on the screen, the character will show a running animation indicating movement
  + **F1.2** The player is not moving on the screen, the character will not display a running animation
* **F2.** As a player, I can either be a crewmate or an imposter within the game
  + **F2.1** At the start of the game, the game will randomly select a player to become the imposter for the round
  + **F2.2** At the start of the game, the game will assign all other players as crewmates for the round
* **F3.** As a player, I can communicate with other players via a chat channel
  + **F3.1** The chat dialog will only be available to the users when a player clicks on “emergency meeting” button
  + **F3.2** The player can hit enter after they are done typing to send their message
  + **F3.3** If a player is dead for the current round, they cannot type into the chat channel
* **F.4** As a player, I will get a list of objectives at the beginning of the round outlining what I should do.
  + **F4.1** At the beginning of the round, the crewmate players will get a list of tasks that they will need to complete
  + **F4.2** At the beginning of the round, the imposter player will get a list of tasks that they can sabotage

**Cycle 3 Feature Decomposition:**

**Cycle 3 Feature Sets:** Implement the user profile, winnings statistics, friend requests and add a friend

**Cycle 3 High-Level Features (Defined as User Stories), with Mid-Level Feature Decomposition:**

* **F1.** As a player, I can create a user profile
  + **F1.1** The player can create a user by choosing a name and the color of their character
  + **F1.2** The player can edit their name or character color
* **F2.** As a player, I can view the statistics of my game play
  + **F2.1** The player can view how many games that they have won as a crewmate
  + **F2.2** The player can view how many games that they have lost as a crewmate
  + **F2.3** The player can view how many tasks that they have completed as a crewmate
  + **F2.4** The player can view how many games that they have won as an imposter
  + **F2.5** The player can view how many games that they have lost as an imposter
  + When the icon is clicked, the crewmate player can cancel the request to leaving the gam
* **F3.** As a player, I can send a friend request to another player
  + **F3.1** The player can type in a friend code to send a friend request
  + **F3.2** If the player types in an invalid friend code, the game will alert the user to type in a valid code.
* **F4.** As a player, I can accept a friend request from another player
  + **F4.1** The player can give other players can generate a friend code to accept friend requests
  + **F4.2** The player can accept a friend request from another player

**Cycle 4 Feature Decomposition:**

**Cycle 4 Feature Sets:** Player’s ability to create a public game, the Player’s ability to create a private game, the ability to add a Player to a game, and the ability to reject a Play from a game.

**Cycle 4 High-Level Features (Defined as User Stories), with Mid-Level Feature Decomposition:**

* **F1.** As a player, I can host a game for other players to join the game
  + **F1.1** The host can have the ability to toggle the game to either be public or private
  + **F1.2** If the game choice was made private, a key would be generated so that other players can join the game
* **F2.** As a player host, I can kick another player from the game
  + **F2.1** The host can select a player and have them temporarily removed from the game
  + **F2.2** The host can select a player and have them banned from the game so that they cannot rejoin

**Cycle 5 Feature Decomposition:**

**Cycle 5 Feature Sets**: Ability for a Player to search for public games to join and to select private games to join.

**Cycle 5 High-Level Features (Defined as User Stories), with Mid-Level Feature Decomposition:**

* **F1.** As a player, I can search for a publicly hosted game and join it
  + **F1.1** The player can see a list of all available games that have not started yet
  + **F1.2** The player can see a number of available spots still left in each game
  + **F1.3** The player can join a game if there are one or more available spots still left in the lobby
  + **F1.4** If during the joining process, that the lobby becomes full, the game will tell the player to select another lobby.
* **F2.** As a player, I can search for a privately hosted game and join it
  + **F2.1** The player can enter in a key to join a private game
  + **F2.2** If the player enters an invalid game code, the game will let the player know that they need to enter in a valid code

## 6. Produce a labor/effort estimate for the whole of Version 1, not just cycle 1.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Task Name** | **Task Duration (Days)** | **Resource Names** | **Effort Totals** | **Phase Totals** |
| **Version 1** |  |  |  |  |
| **Version Scope** | **161** |  |  | **409** |
| Develop conditions of satisfaction (product goals) | 6 | PM | 6 |  |
| **Define High-level Game Requirements** | **65** |  |  |  |
| Define gameplay strategy | 16 | Game Designer, PM | 32 |  |
| Define game development environment requirements | 6 | Dev1, Dev2, Dev3, Dev4, Dev5 | 60 |  |
| Develop game levels and objectives | 12 | Game Designer, PM | 24 |  |
| Define main gameplay characters and elements | 9 | Animator | 9 |  |
| Produce level storyboards | 9 | Graphic artist, Animator, Dev1, Dev2, Dev3, Game Designer | 54 |  |
| Define character animation requirements | 6 | Animator | 6 |  |
| Define feature-sets around game levels and objectives | 7 | Dev1, Dev2, Dev3, PM, Game Designer | 35 |  |
| **Technology acquisition** | **15** |  |  |  |
| Evaluate and decide on game engine | 9 | Graphic artist, Dev1, Dev2, Game Designer, PM | 45 |  |
| Order development hardware and software | 6 | PM | 6 |  |
| **Plan incremental development strategy** | **42** |  |  |  |
| Develop level environment layouts | 26 | Graphic artist | 26 |  |
| Develop initial character sprite appearance | 3 | Animator, Game Designer | 6 |  |
| Define animation requirements, by feature-set | 13 | Animator, Game Designer, Dev1, Dev2 | 39 |  |
| **Cycle Planning** | **21** |  |  |  |
| Develop feature-set incremental plan | 3 | Dev1, Dev2, PM | 9 |  |
| Assign feature-sets to cycles | 2 | Dev1, Dev2, Dev3, Dev4, Dev5, Dev6 | 12 |  |
| Develop detailed cycle 1 feature-breakdown | 6 | Dev1, Dev2 | 18 |  |
| Develop feature-breakdown for cycles 2 | 3 | Dev3 | 3 |  |
| Develop feature-breakdown for cycles 3 | 2 | Dev4 | 2 |  |
| Develop feature-breakdown for cycles 4 | 3 | Dev5 | 3 |  |
| Develop feature-breakdown for cycles 4 | 2 | Dev6 | 2 |  |
| **Estimation & planning** | **12** |  |  |  |
| Produce effort estimate | 2 | PM | 2 |  |
| Produce budget estimate | 6 | PM | 6 |  |
| Agree estimates with client | 3 | PM | 3 |  |
| Project plan signoff | 1 | PM | 1 |  |
| **Cycle 1 (includes planning / Build)** | **108** |  |  | **233** |
| **Cycle 1 Planning** | **6** |  |  | **48** |
| Identify Cycle objectives | 5 | PM, Animator, Dev1, Dev 2, Dev3, Dev4, Dev5, Dev 6 | 40 |  |
| Create next Cycle Plan | 1 | PM, Animator, Dev1, Dev 2, Dev3, Dev4, Dev5, Dev 6 | 8 |  |
| **Cycle 1 Build (Development)** | **102** |  |  | **185** |
| **F1. As a player, I will be dropped into the spaceship at the beginning of the round** | **8** |  |  |  |
| **F1.1 While awaiting the maximum player count, the player will be placed into a spaceship lobby while awaiting more players** | **6** |  |  |  |
| **F1.1.1** When players join the match, the counter will increase showing how many players are remaining to start the match | 2 | Dev1, Graphic artist | 4 |  |
| **F1.1.2** When the maximum count of players are met, the game will automatically start | 2 | Dev2 | 2 |  |
| **F1.1.3** The host of the game has the ability to start the game at anytime after four people have joined the game lobby | 2 | Dev3 | 2 |  |
| **F1.2 After the host starts the game, I will be brought into the game map** | **2** |  |  |  |
| **F1.2.1** When the host hits start, a countdown will appear on the screen | 1 | Dev1, Graphic artist | 2 |  |
| **F1.2.2** When the countdown hits zero, all players will start in the cafeteria room on the map | 1 | Dev2, Animators, Graphic artist | 3 |  |
| **F2. As a player, I can interact with objects within the game map** | **20** |  |  |  |
| **F2.1 As a player, I cannot run through walls** | **3** |  |  |  |
| **F2.1.1** The system will not move the character through the wall | 1 | Dev3, Animators | 2 |  |
| **F2.1.2** The system will continue to display the character animation if running, but not move the character through the wall | 2 | Dev4, Graphic artist | 4 |  |
| **F2.2 As a player, I cannot run through other players within the game** | **4** |  |  |  |
| **F2.2.1** The system will not move the character through other players | 2 | Dev5, Animators | 4 |  |
| **F2.2.2** The system will continue to display the character animation if running, but not move the character through other characters | 2 | Dev6, Graphic artist | 4 |  |
| **F2.3 As a player, I cannot run through physical objects within the game** | **4** |  |  |  |
| **F2.3.1** The system will not move the character through physical objects | 2 | Dev1, Animators | 4 |  |
| **F2.3.2** The system will continue to display the character animation if running, but not move the character through objects | 2 | Dev2, Graphic artist | 4 |  |
| **F2.4 As a player I can interact with objects within the game to perform tasks** | **9** |  |  |  |
| **F2.4.1** The task that can be interacted with will be highlighted in yellow | 2 | Dev3, Animators | 4 |  |
| **F2.4.2** A player can only interact with an object when they are within range of the task | 2 | Dev4, Animators | 4 |  |
| **F2.4.3** When a player is within range of the object and clicks on the task, the task screen will be displayed for the player | 1 | Dev5, Graphic artist | 2 |  |
| **F2.4.4** When the player completes the task, the task will no longer be highlighted on the screen | 3 | Dev6, Graphic artist | 6 |  |
| **F2.4.5** When the player completes the task, the task will no longer be enabled to be clicked. | 1 | Dev1 | 1 |  |
| **F3. As a player, when I click the directional pads on my keyboard, I should see the character move on the screen** | **20** |  |  |  |
| **F3.1. When the player clicks on the up directional key, the player will move up in the game** | **5** |  |  |  |
| **F3.1.1** When the up button is pressed down, the character will move up on the screen | 2 | Dev2 | 2 |  |
| **F3.1.2** When the up button is released, the character will stop moving on the screen | 3 | Dev3, Graphic artist | 6 |  |
| **F3.2. When the player clicks on the down directional key, the player will move down in the game** | **5** |  |  |  |
| **F3.2.1** When the down button is pressed down, the character will move down on the screen | 2 | Dev2 | 2 |  |
| **F3.2.2** When the down button is released, the character will stop moving on the screen | 3 | Dev3, Graphic artist | 6 |  |
| **F3.3. When the player clicks on the left directional key, the player will move left in the game** | **5** |  |  |  |
| **F3.3.1** When the left button is pressed down, the character will move left on the screen | 2 | Dev2 | 2 |  |
| **F3.3.2** When the left button is released, the character will stop moving on the screen | 3 | Dev3, Graphic artist | 6 |  |
| **F3.4. When the player clicks on the right directional key, the player will move right in the game** | **5** |  |  |  |
| **F3.4.1** When the right button is pressed down, the character will move right on the screen | 2 | Dev2 | 2 |  |
| **F3.4.2** When the right button is released, the character will stop moving on the screen | 3 | Dev3, Graphic artist | 6 |  |
| **F4. As a player that is the imposter, I will be given the ability to sabotage tasks that are on the map** | **11** |  |  |  |
| **F4.1 As the imposter, I shall be able to see a list of all available tasks that can be sabotaged** | **4** |  |  |  |
| **F4.1.1** When the imposter clicks on a task, an alarm will sound for all players | 2 | Dev1 | 2 |  |
| **F4.1.2** When the imposter clicks on a task, an on-screen alert will appear for other characters stating which task is being sabotaged | 2 | Dev2, Graphic artist | 4 |  |
| **F4.2 As the imposter, I can win the game if the sabotaged task is not revived from the crewmate players** | **7** |  |  | **10** |
| **F4.2.1** If the sabotaged task is not revived by the crewmates within sixty seconds, the imposter will win the round | 2 | Dev3 | 2 |  |
| **F4.2.2** If the sabotaged task is revived by the crewmates within sixty seconds, the countdown clock will be removed from the screen | 3 | Dev4, Graphic artis | 6 |  |
| **F4.2.3** If the sabotaged task is revived by the crewmates within sixty seconds, the alarm sound will be stopped. | 2 | Dev5 | 2 |  |
| **F5. As a player I will be given a Heads-Up Display (HUD) to give me available options within the game to select** | **37** |  |  |  |
| **F5.1 As a crewmate player, I will have an icon to select for calling an emergency meeting** | **10** |  |  |  |
| **F5.1.1** The icon will only be clickable once per game. | 3 | Dev6 | 3 |  |
| **F5.1.2** When the icon is clicked, it will sound an alarm | 3 | Dev1 | 3 |  |
| **F5.1.3** When the icon is clicked, it will bring all characters back to the starting point on the map | 2 | Dev2 | 2 |  |
| **F5.1.4** When the icon is clicked, it will enable the chat feature within the game for characters to discuss | 2 | Dev3, Animators | 4 |  |
| **F5.2 As a crewmate player, I will have an icon to leave the game** | **5** |  |  |  |
| **F5.2.1** When the icon is clicked, the crewmate player can confirm leaving the game | 3 | Dev4, Dev5 | 6 |  |
| **F5.2.2** When the icon is clicked, the crewmate player can cancel the request to leaving the game | 2 | Dev4, Dev5 | 4 |  |
| **F5.3 As a crewmate player, I will have an icon for performing a task** | **11** |  |  |  |
| **F5.3.1** The icon for performing a task will be enabled when they are within 5 feet of the task | 2 | Dev1 | 2 |  |
| **F5.3.2** The icon for performing the task will be disabled once the player completes the task | 3 | Dev1, Graphic artist | 6 |  |
| **F5.3.3** If the player closes the task, the icon will remain enabled | 3 | Dev2 | 3 |  |
| **F5.3.4** When the player clicks on the icon, it will bring up the appropriate task for the player to complete | 3 | Dev3 | 3 |  |
| **F5.4 As an imposter, I will have an icon for sabotaging a task** | **6** |  |  |  |
| **F5.4.1** When the icon is clicked, the imposter will have a map pop up | 3 | Dev1 | 3 |  |
| **F5.4.2** The map that is displayed, will show all of the available tasks that can be sabotaged | 3 | Dev5, Graphic artist | 6 |  |
| **F5.5 As imposter, I will have an icon to leave the game** | **5** |  |  |  |
| **F5.5.1** When the icon is clicked, the crewmate player can confirm leaving the game | 3 | Dev6, Graphic artist | 6 |  |
| **F5.5.2** When the icon is clicked, the crewmate player can cancel the request to leaving the game | 2 | Dev1, Graphic artist | 4 |  |
| **Integration Test** | **6** |  |  |  |
| Integrate all features into working prototype | 3 | Dev1, Dev2, Dev3, Dev4, Dev5 | 15 |  |
| Test & fix prototype | 3 | Dev1, Dev2, Dev3, Dev4, Dev5 | 15 |  |
| **Cycle Review** | **5** |  |  | **30** |
| Evaluate prototype with client | 2 | Dev1, Dev2, Dev3, Dev4, Dev5, PM | 12 |  |
| Review feature priorities | 2 | Dev1, Dev2, Dev3, Dev4, Dev5, PM | 12 |  |
| Revisit game/play requirements | 1 | Dev1, Dev2, Dev3, Dev4, Dev5, PM | 6 |  |
| **Task Name** | **Task Duration (Cycle 1 assigned 10 complexity-points)** | **Resource Names** | **Complexity-points Justification** | |
| Cycle 2 | 4.8 | PM, Devs, Animators, Graphic artists, Game Designer | Cycle 1 has 6 objective feature-sets, each objective feature-set worth 1.6 complexity-points, since cycle 2 has 3 objective feature-sets, cycle 2 has 4.8 complexity-points. | |
| Cycle 3 | 6.4 | PM, Devs, Animators, Graphic artists, Game Designer | Cycle 1 has 6 objective feature-sets, each objective feature-set worth 1.6 complexity-points, since cycle 3 has 4 objective feature-sets, cycle 3 has 6.4 complexity-points. | |
| Cycle 4 | 4.8 | PM, Devs, Animators, Graphic artists, Game Designer | Cycle 1 has 6 objective feature-sets, each objective feature-set worth 1.6 complexity-points, since cycle 4 also has 3 objective feature-sets, cycle 4 also has 4.8 complexity-points. | |
| Cycle 5 | 3.2 | PM, Devs, Animators, Graphic artists, Game Designer | Cycle 1 has 6 objective feature-sets, each objective feature-set worth 1.6 complexity-points, since cycle 5 has 2 objective feature-sets, cycle 2 has 3.2 complexity-points. | |

## 7. Produce a Microsoft Project Plan for the project as a whole

This section includes the describes the Microsoft Project Plan based on the Work Breakdown Structure (WBS) to schedule the Cycle 1 tasks. Through applying the Agile Project Framework, each high-level feature will be scoped for development in a three-month period. This three-month period encapsulates the start and end points for the respective feature. Further, the design and development work will be planned and executed in two-week sprints. The Microsoft Project Plan includes the effort and duration estimates for all Cycles. Also, in order to keep the design and development teams on a regular cadence to deliver software, Vulnerability Assessment and Testing is only conducted every 24-weeks. Further, The Business Analysts and Technical Architect are continuously eliciting and documenting requirements as well as the design artifacts. For these reasons, the Business Analysts and Technical Architect are abstracted out of the Sprint Cycles but are working throughout the 12-week cycle. Also, the team of four Frontend Developers working full-time, except for 4 weeks, in the project give our team the confidence this Project Plan will be executed in 11 months. This Project Plan assumes the Pre-Development tasks, such as acquisition, hiring, and setting up infrastructure, are out of scope for this assignment. The Microsoft Project Plan can be found in the following file: SE638-Grp-A5.mpp. The respective Labor Category information is included in the following file: SE638-Grp3-A5-Human-Resources.xlxs.

## References

https://among-us.fandom.com/wiki/Visual\_Tasks