CS307 - Team 4

Hero TD

Sprint1 Planning Document

Team Members:

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Sprint 1 Overview

Overview :

During This sprint, we are going to focus on developing the Main Menu UI, handling of user information from client to server to database, creating the database, and developing a prototype of a single player game setting. Both the UI and the prototype game are developed in Unity and C#. The database being used is MySQL and is to be connected to the client via a server developed in Node.js. The basic features, towers, monsters, and game map, are to be implemented in the prototype design from which later varieties of these features can be introduced.

- Prototype - Prototyping
    - Establishing Mechanics, Becoming familiar with Unity
    - Designing Game Map Structure
    - Build a prototype and all the interfaces needed for further game design
    - Build a basic Menu scene that directs the player to the main game
    - Build a server that matches two logged-in players
    - Build a database to store user data and check log in information
    - (Optional) Build a UI for multiplayer game
- Account Database
- UI Development
- Establishing Stylization of Game -

Scrum Master: Rongxi Zhang

Meeting Days: Tuesday 5:30 pm, Wednesday 6:00 pm

Risks and Challenges :
Some challenges we are gonna face during our first will be the setup for initial development environment, connecting the work of the whole group, and establishing the database and server. Most of us have little experience with Unity, and we have to spend lots of time being familiar with Unity, so the time for us to implement the user stories is very tight.

Sprint 1 Detail

User Story 1:

- As a user, I would like to have my own account name and password in this game and be able to set/reset my own account name and password in this game.

Task Number	Description	Time	Task Owner
1	Create Title Screen UI for login and starting game.	10hrs	Li, Xihao; Han, Mingqi
2	Connect Title Screen UI to game screen.	1hr	Li, Xihao
3	UI for setting/resetting password and Username.	2hrs	Nick Meier
4	Server that process Login/Logout requirements.	5hrs	Li, Xihao; Han, Mingqi
5	Connect server to database to store user information.	2hrs	Li, Xihao; Cai, Mingyong
6	Unit test- correct and incorrect input, checking for the validity of username and password. printing error messages for situation like "no internet connection", "	2hrs	Han, Mingqi

Acceptance criteria:

- Given that the application starts, the login page should appear.

- Given that the application works normally, when the user click on the "register" button, the appropriate response should be given.

- Given that the application works normally, when the user click on the "login" button, the appropriate response should be given.

User Story 2:

- As a user, I would like my account name to be unique, which means others can't have the same account name as mine.

Task Number	Description	Time	Task Owner
1	Server has functionality of checking if user is trying to create a username that is already in the database	2hrs	Li, Xihao
2	Servers tells the client that he/she has to change his/her username	2hrs	Han, Mingqi
3	Client displays informations for users conveying that they are not allowed to use the username.	1hr	Nick Meier
4	Client recommends a different username to the user.	3hrs	Han, Mingqi

5	Unit test- correct and incorrect input, repeat of usernames, validity of recommended username, etc	2hrs	Li, Xihao

Acceptance criteria:

- Given that the application works normally, when the user try to register with an existing username, the error message will shows.

- Given that the application works normally, when the user has no idea about what a username should be, a server will recommend the user an unique username.

- Given that the application works normally, when the user click on the "login" button, the appropriate response should be given.

User Story 3:

- As a user, I would like to be able to reset my password and username.

Task Number	Description	Time	Task Owner
1	Build a email generator to send email to the user's email and asking the users to change password.	2	Li, Xihao
2	Create options in UI for changing password	1	Nick Meier

3	Build functionality in server to check if a player uses the new password	3	Li, Xihao

Acceptance criteria:

- Given that the email address is correct, sending an email to notify the user to change the password

- Given that the UI functions, when the user reset the password, delete the password from the database and pair the new password with the existing username

User story 4:

- As a user, I would like to be able to navigate through the application without significant difficulties.

Task Number	Description	Time	Task Owner
1	Display the navigation to the game with texts	3	Li, Xihao
2	Unit test- correct and incorrect input, any flawed indency of the texts, etc	2	Han, Mingqi

Acceptance criteria:

- ● Given the program works fine, displays the error message if the

  network is not connected

User story 5:

- As a user, I would like to be able to access Guide, Play pages through the menu.

Task Number	Description	Time	Task Owner
1	create relevant components on the UI	3	Nick Meier
2	Client receives option for either single player mode or multiplayers mode	3	Han, Mingqi
3	Unit test- correct and incorrect input, flawed indency, correctness of displaying	2	Li, Xihao

Acceptance criteria:

- ● Given the network works fine, display error message if multiplays mode

  doesn't work and recommend single player mode

User story 6:

- As a user, I would like to be able to access the "What's New" and "FAQ" pages to

  view the recent updates.

Task Number	Description	Time	Task Owner
1	Create "What's New?" Button	2hrs	Han, Mingqi

	with page on title screen		
2	Create "FAQ" page and button on title screen	2hrs	Li, Xihao

Acceptance criteria:

- Given the network works fine, printout the same "no news" if no news are added or no updates are performed.

User story 7:

- As a user, I would like to see different game-related background picture in the menu page

Task Number	Description	Time	Task Owner
1	Create Menu UI in Unity	2hrs	Nick Meier
2	Connect Menu UI to game and titlescreen	2hrs	Li, XIhao
3	Connect Menu UI to Settings UI	2hrs	Han, Mingqi
4	Connect Menu UI to Player's Guide	2hrs	Nick Meier
5	Unit test- correct and incorrect input, correctness of displayed pictures, any distortion	2hrs	Han, Mingqi

Acceptance criteria:

- Given that the game starts normally, when the Login/Main menu UI displays, different game-related pictures show up as background.
- Given that the game starts normally, when user clicks on "change picture", the background changes correctly.
- Given that the game starts normally, when user take screenshot in the game, the screenshot can be the background picture of UI.

User story 8:

- As a user, I would like to see my current resource, life and level. Also i want to check the status of monsters by clicking on them.

Task Number	Description	Time	Task Owner
1	Create a Player class	5	Xuan Zhao
2	create a monster class	5	Rongxi Zhang`
3	Create information display class	2	Mingyong Cai
4	Create information display bar component	3	Mingyong Cai
5	Test: info bar correctly displays the information	2	Xuan Zhao, Rongxi Zhang, Mingyong Cai

Acceptance Criteria:

- When the game start, Info bar correctly appears on the game scene.

- ● When the game start, Info bar correctly displays the information.

- ● A prototype monster can be created correctly and clicked to review.

User story 9:

- As a user, I would like to build towers or other similar structures to defend a
  nexus, or base of operations, then proceed through rounds and obtain upgrades
  in the form of new towers or changes to old towers.

Task Number	Description	Time	Task Owner
1	Create a Tower class script	5	Xuan Zhao
2	create a Tower prefab	7	Rongxi Zhang
3	Create a sample tower object with 1 upgrade	7	Mingyong Cai
4	Attaching the script to prefab and debug	3	Xuan Zhao
5	Create icon prefab with scripts	3	Xuan Zhao
6	Create a basic game UI scene with icons, info bars and a basic map	10	Mingyong Cai, Rongxi Zhang
7	Write the Tower Menu script	4	Rongxi Zhang
8	Test: The player can build and upgrade tower	2	Xuan Zhao
9	Complete the	5	Xuan Zhao

	Tower Menu prefab		

Acceptance Criteria:

- When clicking on corresponding icon, the tower can be selected.

- When the game starts, Icons are correctly displayed on the game scene.

- When the game starts, the tower can be planted on the map.

- When clicking on the tower and functions correctly, the tower menu pops up.

- When clicked on the tower, the tower can show its range.

- When monsters enter the range, the tower can attack a sample.

- The attacks and building actions of a tower has basic and proper VFX

- The attacks and building actions has proper and basic Sound FX

User story 10:

- As a user, I would like to defend my nexus against waves of various enemy types, and receive rewards in the form of in-game currency or upgrades when finishing a level, round, or wave of enemies.

Task Number	Description	Time	Task Owner
1	Create a Monster class script	3	Xuan Zhao
2	create a Monster prefab	4	Rongxi Zhang
3	Create a sample monster object	4	Mingyong Cai
4	Attaching the script to prefab and debug	3	Xuan Zhao

5	Create a Game Controller class	5	Xuan Zhao
6	Build the Main Game scene	10	Xuan Zhao, Mingyong Cai, Rongxi Zhang
7	Test the main game and debug	10	Xuan Zhao, Mingyong Cai, Rongxi Zhang

Acceptance Criteria:

- Given the game start, when each battle begins, then a wave of monsters spawn correctly.
- Given the game start, when each battle begins, the monsters can find its way to the exit
- Given the game start, when each battle begins, towers can only be built on the areas that are allowed
- Given the game start, when each battle begins, monsters correctly loses hp when getting hit by the tower
- Given the game start, when informed by the player, all towers can change its target preference.
- Given the game start, when the monsters lose all hp, Monsters correctly despawns.
- When a monster hits the base, the player's hp correctly decreases.
- When the player loses all his hp, the game ends and proper information displays

Backlog

a. **Functional (Account features, UI features, settings features, game features, multiplayer features)**

    i. **Account**

        1. As a user, I would like to have my own account name and password in this game.

        2. As a user, I would like my account name to be unique, which means others can't have the same account name as mine.

        3. As a user, I would like to be able to, optionally, change my username.

        4. As a user, I would like to be able to reset my password.

        5. As a user, I would like to be able to easily recover a lost password through email.

        6. As a user, I would like to be able have my scores and game stats stored in my account.

        7. As a user, I would like to have an account page to display my information and scores.

        8. As a user, I would like to link my account with Facebook.

        9. As a user, I would like to link my account with Twitter.

    ii. **User Interface (menu)**

        1. As a user, I would like to be able to navigate through the application without significant difficulties.

        2. As a user, I would like to be able to access Setting page through the menu.

3. As a user, I would like to be able to access Play page through the menu.

4. As a user, I would like to be able to access Guide page through the menu.

5. As a user, I would like to be able to access the "What's New" page to view the recent updates.

6. As a user, I would like to see different game-related background picture in the menu page.

iii. **User Interface (stage)**

1. As a user, I would like to see my current resource, life and level.

2. As a user, I would like to navigate through a large map by moving the cursor to the edge of the map

3. As a mac/ios user, I would like to magnify a part of the map by the corresponding finger gesture.

4. As a user, I would like to check the status of monsters by clicking on them.

5. As a user, I would like to see a pop-up menu of tower that has all the operations I can do to it when clicking on the tower.

6. As a user, I would like to access the shop anywhere in the game.

7. As a user, I would like to be able to access the shop by shortcut key.

8. As a user, I would like to check the user guide by shortcut key.

9. As a user, I would like to check the user guide by click the icon on the screen.

iv. **Video/Graphical Setting**

1. As a user, I would like to have a menu dedicated to adjusting video or graphic settings in the application.
2. As a user, I would like to adjust the resolution/size of the application window.
3. As a user, I would like to adjust the audio effects of the application.
4. As a user, I would like to adjust the game to Window mode.
5. As a user, I would like to adjust the game to Full-screen mode.
6. As a user, I would like to adjust the amount of graphical effects that appear during gameplay, such as particle effects.

v. **Gameplay**

1. As a user, I would like to build towers or other similar structures to defend a nexus, or base of operations.
2. As a user, I would like to select my unique hero tower.
3. As a user, I would like to proceed through rounds and obtain upgrades in the form of new towers or changes to old towers.
4. As a user, I would like to play in a variety of map types and levels.
5. As a user, I would like to defend my nexus against waves of various enemy types.
6. As a user, I would like to receive rewards in the form of in-game currency or upgrades when finishing a level, round, or wave of enemies.

7. As a user, I would like to achieve extra rewards, such as cosmetics, from a lottery mini-game.

vi. **Singleplayer**

1. As a user, I would like to play a game in infinite mode in which there are endless waves of enemies to fight against for the sake of defending my nexus.

2. As a user, I would like to play a story game-type in which there is dialogue from characters which presents a story related to the normal game's experience.

3. As a user, I would like to have a tutorial or user's guide to learn how to play the game and the different uniquities that come with it.

vii. **Multiplayer/Online**

1. As a user, I would like to play this game with other people online.

2. As a user, I would like to play this game with friends I have on social media, such as Facebook or Twitter.

3. As a user, I would like to have a ranking system for online matches or competitive games so that I do not play against players that are excessively above or below my skill level.

4. As a user, I would like to have a chat room that would let me communicate with other players.

5. As a user, I would like to check the ranking list for all the players in the game.

6. As a user, I would like to have a chatting channel to chat with my allies.

7. As a user, I would like to have a chatting channel to chat with all players in the current game, including allies and opponents.

8. As a user, I would like to have users punished for bad behaviour, for example insulting other players in chatroom.