

CMPT276 Project Proposal

[Team members]

Hyeyoung Ahn (Hailey) - 301383815

Fazal Dad Warraich - 301319108

Quoc Tuong Tran - 301297287

Khanh Long Tran - 301354571

Georgios Giovanis - 301254694



<1.0 Abstract>

Special Fortification Unit (SFU) is a web-based, real-time, multiplayer survival game (with a twist!) set at SFU Burnaby. Four students come to SFU for classes on a snowy day. Due to heavy snowfall, their classes get cancelled, leaving the students stranded on campus. Then, some mysterious enemies attack! Dear SFU students, we know you are already burned out from assignments and exams, but please stay safe from the evil enemies! The game features playable maps based on the SFU Burnaby campus and four playable characters cooperating with each other. Mysterious enemies with different attack patterns, as well as intuitive leveling, health, and money systems provide an excellent experience for players.

<2.0 Overview>

Special Fortification Unit (SFU) is a game aimed at current SFU students, faculty members, staff, alumni, and everyone else who would love to play a survival game on SFU Burnaby campus.

The main purpose of this application is for user entertainment. This game is designed to give current SFU students and faculty an entertaining experience as they explore the SFU campus in a new setting. Alumni and

graduates from other universities will be given a nostalgic experience as they relive their best moments and worst fears from school.

A brief competitive analysis: Different from other games on the market, this game looks to capture some fundamental elements of being a student at SFU and transfer them into a video game. By offering a unique aesthetic and setting, this game looks to differentiate itself from other survival games with its more personalized feel.

In order to succeed, players need to survive the duration of the blizzard and the anxiety of failing to enemies. Everything dear is at stake if the students don't prevail! So what's it going to be - give up and face humiliation or fight till the end and become distinguished hero?! It is now for you and three friends to decide!

<3.0 Features>

<3.1 Login Screen Mockups>

Once the user is directed to the website, the log-in page pops up. The user can choose to any of the following options. After choosing, the user is redirected to the 'Matchmaking Screen' <3.2>.

3.1.1 Play as guest

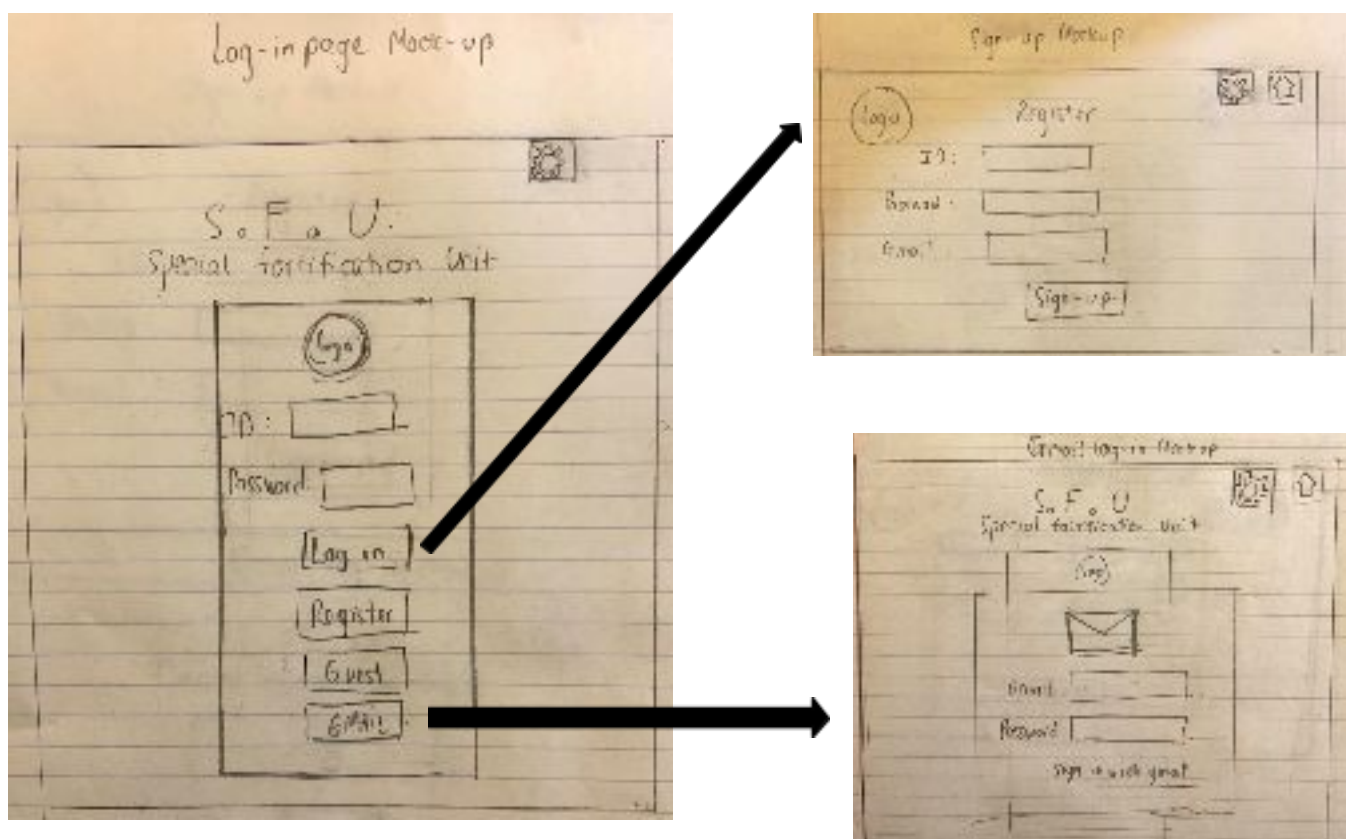
A username such as 'Guest093763243526442342' will be given, and then the user can proceed to play. After playing, the user is given the option to register for a new account to preserve their progress.

3.1.2 Sign up as a new user

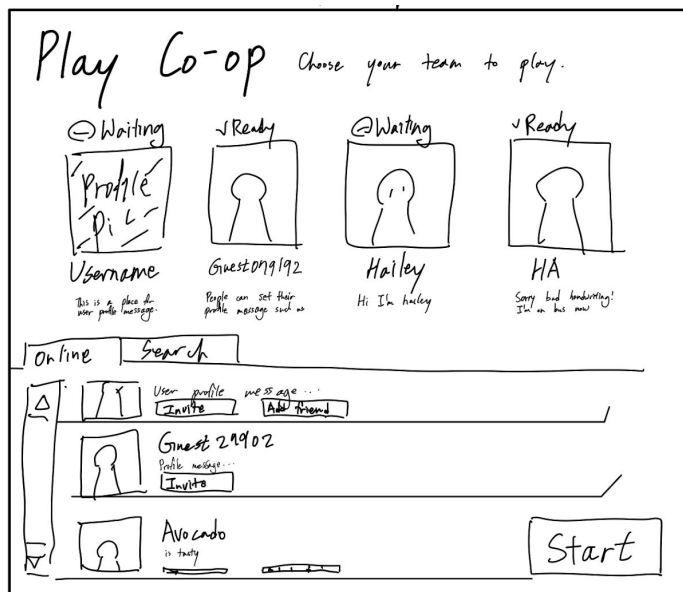
A new account will be created. Sign-up requires: Username, password, and e-mail.

3.1.3 Sign in to an existing account

User will have access to their previously saved data and scores linked to their account.



<3.2 Matchmaking Screen>



The matchmaking screen shows:

3.2.1 Current team

Displays all other users in the team and their status.

3.2.2 List of people online

This shows the list of other people currently playing the game. Users can send game invites to other people here.

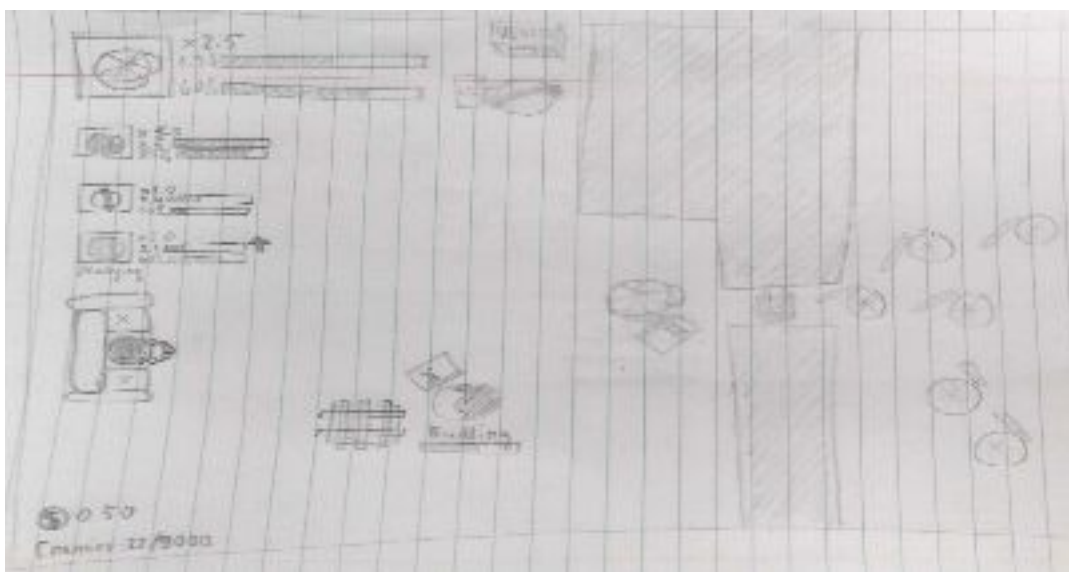
3.2.3 'Search', where users can search for other players by username.

This is used when users has a friend(s) to play with. They can find other players by typing their username and invite them to the current team.

3.2.4 'Start' button

When all the players have clicked the start button, the game starts.

<3.3 In-Game>



The game is composed of the following elements:

<3.4 Game canvas (map)>

The actual game. Displays a portion of the map **(3.4.1)** containing the current user **(3.4.2)**, their teammates **(3.4.3)**, and enemies **(3.4.4)**. The user is free to explore the map and interact with their teammates and enemies as they choose.

3.4.1 Map

The map is composed of the following:

3.4.1.1 Walls

Provide barriers within the map that both player and enemy cannot move through.

3.4.1.2 Interactable objects

Player can build and upgrade towers to automatically attack the enemies, etc.

3.4.1.3 Destructible Terrain

Destructible doors, walls, etc. will be placed fixedly into the map to dictate the user and their teammate's progression through the game environment.

3.4.2 User Character

User is placed in the middle of the game canvas, where they can move around with movement keys (default {W: up}, {A: left}, {S: down}, {D:right}). The user can aim, attack, or interact with objects by moving and clicking the mouse. The user can press escape to access the game settings.

3.4.3 Teammates

Teammates move around the map as they please. Teammates cannot damage each other (friendly fire may be considered for future iterations). Teammates can be revived if they fall below a critical level of health.

3.4.4 Enemies

Enemies of different types are non-playable characters that "fight" the players. Enemies will move towards the closest player and deal damage to them until the player's health is empty or the enemy is defeated. The behavior of enemies may vary depending on their types. If a destructible obstacle is blocking an enemies path to a player, they will try to destroy it .

<3.5 Heads-up Display>

Displays information about the current state of the game:

3.5.1 User data

Displayed at the top left of the screen. Includes appearance, health bar, current stats and level, money, and experience.

3.5.2 Game state

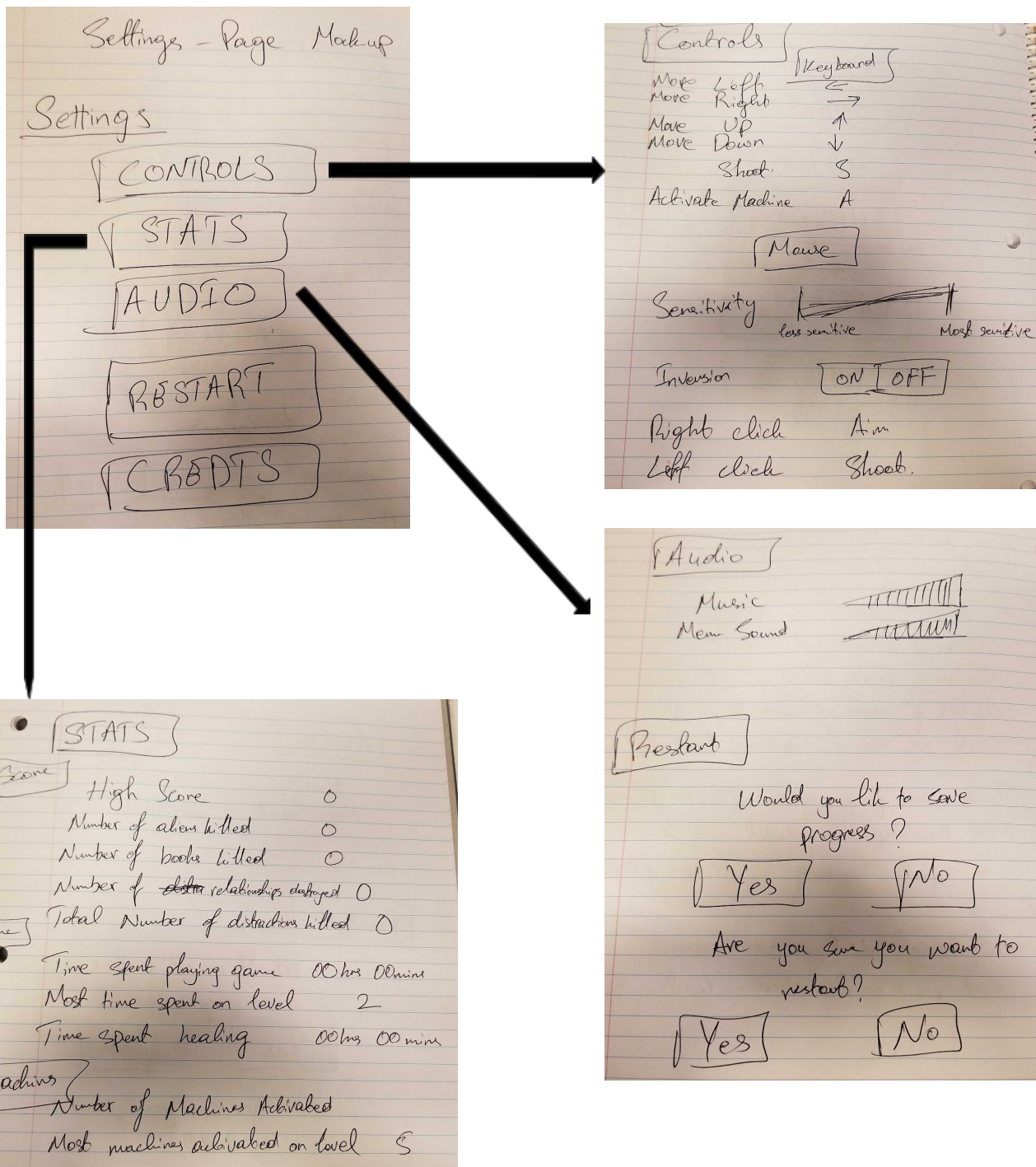
3.5.2.1 A tiny map-overview on the side of screen with enemy locations marked

3.5.2.2 Enemy counts (number of alive enemies)

<3.6 Team chat>

A small display box for chatting with teammate displayed at the bottom-left of the screen.

<3.7 Settings>



Users can edit the game settings here. Editable settings include:

3.7.1 Volume level

This option controls the game volume.

3.7.2 Keyboard bindings

Allows the player to change which keys do what.

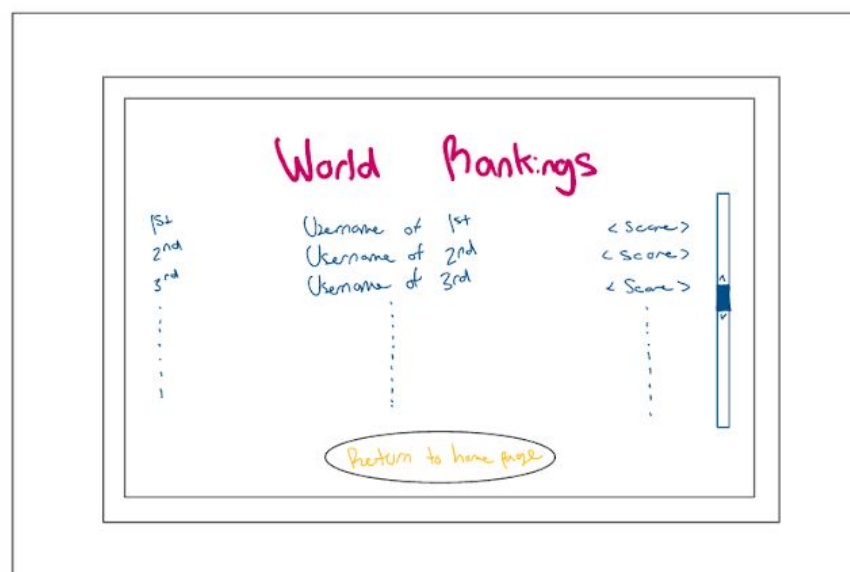
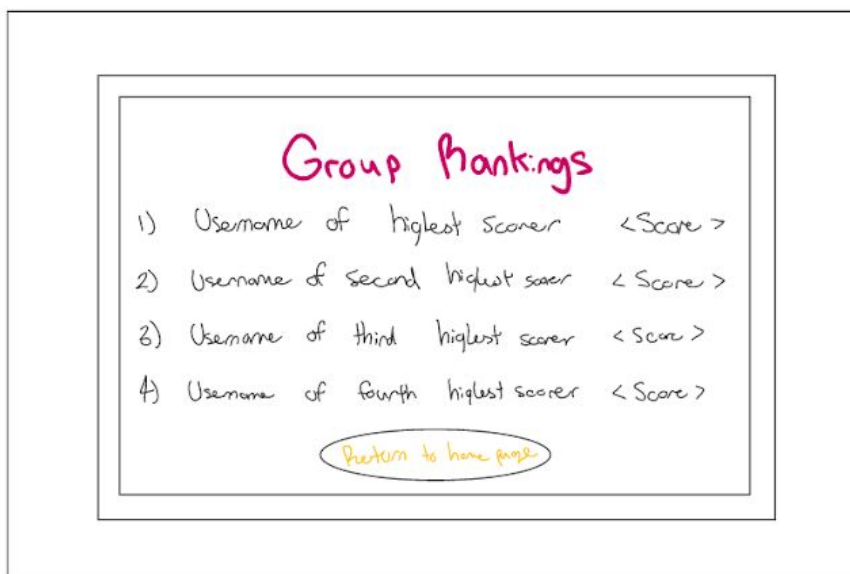
3.7.3 **Retake?

This screen shows when player fails in the game. Users can restart the game by choosing 'Retake'.

**Listed as Restart in the above mockup

<3.8 Ranking Board>

Ranking board will be accessible from the matchmaking screen (world rankings) and end-game screen (group and world rankings).



3.8.1 Total ranking

The total ranking from all players in history.

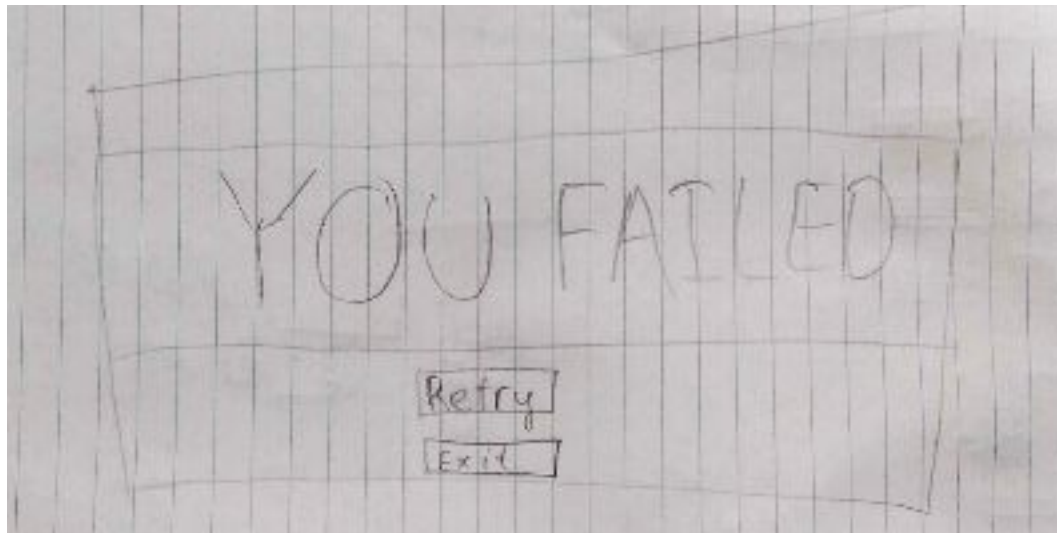
3.8.2 Group ranking

The specific ranking amongst users in the group.

<3.9 Sound>

To be implemented using non-copyright songs (NCS) and open source sound effects.

<3.10 Game over>



This screen shows when user died. Player can either restart or exit the game.