Battle Simulator: Game Design Document

Battle simulator is a game where two teams fight it out. It consists of two teams, Team Blue and Team Red. Team Blue is your team, and Team Red is the opponent team. Each team consists of 5 units.

Unit in-game.

Each unit in-game has the following properties

1. HP: Health points, when they become zero unit dies.
2. Attack: Damage a unit does.
3. Attack Speed: Speed at which a unit attacks.
4. Attack Range: Range at which unit attacks.
5. Movement Speed: Speed at which a unit moves.

AI Design:

1. All units can see every unit in the game, friendly and enemy both.
2. Each unit will choose a random target from the enemy and start the movement towards the acquired target
3. The unit will move toward that target until it comes into attack range.
4. The unit will start the attack and do damage based on the attack speed and attack.
5. It keeps on doing damage until the unit dies, and then it will acquire another random target until all the enemy unit dies.
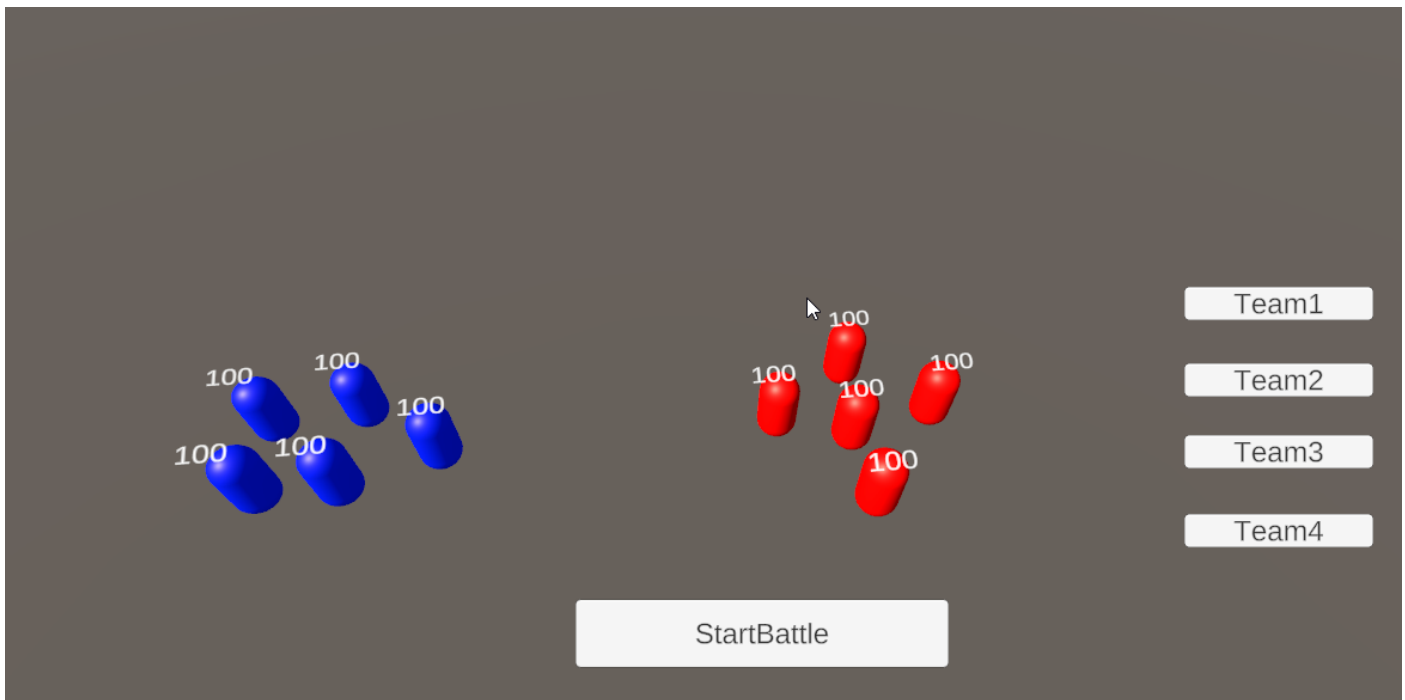
Local Avoidance and Path Finding

1. The unit will move directly towards its target, and there is no need to implement any Path finding logic or local avoidance for now.

Initial Setup

1. The initial setup of the team is a 3X3 grid where you can define which grid position a unit is on. One grid can only hold one unit, and each unit can only take one grid slot.

- This is the landing screen of the game
- The left side is your team and is read from the config file.
  - You should be able to change all the unit properties and the initial setup.
  - The right side is the enemy team and is also read from the config file.
  - You can also change the enemy team by clicking on Team 1, Team 2, team 3, etc.
  - The list is also read from the config file, and we should be able to add new teams, and the list should adapt to that.
  - The list should also support scrolling if the content is more than the viewport.
- The Start battle should hide the UI, and the battle will begin.
- Each unit has the HP number of top and should decrease as they receive damage.
- THE UNIT WILL DISAPPEAR when HP is zero; you don't have to add any transitions or death effects.
- After the battle end, it should display a victor screen and the option to go to the main menu to start another battle.
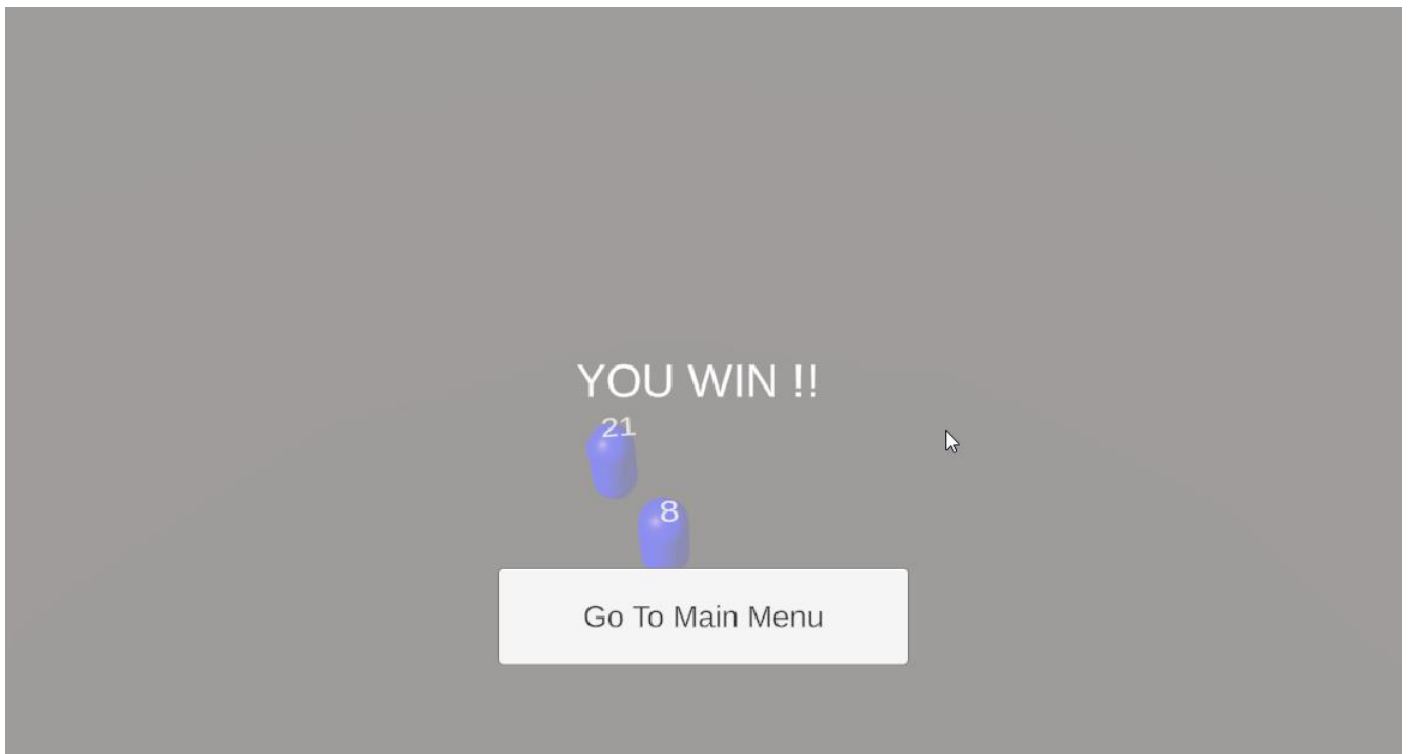
Technical Specs

1. You are required to use the ECS pattern to implement the above game.
2. It's optional to use Unity ECS, but it's highly encouraged.
3. It is optional to use Command Buffers to achieve multithreading but highly recommended.
4. If you are using multithreading, you must send the profiler screenshot explaining how it works.
5. You can use scriptable objects, JSON, or XML to implement configurations.
6. If you didn't have time to implement any performance technique, please mention it in the document.

Things to ignore

1. You are not required to implement any projectile type of damage.
2. You are not required to implement any UI transitions.
3. You don't have to worry about the Rendering Performance of the game.
4. You don't have to implement any character animations; using capsules as shown in the image is fine.

Best of Luck

Savvy Games Studios