Game Design - Battle Royale

This page provides the reference for the required game design elements of the Battle Royale game.

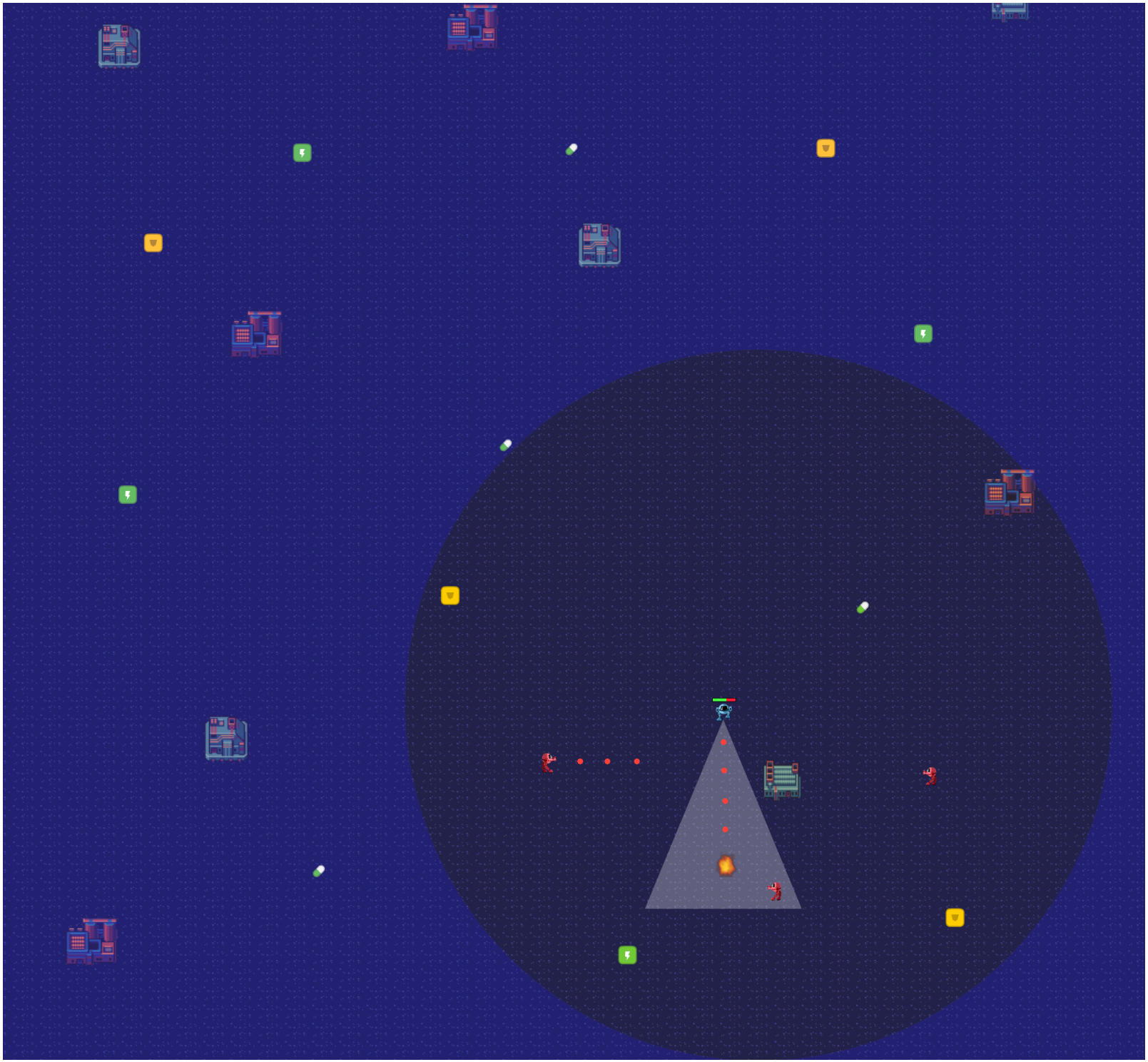
Gameplay Story

- When I first visit the web site for the game, I see a menu that allows me to join the game lobby, create a new user, set configurable options, view high scores, or view game credits.
  - When I visit the high scores, I see a ranked list of the top players that can be organized by any of the following...
    - Game position ranking; this is a scoring (TBD) based on the final ranking of the player when they are eliminated (or win) from the game.
    - Average # of players eliminated per game.
    - Average damage given per game.
    - Shot accuracy (percentage).
- The web site for the game has a page that allows me to register a new player, or sign in with an existing player.
  - When I register, I am required to enter a character name and password; I have to enter the password in two fields and they must match.
  - When I sign in, I am required to enter a correct matching character name and password.
- I enter a lobby where I can see the names of other players and everyone can send and receive chat messages. If I want, I can leave the lobby before the game starts.
- There is a countdown timer that starts when a minimum # (?) of players have joined, when the timer hits 0, the deployment part of the game starts.
- During deployment, I see an overview of the gameplay map, with the current location of the vehicle in which everyone starts. As the vehicle moves over the map, I have the ability to choose where I enter the battle arena; I have no weapons upon entering the arena.
- Upon entering the arena, I have only a (small) partial view of the whole arena around my game character. In addition to the partial view, I have a mini-map in one corner of the screen that allows me to see my location on the whole map, which also includes a rendering of the energy shield coverage status.

- My perspective is a 2D overview, but my vision is limited to a field-of-view (FOV) in the direction my character is facing. Outside my FOV I am able to see everything on the map, except for other players. I can only see other players inside my FOV. For example, I can't see a battle taking place behind me, but when an explosion occurs, I am able to see that explosion on the map.
- I have to search the map for weapons, ammo, and health powerups.
- There is only one type of weapon and whenever my character walks over a weapon icon, it is automatically picked up, unless I already have one. Similarly with ammo and health, but I can only carry a max amount of ammo, and have a max health capacity. There are weapon powerups that extend the distance and firing rate of my weapon. They are automatically applied upon walking over them and are permanent.
- I'm able to fire a single shot of my weapon by quickly pressing and releasing a command, or repeatedly fire a weapon by holding the command down. The distance the projectile travels is based on the powerup status of my weapon.
- When a projectile hits another player, they are damaged by some amount, and I'm credited for that damage. When a player's health hits 0, the player's character dies in a tasteful explosion, and a message is displayed to everyone else in the game, along with the current count of the number of player's remaining being updated. I'm given credit for any characters eliminated from my projectiles.
- My character has a certain amount of "sprint" energy that can be used to quickly move forward (by pressing the shift and up arrow keys), or to quickly perform a side-step operation (by pressing the shift and left/right arrow keys). When one of these actions is performed, some percentage of the energy is immediately used. This energy slowly regenerates over time.
- At the start of the battle, the entire gameplay area is available. However, as the gameplay progresses, a deadly shield (circularly shaped) slowly shrinks to a randomly selected location on the area. If any character touches the shield, the are immediately eliminated. It takes 10 minutes for the shield to completely cover the gameplay arena.
- The game ends when there is only 1 player left. When the game is over, a ranked list is displayed of everyone who caused damaged and/or eliminated other players.
- The server I'm playing on is capable of only 1 battle arena at a time.

Game Arena

The following mockup shows a general overview of the game arena.



The following elements are included:

- The entire game play area is square/rectangular.
- The shield shrinks in a circle to some location; randomly chosen at the start of the game.
- Buildings dot the arena. Players and weapon projectiles are blocked by them.
- Powerups dot the arena
  - Numbers of each are fixed at the start of the game. There are always X_1 weapons, X_2 health powerups, X_3 ammo boxes, X_4, weapon powerups. Is X_n based on the number of players?
  - Locations randomly chosen at the start of the game. A they more densely located towards the center of the map?
- The self player is the blue character with the health bar displayed on top.
  - Players can not see the health status of other players
- Other players are indicated in red; this overview is not a view from any player perspective, this is a view of the whole arena.
- Weapon projectiles are shown by the small red dots.
- An explosion is shown where another player character was eliminated/hit.
- The triangular region is the area where the self player would be able to see other players.

Player View

The following mockup illustrates an individual player's view during the game.

Note the following elements:

- Player has a health bar located above the character that shows their status.
- The player can only see other players within the triangular field-of-view (FOV).

- Buildings are visible outside the FOV; the explanation being that we know the arena layout in advance, so can know this information.
- ? Powerups are only visible in the player's FOV ? I think it should be that way, but is open for discussion.
- ? Even if another player is behind a building, they will be displayed in the FOV ? We can make it so that players behind buildings are not visible, but it adds quite a bit more to the rendering complexity. It is doable, but I would rather a very robust overall game, versus a not-as-good game, but has one fancy rendering technique.
    - I have an idea that is a reasonably straightforward approach to showing/not-showing players based upon a few line of sight calculations. It is a good-enough compromise that I think we'll use, leaving the more sophisticated technique as an optional (but cool) approach.