

1D Battle Royale

Goal

Build a fun battle royale game incorporating as many of the features implemented by the current games du jour while using the minimum of hardware, ideally a 1 dimensional display and a single button controller for each player in time for the next Pop-Up Arcade in 2023.

Approach

Determine the hardware constraints and software environment, iterate on playable software prototypes and if a fun game can be found then build a hardware implementation in time for the event.

Initial Strawman Design

The map is represented by an illuminated section of the display. Initially the entire display is illuminated and the entire map available. Periodically the map shrinks until every point on the map is occupied by a player.

At the start of the game and each time the map shrinks, players are randomly positioned at points within the map. Each player is represented by a single pixel on the display with each player given a different colour.

The goal of the game is to eliminate all other players by shooting them. Players shoot by holding down and then releasing their control button. The distance the player shoots is determined by the amount of time the button is depressed. Shooting is represented by a dot of the player's colour moving from the player towards the nearest target. If the shot lands close enough to another player they are eliminated and removed from the game. Once the shot has landed the player is able to shoot again. When only a single player is left, they win.

The shrinking map creates a natural increase in the tempo of the game as players are positioned closer together, don't need to shoot as far and so can shoot more often. If no winner has been determined by the time players inevitably end up positioned next to each other then a single momentary press of a button will always eliminate another player resulting in the game quickly coming to a conclusion.

Bugs/Stretch Goals/Questions/Optional Design Elements

- ☒ ~~More than 2 players?~~
- ☐ Networked multiplayer?!
- ☐ Limited lives and respawning?
- ☒ ~~Power-ups that can be shot to upgrade projectile speed/damage radius/grant invincibility/cover/teleport/extra lives?~~

- ☐ Power-ups or benefits granted for eliminating players?
- ☒ ~~Ability to choose shot direction rather than having the closest target determine shot direction?~~
- ☐ Cosmetic upgrades that can be shot/purchased to change player colour?!
- ☒ ~~If player dead still shoot noises which is confusing (maybe prio 1? Will be a lot with 4 players)~~
- ☐ Slightly different shoot noises for each player? (Stretch)
- ☐ Maybe a different spawn sound? (Not shoot)
- ☒ ~~Celebratory win noise when round over?~~
- ☒ ~~Reset button (Stretch) (time out reset???)~~
- ☒ ~~Found a bug where there was a winner and nothing happened~~
- ☒ ~~Green red colour blind test on the power ups~~
- ☐ Count down timer noise for spawn time? (Stretch)
- ☒ ~~Can get power ups in spawn time, is that OK?~~
- ☐ A power up that let's you shoot off the end