Design Document
(Due 11/04/2022)

Game Overview

Description

The objective of Noodle Arm is to move onto the next area as quickly as possible, with the caveat that the next area can't be accessed until all the enemies in the current area are defeated. The player will be able to collect different weapons around the map that have different characteristics. The game will utilize procedural generation to have an endless number of levels, and the game will only end when the player runs out of lives. The score will be calculated based on how quickly areas are cleared and how many levels are cleared.

Genre

The game will be arcade style in the sense that the player will face unending challenges until they fail, and are incentivized to achieve a higher score.

Camera Position

The camera position will be a birds-eye view with scrolling. As the player moves around the map the camera will follow them. The whole map will not be shown at once.

How the Game will be Played

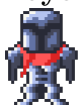
The game will be played with either a mouse and keyboard or with a joycon controller. The player's movement will be controlled with arrow keys/WASD or the joystick of a joycon. The player's actions will be controlled by mouse clicks/keyboard keys or the buttons on a joycon.

Objective

The objective is to achieve the highest score possible by clearing areas quickly, and clearing as many areas as possible.

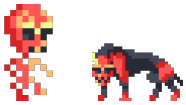
Visual Entities

- **Player** - Entity controlled by the player.



- **Weapons** - Can be picked up by the player and used to attack enemies.

- **Enemies** - Antagonistic entities that will pursue and attack the player.



Interactions

- The player can move around the map on traversable tiles.
- When the player steps on a tile with a weapon, the player will pick it up.
- The player can cycle through and equip the weapons in their inventory.
- The player will be able to swing their weapon to deal damage to enemy nearby entities.

What Makes the Idea Interesting

In our combined opinion, the most fun aspect of this game will be the weapon system. There will be a variety of weapons to collect that have different feels to them and cool animations. There is a level of replayability since the player can test out different strategies in order to get a higher score. The game will hopefully also be visually appealing with original artwork.

Development Strategy

1. Core Mechanics
   - Adapting Griffen's project one code to utilize scrolling movement. (Nathan/Griffen)
   - Setup basic networking. (Griffen)
   - Procedural generation research and basic implementation. (Nathan)
2. Advanced Functionality
   - Create artwork and spritesheets for different visual entities. (Nathan)
   - Work on player controls and interaction with environment. (Griffen)
   - Create enemies and their movement logic. (Nathan/Griffen)
3. Polish
   - Fine tune procedural generation. (Nathan)
   - Fine tune networking. (Griffen)
   - Add in joycon compatibility. (Nathan/Griffen)
   - Search and eradicate bugs. (Nathan/Griffen)
   - Work on high bar items. (Nathan/Griffen)

High Bar Items

- Special Attack: Each player weapon would have a special attack that applies a negative effect to the target enemy. One example may be to deal minor damage over time for a few seconds. The special attack would have a long cooldown of 20 seconds.
- Explosive Item: The player may pick up bombs and attack with them like a regular weapon. Using the bombs removes them from the player's inventory.
- Player vs. Player: A separate map can be played that is made specifically for player against player gameplay.
- Interesting Enemy AI: Enemies could strategize by trying to surround the player instead of moving towards the player in a straight line.
- Boss Enemy: At the end of a run of 3 rooms, there will be a boss enemy that has more health and damage output than regular enemies.

Low Bar Items

- Controls: The player controls a character. May move in four directions with WASD, and attack using the left and right mouse buttons.
- Scoring: The quicker the player destroys all enemies in a room, the higher their total score will be overall.
- Weapons: There will be a spear, sword, and great club weapon that the player can pick up and attack with. Each weapon will have different attack ranges, animation speeds, and damage values.
- HUD: There will be a heads-up display showing the player's current held weapon, health, and score.
- Enemies: There will be at least 2 enemies that have a simple attack. The enemies move toward the player using the A* algorithm.
- Inventory: The player has an inventory that lets them store and retrieve one of the tree kinds of weapons.
- Procedurally-generated maps: There will be room templates that connect to each other based on an algorithm.
- Maze Design: Rooms will have a maze-like design similar to Gauntlet.
- Networking: Two players may connect to a server as clients and play cooperatively. The network connection is real-time.
- Joycon Controls: Game controllers will be supported.
- Win/Lose Conditions: The player loses when their health drops to 0. The player must survive as long as possible.
- Screen-scrolling: The camera will be "zoomed in", and moves with the player.