23rd June 2023

Sheng

**Progress**

Implemented ability for health pickups to drop when killing an enemy

Implemented health score for player

Implemented logic of enemy damage to the health of player

**Challenges**

Finding the proper sequence of attack animation frame and applying the attack damage to the player

**To-do**

Fix a single attack coroutine to only damage the player once instead of multiple times.

Implement game end when health reaches 0

James

**Progress**

Research completed into level design

Level design made on paper

**Challenges**

Research states that level design be consistent with themes of the game. Must ensure that the level gives the desired appearance, e.g. scary, dark.

**To-do**

Build level

Find textures for walls and floor

Implement door feature

24th June 2023

Sheng

**Progress**

Fixed bug of restart game popup not showing up

**Challenges**

Collectibles show bullet holes due to being a collider object

**To-do**

Implement ammo features in game

Fix collectible showing bullet holes

James

**Progress**

Level design has been implemented

Door and door control feature has been added

Textures added to all game objects

Lighting has been set up

**Challenges**

Lighting may need to be changed, map is potentially too dark

**To-do**

Sound effects need to be added including music, zombie, player and door sound

27th June 2023

Sheng

**Progress**

Added ammo functionality

**Challenges**

None

**To-do**

Write unit tests

James

**Progress**

Sounds have been added for doors, player when he is hurt and zombie random sounds as well as zombie attack sound

**Challenges**

Git issues this morning, when merging the latest changes the main level scene was lost. Issue was identified and James and Sheng worked together to resolve the issue.

**To-do**

Need to add background music

Research design principles

30th June 2023

Sheng

**Progress**

You could creates tests and run tests

Damage pick up now spawns and you can pick it up permanently increasing your damage

Refactor Chasing Enemy and Target Enemy Script into Finite State Machines

Implement state interface on top of Finite State Machines

**Challenges**

Health collectible item tests not passing

Problem with just solely using Finite State Machines

**To-do**

Finish/Solve bug with health collectible item tests

James

**Progress**

Research on design patterns. Found 4 design patterns for us to implement, the observer, factory, object pool and state pattern.

Decoupled the door and switch scripts and my Liskov principle in the SOLID.

Sounds and sensitivity settings have been implemented.

Pause game implemented.

Created UI for pause and updated UI for end game.

**Challenges**

Have been trying to implement the observer pattern for tracking events but I cannot get it to work correctly.

**To-do**

Set up the observer pattern for tracking score/health/ammo as Kemi has suggested it is a good pattern to use.

Implement the main menu and level progression.

3rd July 2023

Sheng

**Progress**

Finish implementing state machines

In the progress of fixing damage attack on specific animation frame

**Challenges**

Hard to fix damage attack frame just with yielding seconds

**To-do**

Finish/Solve bug with health collectible item tests

Fix damage attack frame

James

**Progress**

Implemented observer system to decouple classes

**Challenges**

Event system was difficult, I found multiple examples online but they were not working correctly for me. I achieved it in my own way with an events class and static methods for calling events.

Would like feedback from Kemi on implementation

**To-do**

Create home screen and implement levels

Saving game

5th July 2023

Sheng

**Progress**

Read up on different implementations of Dynamic Difficulty Adjustment. Found 8 different approaches to implement DDA.

**Challenges**

Determine which DDA to best use for the DDA game

**To-do**

Evaluate the pros, cons and practicality of the different approaches

James

**Progress**

Found a simple implementation using constructive PCG. The algorithm uses randomized depth first search.

**Challenges**

We have stated that we wish to use a search based algorithm.

**To-do**

More reading on genetic algorithms and PCG.

10th July 2023

Sheng

**Progress**

Finish coding the player metrics aspect of the game. Able to track the various aspects of a player’s performance such as hit/miss rate, APM etc. I also added some tests for player character script.

**Challenges**

None

**To-do**

Implement Dynamic Scripting.

James

**Progress**

Trying to implement a puzzle inside the maze as Kemi suggested just trying to find your way out the maze might not be enough.

I want to hide coloured digits throughout the maze which the player must memorize. Once they get to the end the coloured numbers will correspond to a code the player must put in.

Generated a code and can spawn number prefabs.

Set up an enter code pop up window.

**Challenges**

Struggling to change the colour of the digits.

**To-do**

Finish puzzle.

Attempt to implement a better maze generation algorithm.

Implement tests.

11th July 2023

Sheng

**Progress**

In progress of implementing the pseudocode for dynamic scripting

**Challenges**

None

**To-do**

Finish the implementation of the pseudocode of dynamic scripting

James

**Progress**

Implemented puzzle.

**Challenges**

None.

**To-do**

Score manager, player progressing with score.

Try another algorithm.

12th July 2023

Sheng

**Progress**

Implemented the pseudocode of script generation for dynamic scripting

**Challenges**

Appropriate placement of the functions for tweaking enemy and game rules

**To-do**

Implement the weight adjustment pseudocode of dynamic scripting

James

**Progress**

Implemented a second maze generator algorithm (Prim’s algorithm).

Started a 3rd algorithm (recursive division).

**Challenges**

Want to implement SBPGC. Only been working with constructive PCG.

**To-do**

Score manager, player progressing with score.

Try another algorithm.

14th July 2023

Sheng

**Progress**

Working out the fitness equation of the enemies

**Challenges**

Found out that a test file implemented was missing because of the most recent git problems on the master branch

**To-do**

Finish working out the fitness equation of the enemies

Implementation of the fitness equation of the enemies

James

**Progress**

Implemented the recursive division algorithm.

Started creating a genetic algorithm for generating a maze.

**Challenges**

The genetic algorithm is crashing over a certain number of generations. Must be a memory issue.

**To-do**

Score manager, player progressing with score.

17th July 2023

Sheng

**Progress**

Finish working out the fitness equation of the enemies

**Challenges**

None

**To-do**

Finish implementing the weight update function for the reinforcement learning of dynamic scripting

James

**Progress**

Completed genetic algorithm for maze generation

**Challenges**

none

**To-do**

Score manager

Select maze algorithm at startup

18th July 2023

Sheng

**Progress**

Finished implementation of DDA, merged into master

**Challenges**

none

**To-do**

none

James

**Progress**

Maze now selectable at startup

Score manager created and score implemented for the maze based on time.

Health pickups have been added.

**Challenges**

none

**To-do**

None

28th July 2023

Sheng

**Progress**

Changed CI/CD flow from Circle CI to Github Actions (~20 mins for first time build) (~10 mins for cached build)

**Challenges**

Problems with testing in edit mode as it is taking a long time to run the code

**To-do**

Finish implementation of Github Actions and pushing the build to another repository

James

**Progress**

Score manager completed with score persisting between levels

Set up ruby and database

Set up player manager to carry health between levels

**Challenges**

Player manager work required some refactoring and took some time to get to work correctly

Noticed a bug where end game popup is destroyed when the game is restarted

**To-do**

Set up UIs

Integrate leaderboard into the game

Fix end game popup bug

31st July 2023

Sheng

**Progress**

Still working on CircleCI. Able to push built applications onto amazon s3.

**Challenges**

Attempting to run Github Actions locally through Docker

**To-do**

Able to deploy application to s3

James

**Progress**

Working on UIs for the leaderboard

**Challenges**

None

**To-do**

Finish UIs

Integrate leaderboard into the game

Fix end game popup bug

4th August 2023

Sheng

**Progress**

Attempt at implementing github action (CD) for Backend API

Create a new API endpoint for storing player metrics

**Challenges**

Ensure the github action (CD) for Backend API works properly

**To-do**

Ensure Unity is sending the write information

James

**Progress**

Set up schema for leaderboards

Database created on Dokku

Successfully added to DB the game

**Challenges**

Creating a table in Unity

**To-do**

Finish table