Game Proposal: <Run To The Temple>

CPSC 427 - Video Game Programming

Team Members:

Kelly <21775168>

Amy Promhouse

Aidan <31139991>

Mike <62741616>

Elliot <72875552>

Story:

Four unfortunate beings have been stranded in a jungle, and the only major landmark they can see is a temple. Hopefully, once they reach it, they will find some tourists to help them. On the way, they find curious treasures that they can trade with locals to help them in their journey. After each player has had a turn to make a move (by rolling dice), they will be mysteriously sucked into a minigame to play against each other for the promise of more treasure, and the treasure will be delegated to the players according to the outcome of the minigame. Whoever reaches the temple first will get to escape!

The main entry of our game is a board where players take turns rolling a die. Any player landing on

certain tiles will trigger minigames or other random events. Both players will get into the minigames and compete with each other. They will collect treasures by achieving certain goals. They can use treasures to buy props to move faster on the board or gain certain capabilities in the next minigame. The player who reaches the temple first will gain the most treasure and the game will end, it's possible that this bonus is not enough and they may still lose to another player with more treasures.

Technical Elements:

- 2D - The game will occur in a 2D plane.

- Assets: Our game will feature old-school/ pixelated style graphics for simplicity and stylistic reasons.

- 2D Physics: Some of the minigames will utilize physics to enable projectile motion and gravity calculations. We also plan to include collision detection between players and environment elements during the minigames such as walls.

- Player Shop: Along the way, there will be some 'shops' that will allow the characters to buy objects using the treasure that they have gained. The objects will allow them advantages such as adding another die to their roll.

- Discrete Mini-Games: The minigame types will be created in the following order:

1. Map of the temple that the players go around

2. Tank minigame: each player will be assigned a tank to join a fight with AI tanks. Points will be given to each AI tank destroyed and the other player's tank destroyed. The game will end with either all AI players and one human player gets destroyed or two human players both get destroyed by AI tanks.

3. Platformer: Players will try to get to the top of a structure by jumping on ledges, the first person to reach the top wins.

4. Memory drawing: See an image for a couple of seconds before it disappears and then the player tries to copy it.

5. Jungle enemy evasion: Evade AI enemies in a jungle maze for 30 sec, if an enemy touches a player, the player cannot win the minigame, any players left by the end of the time limit win the minigame.

This way if there is not enough time, the games that are lower on the list are considered low priority and will be abandoned if time runs out.

- Board Game Tiles and Events: Well-defined rulesets for game tile behavior along with some randomization for which events can occur while moving around the board.

- Rendering: Fast and efficient asset loading and effects.

- AI: We plan to include AI for both the minigames and the main game board. In terms of minigames, we plan on using path-finding for the NPC players to complete the challenges such as finding other players to attack or to reach a point the fastest. For the game board, we plan to include some basic rule sets for playing the board game such as which direction to travel or how to react to random events on the board.

- User experience: we will follow Norman's design principles and make user-centered design choices. That means we will start by considering the player’s needs first. These include designing easy and obvious mappings between buttons/ graphics we have on the UI and the actions, enhancing the visibility of important functionalities, ensuring the transfer effect unfamiliarity is to the lowest and providing feedback to users by leveraging sound and visual effects.

- User input: Keyboard (shared between two players during minigames) and mouse controls during

player turns on the board.

- Audio: We plan to include background sounds/music during the game board view and some exciting music during the minigames. We also plan to use small sound clips to indicate collecting points or registering damage to give the user auditory feedback.

Advanced Technical Elements:

- Multiple cameras during minigames to give a split-screen effect. If we skip this feature, we will just have a single screen shared that is further zoomed out and less detailed.

- Controller input. In the event we skip this feature it will reduce the number of human players we can support from 4 to 2.

- Day/night system for dynamic lighting of the background. The game will have static lighting if we don't get to this feature.

- Coop minigames, where players team up against the AI. If we skip this feature, we will still have mini-games where all players are against each other.

- People can choose what their character looks like. If we skip this feature, players will have a set selection of characters to play as.

Devices:

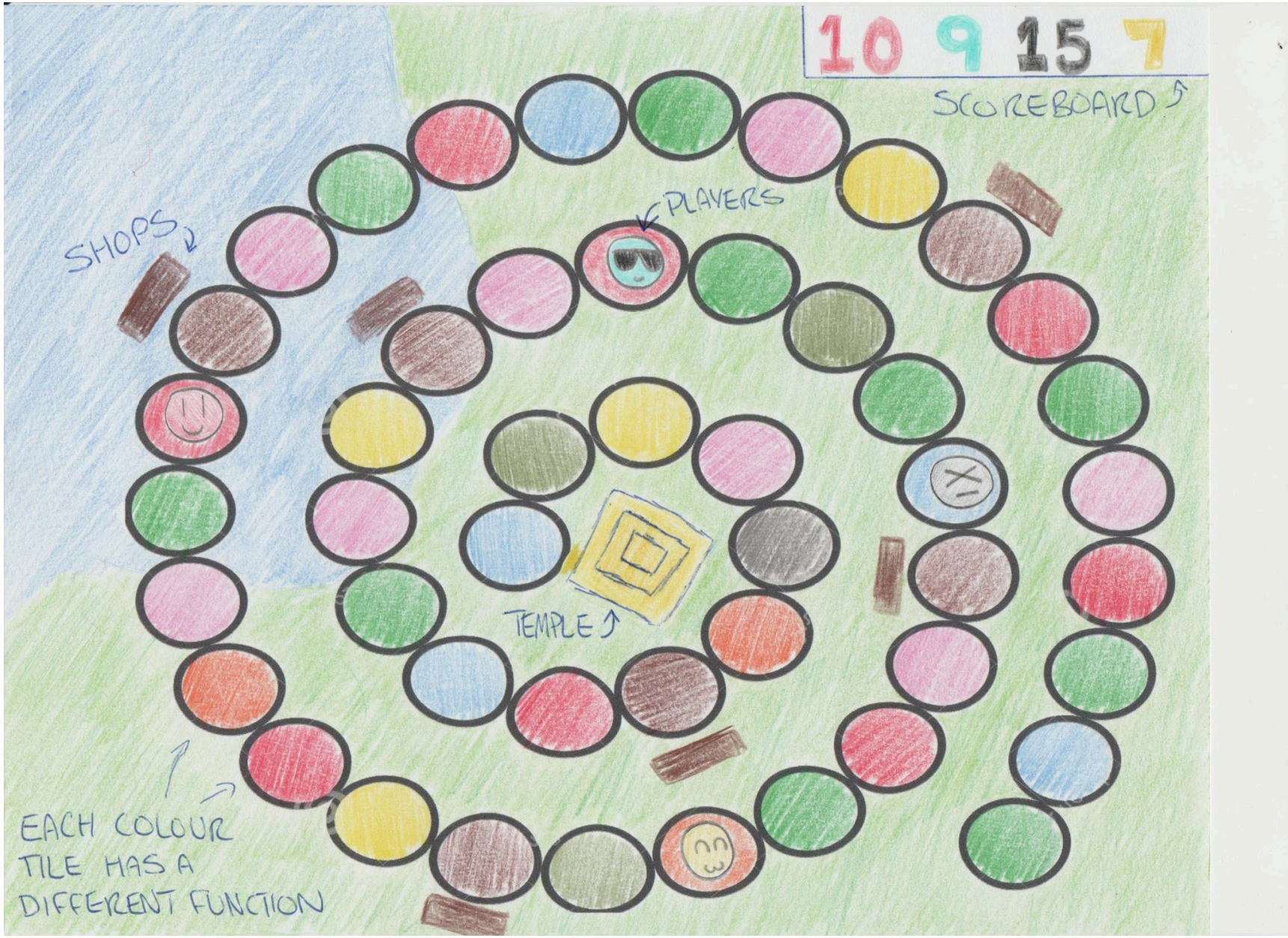
- Keyboard input supported
    - Player 1 movement (on foot and in a vehicle): WASD
        - W: move forward (or jump in platforming mini-game)
        - A: move to the left
        - S: move backward (or crouch in platforming mini-game)
        - D: move to the right
    - Player 2 movement (on foot and in a vehicle): Arrow keys
        - Up arrow: move forward (or jump in platforming mini-game)
        - Left arrow: move to the left
        - Down arrow: move backward
        - Right arrow: move to the right
- Mouse
    - Used for setup and clicking of elements during the turn-taking on the game board
        - Single left-click: roll the die, open the menu, buy equipment, quit/pause the game, etc.

- Single right-click: similar to left click? + get a detailed description of an equipment

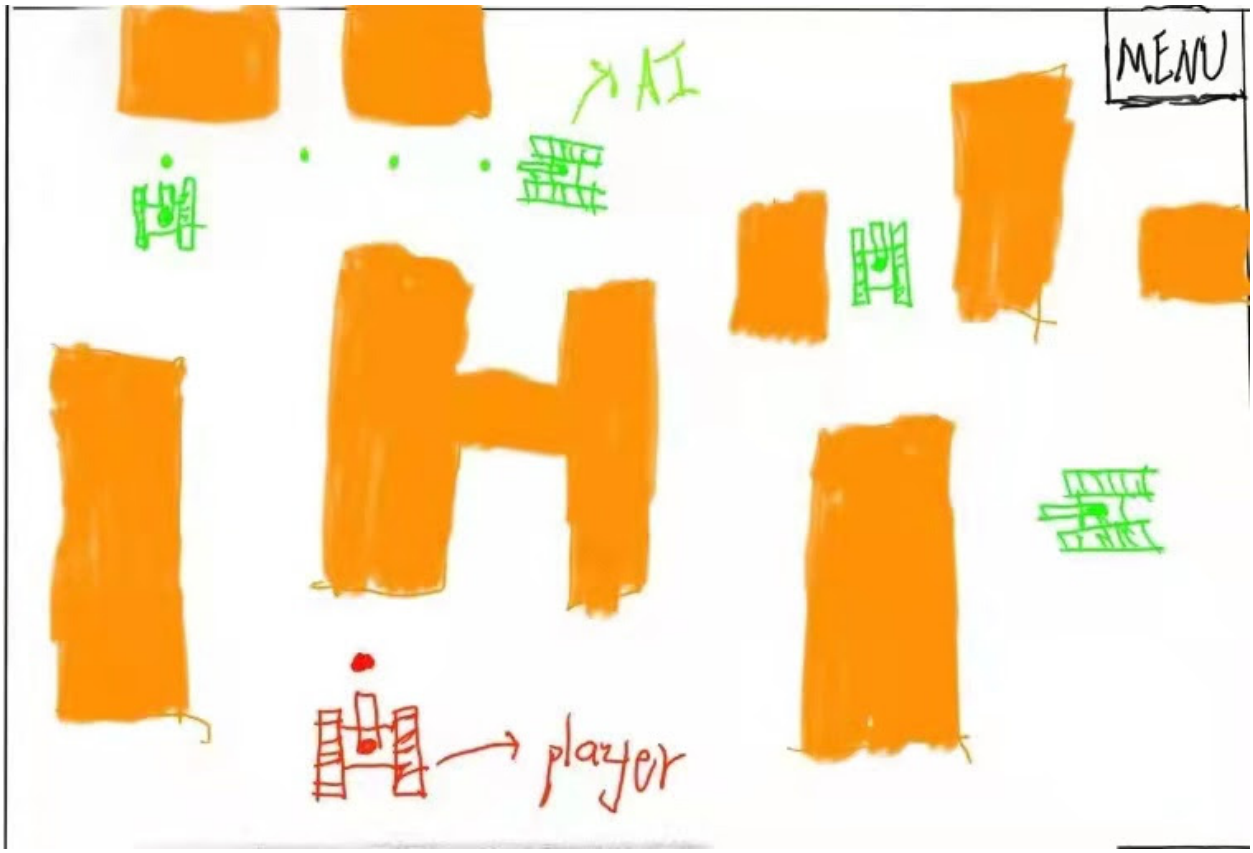
- Scroll: zoom in/out of the map, scroll down/up in the shop menu

- Gestures: moving the mouse in circles to roll the die.

Concepts:

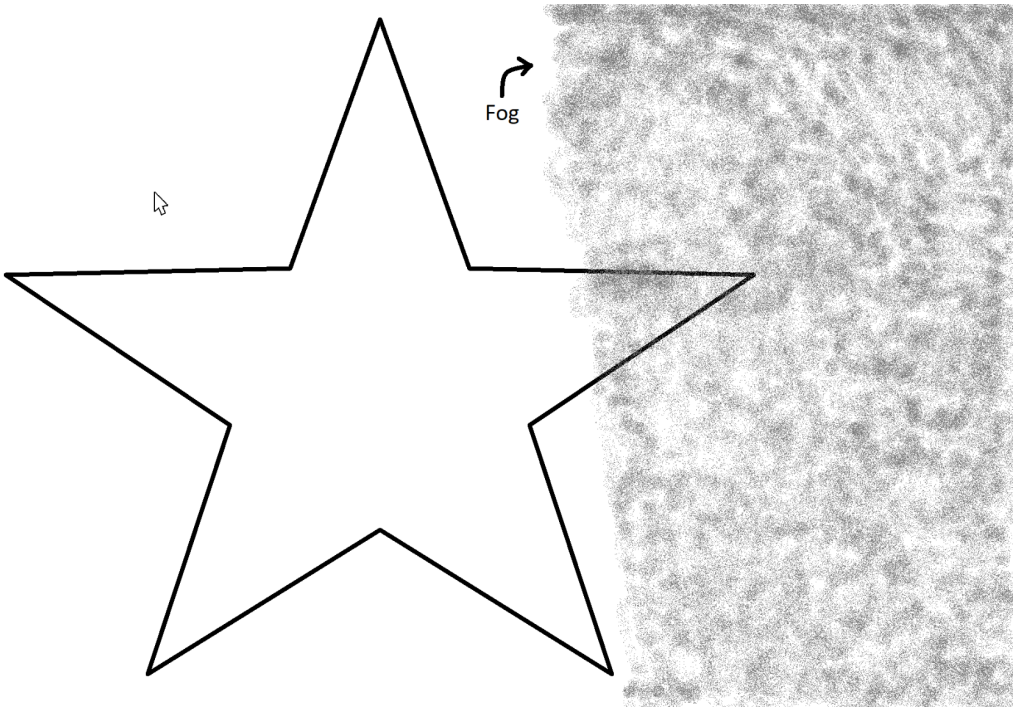

10 9 15 7
SCOREBOARD
PLAYERS
SHOPS
TEMPLE
EACH COLOUR TILE HAS A DIFFERENT FUNCTION

Game Board

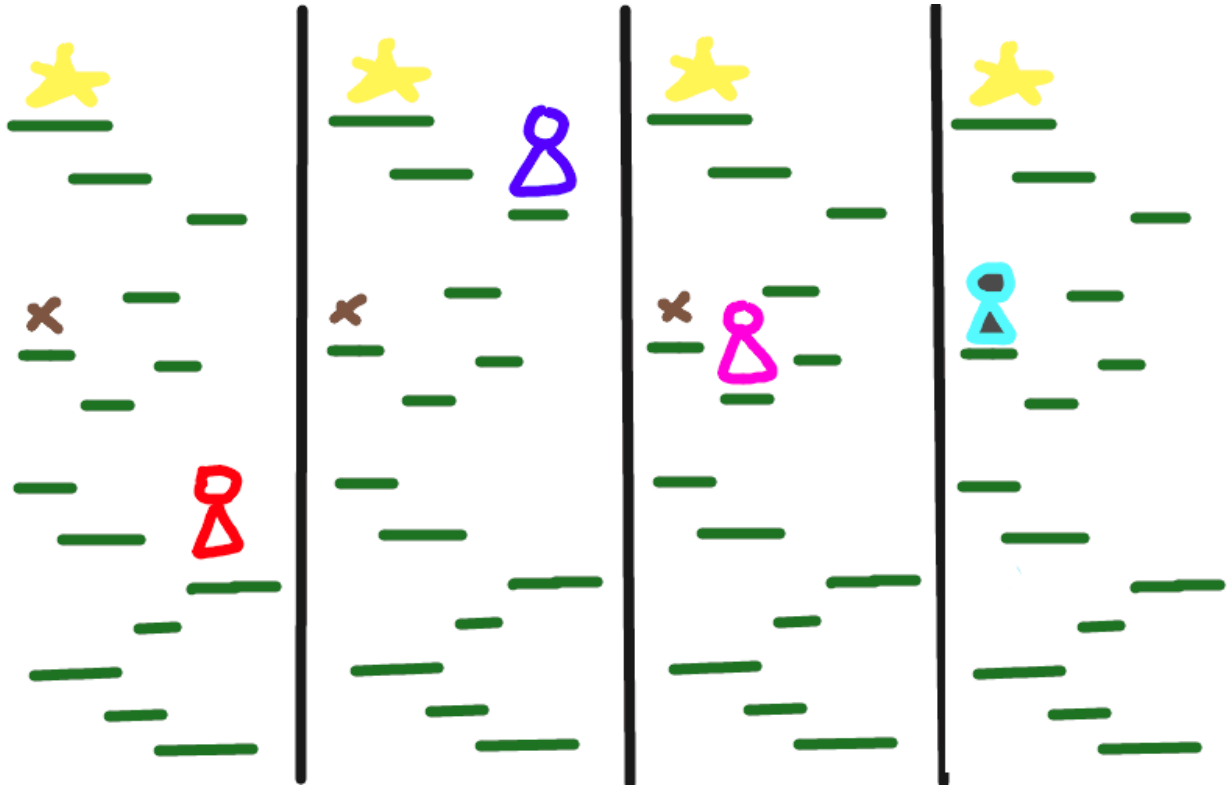


Tank Mini-Game

Shop Menu Concept



Drawing Mini-Game - Fog will be implemented to cover up the image that players will then have to draw from memory.



Platformer Mini-Game - Reach the top first to win treasures. Avoid traps/ enemies on the way up that will stun players temporarily.

Tools:

Nothing besides OpenGL is currently planned.

Development Plan:

Aidan:

- **5-6 game tiles with textures, jungle and beach background**

Kelly

Mike

Elliot

Amy

Skeletal Game

Week Sep 27:

- Loading textures onto assets like objects on board (everyone)
- Basis of board game area, including background and tile assets
    - Basic sprites for characters show up on the board
    - Walking sprite animation for the platformer (could be cut for m1)
        - Pixel character, Sprite sheet?
- Scoreboard is displayed
- Background for 2-3 minigames is made
    - tanks/players display in the background
    - Drawing game
    - Jumping game

Week Oct 4:

- AI players move toward other players in tank mini-game (explode on collision)
- Let players roll dice to move (shake it with the mouse)
- Connect player movement to the dice roll
- Allow the camera to zoom in to the game board or move to the edge to look ahead/behind of board
- Slide transition at beginning of game
- Pathfinding for AI tank to go around obstacles (could be cut for m1)
- Basic collision detection with walls/other tanks (seen in platformer and tank game)
- Keyboard controls for tank game
- Keyboard controls for platformer

Minimal Playability

Week Oct 11:

- Connect minigames to be done after round of turns
- Manual jumping and moving in the platformer
- Add background music to all minigames and mainboard

- Event spaces to move players depending on rules
- Jumping sprite animation

Week Oct 18:

- Tanks shooting at each other with destruction animation and advanced collision physics with the cannonball
- Save points accumulated from minigame to display on the mainboard
- Allow the game to be saved and reloaded later such as if the players need to take a break.
- Add tooltips to the game board to explain available actions and a semi-transparent UI element explaining the actions currently available at that time and what the controls are.

Week Oct 25:

- Add drawing minigame-
- add debug graphics
- AI reacts with a finite state machine with a fixed set of probabilities for certain actions based on state when making choices on the game board such as when/what to buy from the shops and how to use items.

Playability

Week Nov 1:

- Get physics working for minigames
- Add shops behavior trees (shop stock and opening policy based on the average player position on board, make the game more chaotic with better items as they progress)

Week Nov 8:

- Add more event spaces
- Add directional noise for tank shooting
- Halfway there announcement/popups
- Add treasure spaces randomly halfway through
- Add non-convex collision between tanks and during the platformer minigame

Week Nov 15:

- Add winning animation/announcement
- Making the temple super detailed with lighting with textured stone
- Add character that pities person in last and gives them an item

- Get smoke to cover up the initial drawing in the drawing minigame

Final Game

Week Nov 22:

- Put in a scroll full of rules/mechanics for the board at the beginning to go through
- Include tutorial screen before minigames
- *One more feature planned (TBA based on progress)

Week Nov 29:

- 2v2 mode for the tank game (players vs AI)
- Work on any stretch goals/advanced features to polish up the game
- *One more feature planned (TBA based on progress)

Filled out the Milestone Submission Form? **Yes**