Game Design Document

Name of the game: Potion Quest

Stakeholders:

- Dev: Carter Fowler, William Culver
- Design: Carter Fowler, William Culver

Product Backlog: https://potionquest.atlassian.net/jira/software/c/projects/PQ/boards/1

Major Changes From Original Concepts:

- Reduced biomes from 5 to 4 for ease of design and time
- Added more NPCs than the original 1 per biome idea

Remaining Tasks:

- Adding an arc to the darts in minigame 1 – balloon popper
- Improve sprites further, particularly to create consistency throughout the game
- Better sprites for minigame 3 – bullet catcher
- More interactable items throughout the game

Overview

Project Scope

- Timeline: 10 weeks (5 2-week sprints)

Elevator Pitch

You must go on a quest into the disparate environments surrounding your hometown to find the ingredients necessary to make a saving potion for your friend.

Theme and Setting

This world is comprised of 5 different biomes: your home which is a wide-open grassy area with various trees, a forest, a desert, the seaside, and a tundra. The world is made in a 2D pixel art seen in many similar adventure games.

Story

Your friend, Mia, has become severely ill over the last few days, and nothing has worked thus far. The town healer, Eilina, tells you that there is only one thing left that can save Mia but to make it they need a specific ingredient from each of the biomes that surround your village. Each of these ingredients are locked in a vault, which are deep within these environments. Eilina tells you that Mia only has 7 days left, so you better hurry back with ingredients if you wish to save your friend!

Gameplay

Movement

- Details: Player can move up, down, left, and right around each room.
- How it works: Arrow keys or WASD keys control movement and multiple keys can be pressed at the same time to move diagonally.

Camera

- Details: The camera will follow the player always keeping the player in the center of the screen.
- How it works: At the end of every frame, the camera is moved by how much the player moved.

NPC Interaction

- Details: The player will be able to interact with NPCs around the rooms. An indicator will appear above the NPCs head when the player is within interaction range. Pressing spacebar will trigger the interaction and allow the NPC to start speaking.
- How it works: Each NPC will have a large collision box to show the indicator when the player collides with it. The game controller will check for a space key press while this collision is happening and display a GUI on screen for the text that the NPC says.

Minigames

- Details: There will be various minigames the player must complete throughout the game.

- How it works: When the player starts a minigame, a new room will launch with that minigame. A GUI description of the minigame will be displayed before it starts. On completion of the minigame, the player will be transported back to the previous room location.

Puzzles

- Details: Puzzles will consist of riddles that the player needs to solve after collecting clues.
- How it works: There will be a location to input the solved puzzle that launches a GUI display. Clues can be given by NPCs or observed by walking around a room.

Time

- Details: The player will have 7 in game days to save their friend before the game is lost. This amounts to 7 hours of real time.
- How it works: While the game is open and not paused, a timer will tick down constantly. After every day, a GUI display will appear alerting the player that they are on the next day. Failing a minigame or puzzle will decrease the amount of time left.

Winning

- Details: If the player successfully gathers all the potion materials and brews the potion to save their friend in the allotted game time, they win.
- How it works: There will be a location on the main island to brew the potion which requires all the gathered materials. Once this potion is brewed, the game is won.

Losing

- Details: If the player runs out of time to save their friend before they brew the potion, they lose.
- How it works: The time left will constantly be checked and if it reaches 0 or below, the game is lost.

Menus

- Details: There will be a paused menu and a menu for the player's inventory. When the game is paused the time countdown stops and a menu is displayed showing options to resume, go to the how to play screen, or quit. The inventory menu will be an overlay that can be shown while the game is still running and will display all the collected potion items so far.
- How it works: Pressing escape will change the game state to paused and display a GUI menu with selectable buttons. Pressing the E key in-game will display a GUI showing the collected potion items. Pressing E again or escape will close this display.

How To Play Screen

- Details: There will be a screen with sprites and text describing how different aspects of the game work.
- How it works: This screen can be accessed from the splash screen or the paused menu by selecting the How To Play option. Pressing escape while showing this screen will take you back to where you were before.

Game Elements

Characters

- Player Character:
  - Sam
- NPCs:
  - Mia – your friend whom you are trying to save
  - Eilina– the healer who tells you what you need to find
    - Gives initial quest
  - 2 Forest NPCs
    - Give hints about forest riddle
  - 3 Desert NPCs
    - Give hints about desert riddle
  - 2 Ocean Front NPCs
    - Give hints about ocean riddle
  - 2 Tundra NPCs
    - Give hints about tundra riddle

Locations

- Biome 1 – Home
  - Mostly grass with some trees
- Biome 2 – Forest
  - A lot of trees with grass in between
- Biome 3 – Desert
  - Sand
- Biome 4 – Ocean Front
  - Beach
- Biome 5 – Tundra
  - Snow

Levels/Missions

1. **Tundra Riddle:** What falls in the winter but never gets hurt?
   Snow
2. **Forest Riddle:** Tread on the living, they make not a mumble. Tread on the dead, they mutter and grumble. What are they? Leaves/leaf
3. **Desert Riddle:** They are dark and on the run, but without sun there will be none. What are they? Shadows/shadow
4. **Ocean Front Riddle:** If you throw a red stone into the blue sea what will it become? Wet

Minigames

1. Balloon popper
   - Balloons move down the screen until they reach the bottom and you lose
   - Darts can be fired from the bottom of the screen and pop balloons on contact
   - You win if there are no balloons left
2. Maze
   - You have 5 minutes to traverse a maze to the goal
   - You win if you reach the goal before the time is up, otherwise you lose
3. Bullet catcher
   - Bullets spawn from the center of the screen and move towards the borders
   - If a bullet reaches a border, the border will decrease in durability until it breaks
   - If a bullet reaches the edge of the screen after a border is broken you lose
   - There are 3 levels which get harder by increasing the bullet spawn rate and speed
   - If you survive all 3 levels you win
4. Platformer
   - You must collect 20 coins and reach the goal to win
   - If you are hit by an octopus you lose a life and must start over
   - If you lose 3 lives you lose the minigame
   - There is a cherry which gives a super jump ability for 5 seconds and reappears after 8 seconds

Objects

- Home/buildings
  - Home can be entered and is where the cauldron and Mia are located
- Trees
  - Different looks for different biomes
- Rivers

- - Water to surround each biome room
- Vaults
  - One per biome besides home
  - Interact with them to launch the riddle screen
- Cauldron
  - Checks if the player has all the ingredients as the game win condition
- Main controller
  - Keeps track of overall game events, winning and losing conditions
  - Persistent across all rooms
- Minigame controllers
  - Keeps track of minigame events and winning and losing conditions
- Minigame objects (darts, balloons, bullets, blocks, ladders, etc.)
  - Provide functionality for each minigame
- Paused menu
  - GUI to show resume, how to play, and quit options
  - Pauses the game time when open
- Inventory menu
  - GUI to display collected ingredients
- Riddle screen
  - GUI to display riddle and minigame rules

Sounds

- Menu navigation/selection
- Room change
- Win/lose for overall game and minigames
- Minigame sounds (pop, damage, jump, coin, etc.)

Sounds Obtained From

- Professor Kathleen Kelly
- https://mixkit.co/free-sound-effects/game/

Art/Assets

Player - Idle

Player – Walking

Mia

NPC Alchemist
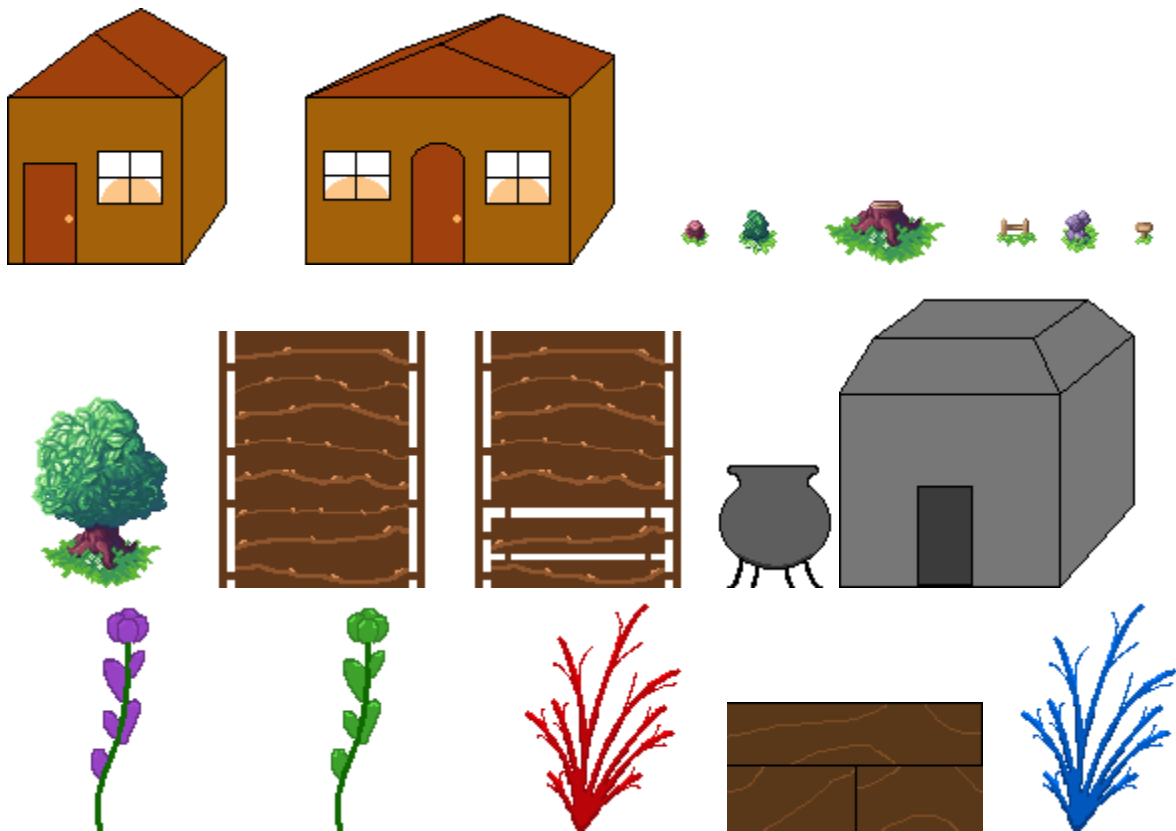
NPC Bartender

NPC Barmaid

NPC Blacksmith

NPC Merchant

NPC Farmer
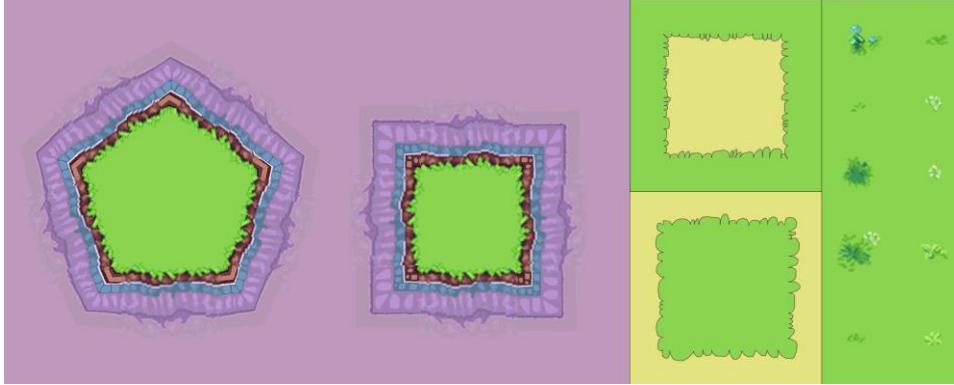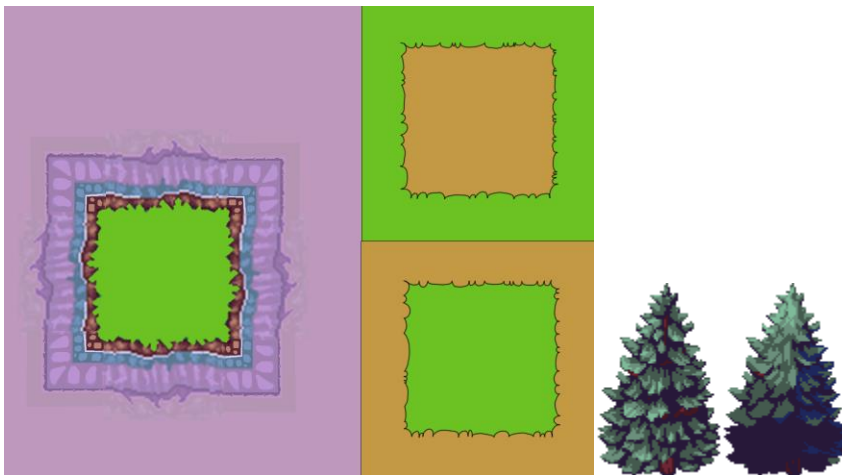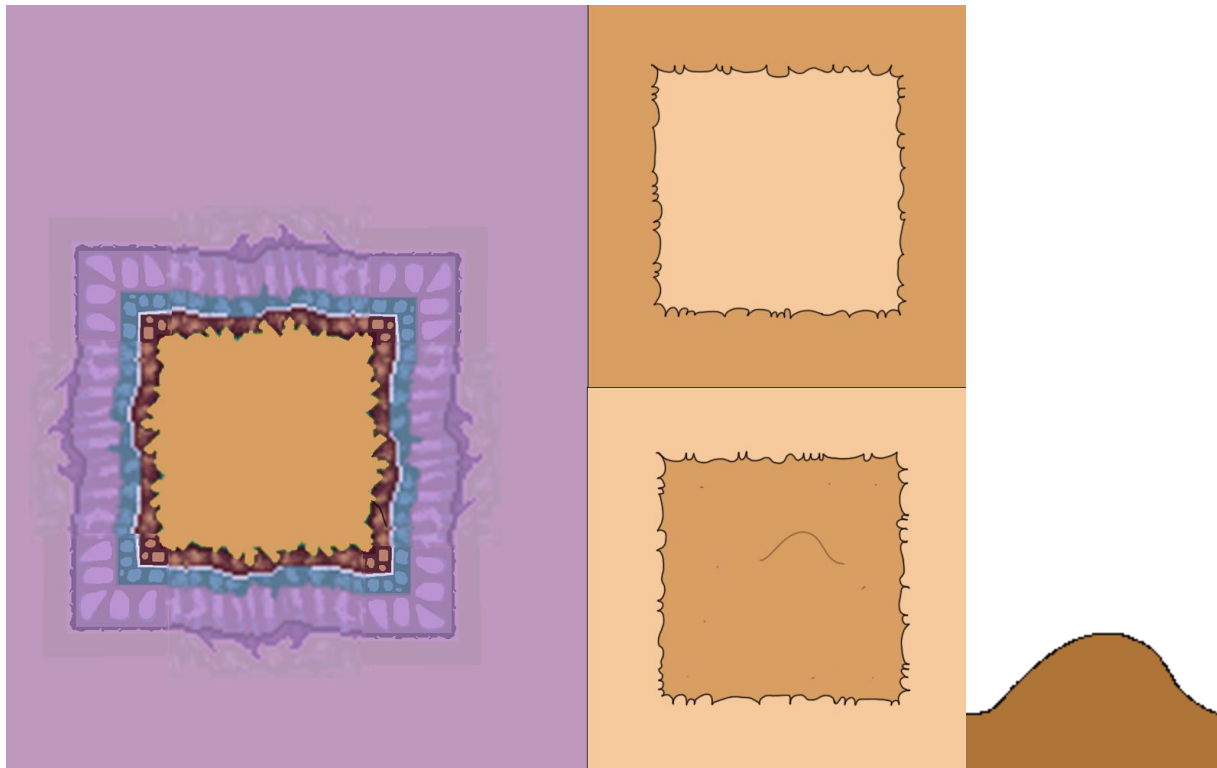

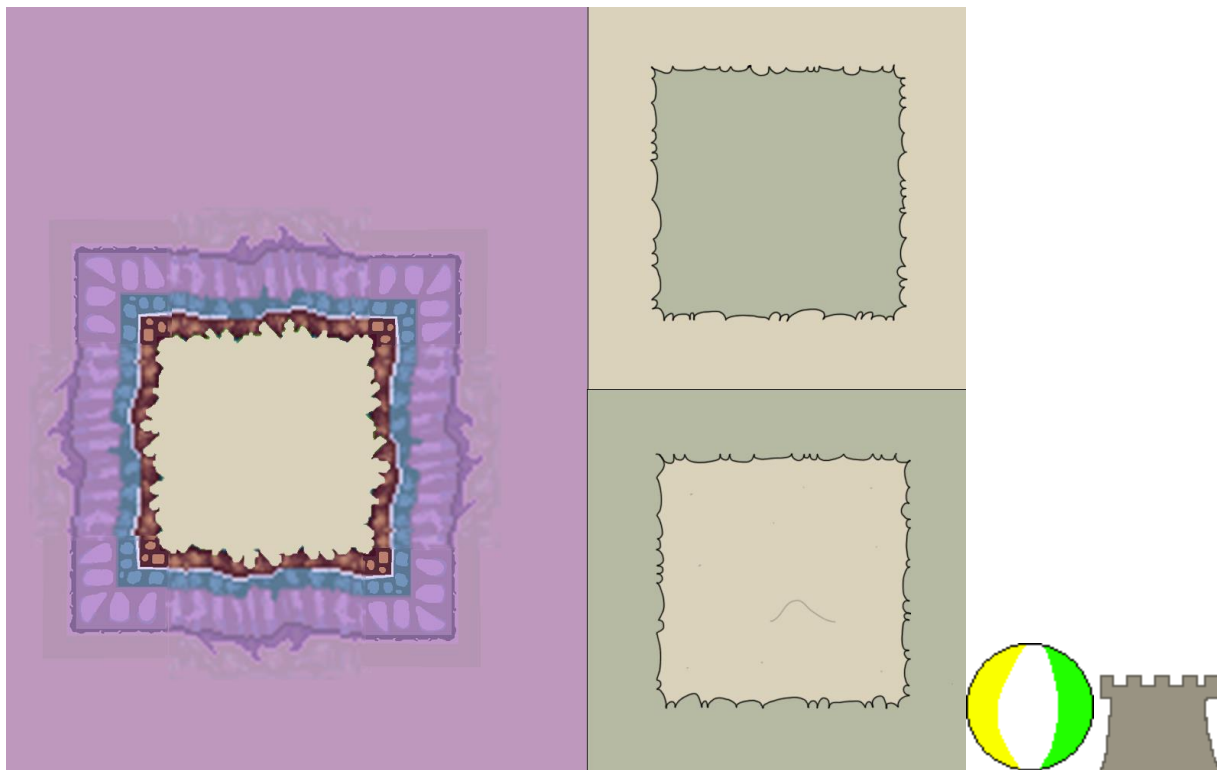NPC Fisherman

Biome 1 – Home and General Assets
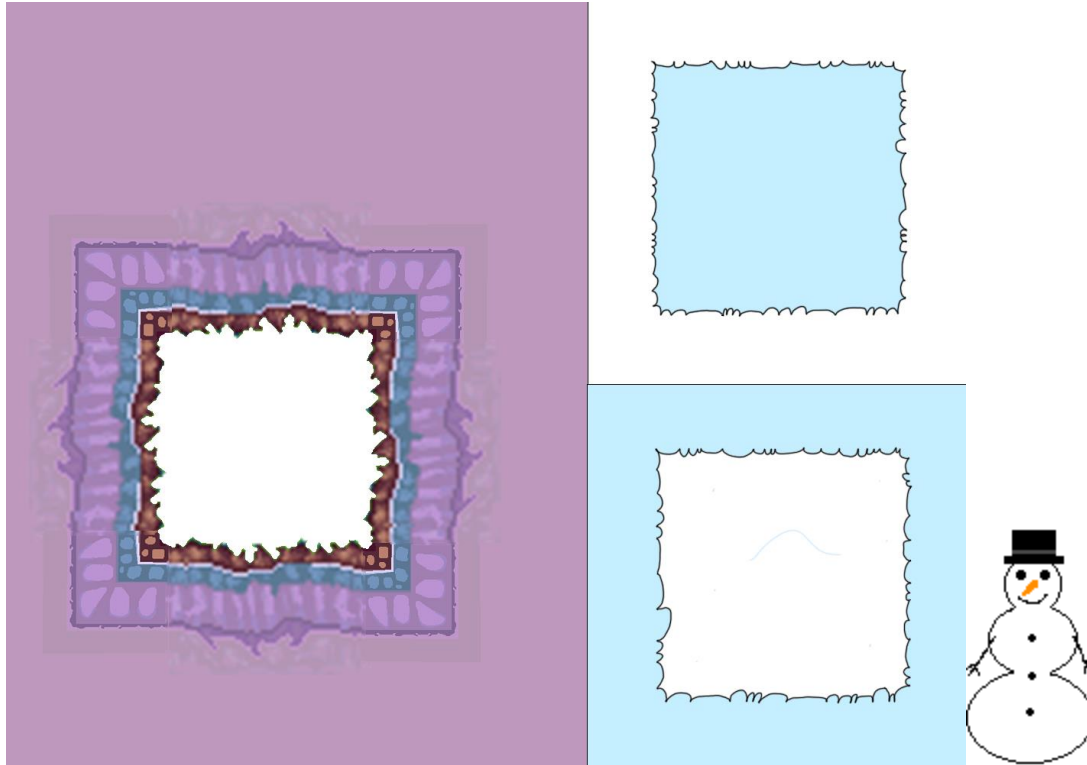
Biome 2 – Forest

Biome 3 – Desert

Biome 4 – Ocean Front
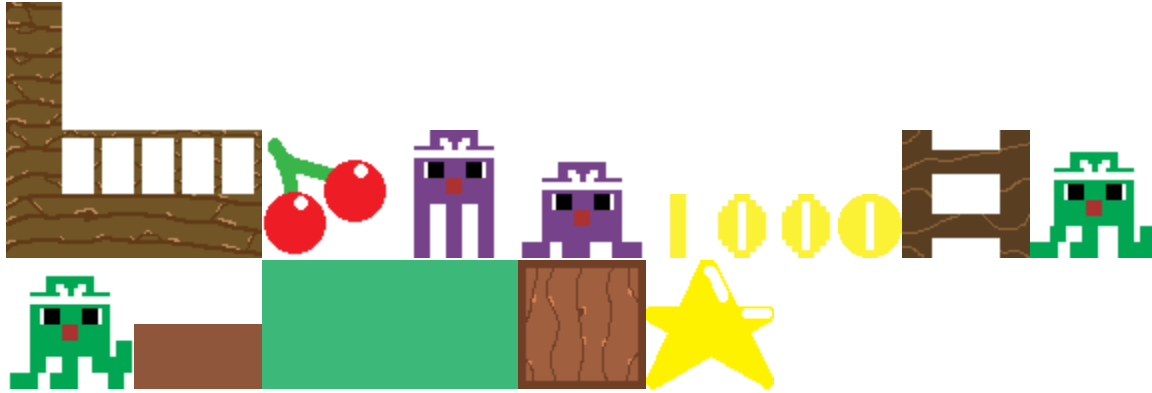
Biome 5 – Tundra

Minigame 1 – Balloon Popper

Minigame 2 – Maze

And white walls

Minigame 3 – Bullet catcher

Minigame 4 – Platformer

Some Assets Obtained From:

- Professor Kathleen Kelly
- https://guttykreum.itch.io/field-of-green
- https://ansimuz.itch.io/forest-tiles?download
- https://franuka.itch.io/rpg-townsfolk-pack

Trailer Music Obtained From: https://pixabay.com/music/modern-classical-light-and-reflective-piano-orchestra-1-22211/