Chaotic Mind - Progress Report

“Spinodal Studios”

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Executive Summary

Chaotic Mind is a top-down shooter set in a number of levels, each a procedurally generated maze, with the goal of collecting a number of objects in each level. The player is granted the ability to manipulate the maze by sliding around large portions of it in the form of tiles on a grid.

The player also must defend themselves from enemies through the use of weapons and offensive/defensive employment of their tile shifting ability. The game is two dimensional and has a broad target audience. Low to high end PCs should be able to play Chaotic Mind.

Our primary selection of music as been approved by the author for use in the game, provided it remains non-monetized.

The streamlined User Experience means the UI requirements are simple, consisting of four navigation menus, the main game screen and the tile shifting overlay. Controls consist of keyboard and mouse.

Characters are differentiated through the use of top-down perspective sprites, their movement and their weapons.

The story is simple, consisting of a single tension arc that is modulated by the difficulty of the game. The Game World is also simple, being largely transparent to the player, it is a representation of the protagonist's mind.

Art/Audio assets are in production, with only the music being finalised at this time. Simple sprites will be made first before moving into animated versions as time allows.

We plan to have the core feature set implemented by March 23rd, with the remaining time spent on optional features and fixing problems found in internal and external play-testing.

Part A - Game Design

1 Vision Statement

1.1 Logline

Chaotic Mind is a top-down shooter set in a shape-shifting maze.

1.2 Gameplay Synopsis

The game is set in a series of progressively harder grid-based maze-maps that the player must navigate through by shifting squares of the map around and defeating any enemies that they encounter. The player must collect a number of relics from the protagonist's past to progress to the next level. In addition, each map will have a final challenge that must be surpassed in order to progress to the next level. This challenge will take the form of a bigger enemy with more health, or a massive swarm of smaller enemies.

At any given time, the player will be engaged in a set of activities. There are two separate gameplay considerations that the player needs to be thinking about while playing the game. The first is the high level game. The player will be trying to shift the maze and open up a path to the next goal object. The second gameplay mechanic will involve things that would typically be found in a top-down shooter such as dispatching enemies, managing health and other resources, and planning where to go next.

Not at all times, but quite often the player may need to defend themselves from enemy attacks, which could be accomplished through the use of weapons or carefully timed tile shifts. The player will be granted the ability to selectively pause the game in order to have time to consider the potentially complex set of information.

2 Audience and Platform

2.1 Target audience

The appeal of this type of game is quite broad. Top-down games are generally accessible due to the simplified 2D environment (not requiring the user to perform more advanced 3D space processing). However, shooters require a degree of reflexive skill (rapid response to targets, avoiding projectiles, etc.) to be successful, limiting the appeal somewhat. Knowledge of English (or any language) is not required to learn the game, allowing a global geographic scope to be targeted. No specific age or gender is targeted.

2.2 Target platform

Windows PC is the production platform. Consoles are not targeted. Although top-down dual-stick shooters are well established on consoles, the more advanced interaction requirements of Chaotic Mind could be challenging to map through a gamepad.

2.3 System requirements

Any version of Windows since (and including) Windows XP can run Chaotic Mind. The game is not particularly CPU or GPU intensive, however XNA requires a graphics card that supports Shader Model 1.1 and DirectX 9.0c.

3 Legal

We have obtained authorization to use music from Rain (Phutureprimitive) in Chaotic Mind, provided that the game remains non-monetized. Any future monetization will require discussion of compensation with Rain, if his music is to be included in the monetized game.

4 Gameplay

4.1 Overview

The uniqueness of this game stems from that fact that it’s a mash-up of many different genres of games. The top-down shooter aspect is augmented with the secondary gameplay mechanic of managing the shifting maze. Introducing this mechanic allows the player to use many more styles of play. For example, instead of the typical approach of trying to gun down any enemy in your way, this game allows for other play styles such as the more stealthy, passive tactic of luring enemies into a room, then shifting the board such that they get trapped and can’t harm you.

4.2 Gameplay description

Gameplay will follow the same flow that is documented elsewhere in both this document and in the project proposal. The player will navigate the maze trying to recover objects (relics of his part) and avoiding (or destroying) enemies that get his way. The initial prototype of the game is shown below. In this image, the “fog-of-war” effect is demonstrated, obscuring the player’s vision.

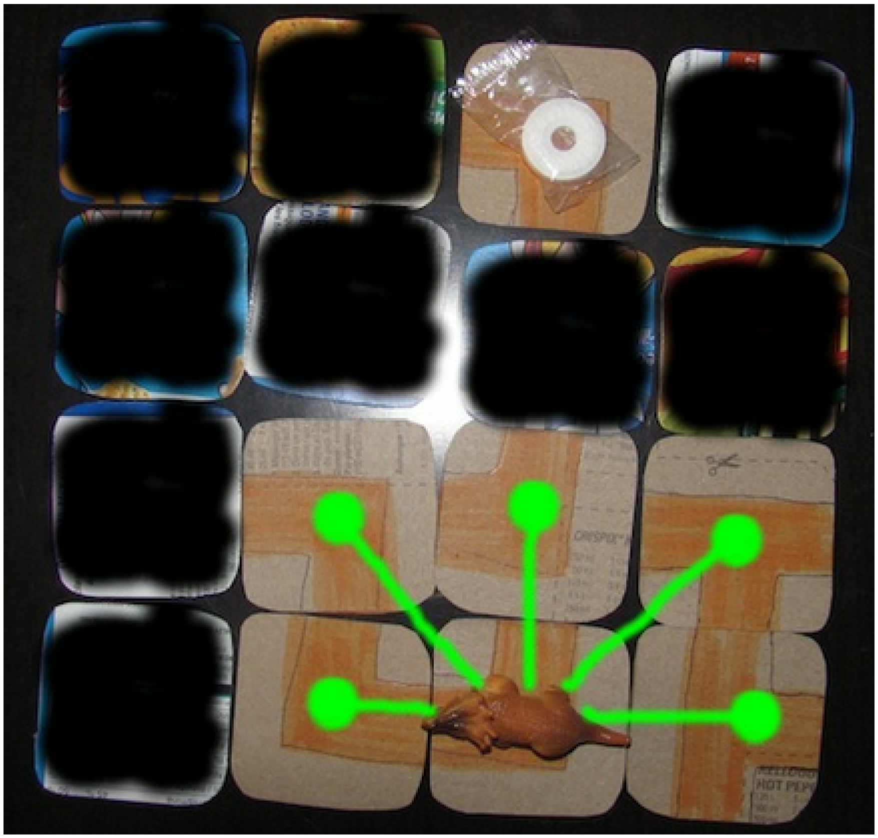

Figure 4.3.a - Photograph of prototype

4.3 Controls

Interfaces: The player will use 3 interfaces while playing the game. First is the main menu of the game. This will have a soft background track playing and will have a single button, “begin”. From there, when the button is clicked, the player will be placed in the first level of the game. The in-game HUD is fairly sparse, as to not distract or confuse the player. There will be a “sanity” gauge that shows the player’s sanity (analogous to health), a minimap that shows a representation of all the explored tiles, and a “shift” button that, when clicked, launches the map shifting overlay. When the player is viewing the shifting overlay, the game is paused. From the overlay, the player will be able to see the entire map (the unexplored sections will still be blank) and the current tile they have to push with. There will be a number of buttons surrounding the outside of the map. Clicking these buttons results in the current tile being pushed into the corresponding position, shifting the entire line of tiles. The tile that falls off the other side becomes the current tile for use in the next “shift” operation.

Rules:

Player - The player must avoid getting hit by the enemies, as this will decrease his sanity meter. When the sanity meter is depleted, the player loses a life and has to restart from the beginning of the level. The player is able to shift tiles and attack enemies.

Tiles - There are also a few rules that govern the tile shifting mechanic. While it is possible to shift the row of tiles with the object you are currently trying to reach on it, the game will prevent the player from shifting the goal tile off the map. As a future goal, there could be a mechanic whereby shifting the goal tile off the map would reduce your sanity to a tiny amount, spawn a bunch of enemies, and force the player to make a run for the previous goal object.

Enemies - Enemies will not be able to initiate any tile shifts. They will continually be trying to co-ordinate with the rest of the enemies and swarm the player. They will have to walk around the maze to get to the player. In addition, the AI of the enemies will be able to occasionally shift tiles to get closer to the player.

Scoring/winning conditions: There won't be any primary scoring condition, this is a game where the only real objective is to survive and complete the level. The winning conditions of the game align with the plot of the game in that it is necessary to collect all the artifacts in the level and defeat the boss to progress to the next level.

4.4 Levels

Levels are procedurally generated grid-based mazes. In a square grid of variable size (approximately 4 to 24 side length, see figure 4.4.a) there will exist one square tile per grid cell. Each side of a tile has a doorway located in the middle, through which characters and projectiles may pass if the doorway is not blocked. Doorways are blocked as part of level generation, creating permutations of tiles with between 0 and 3 doorways blocked. See figure 4.4.b.

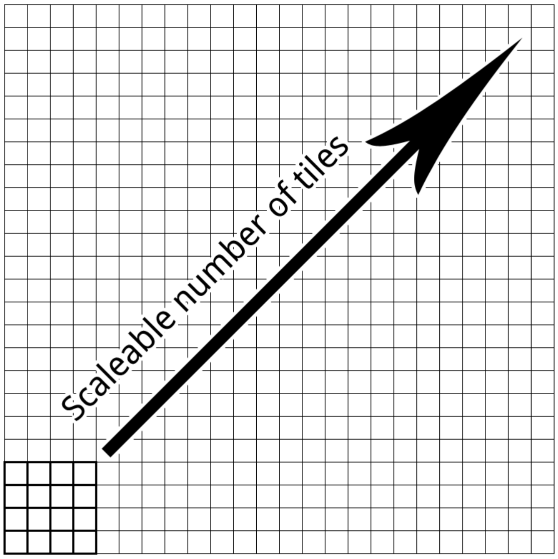

Figure 4.4.a - Level grid size range

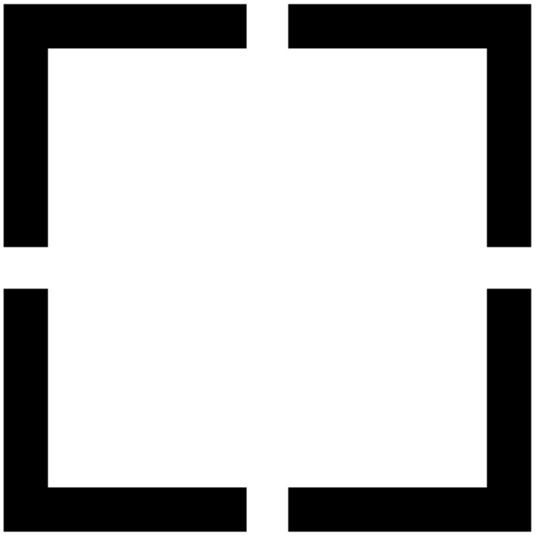

Figure 4.4.b - Single tile, 4 open door layout

4.5 UI/UX flowchart

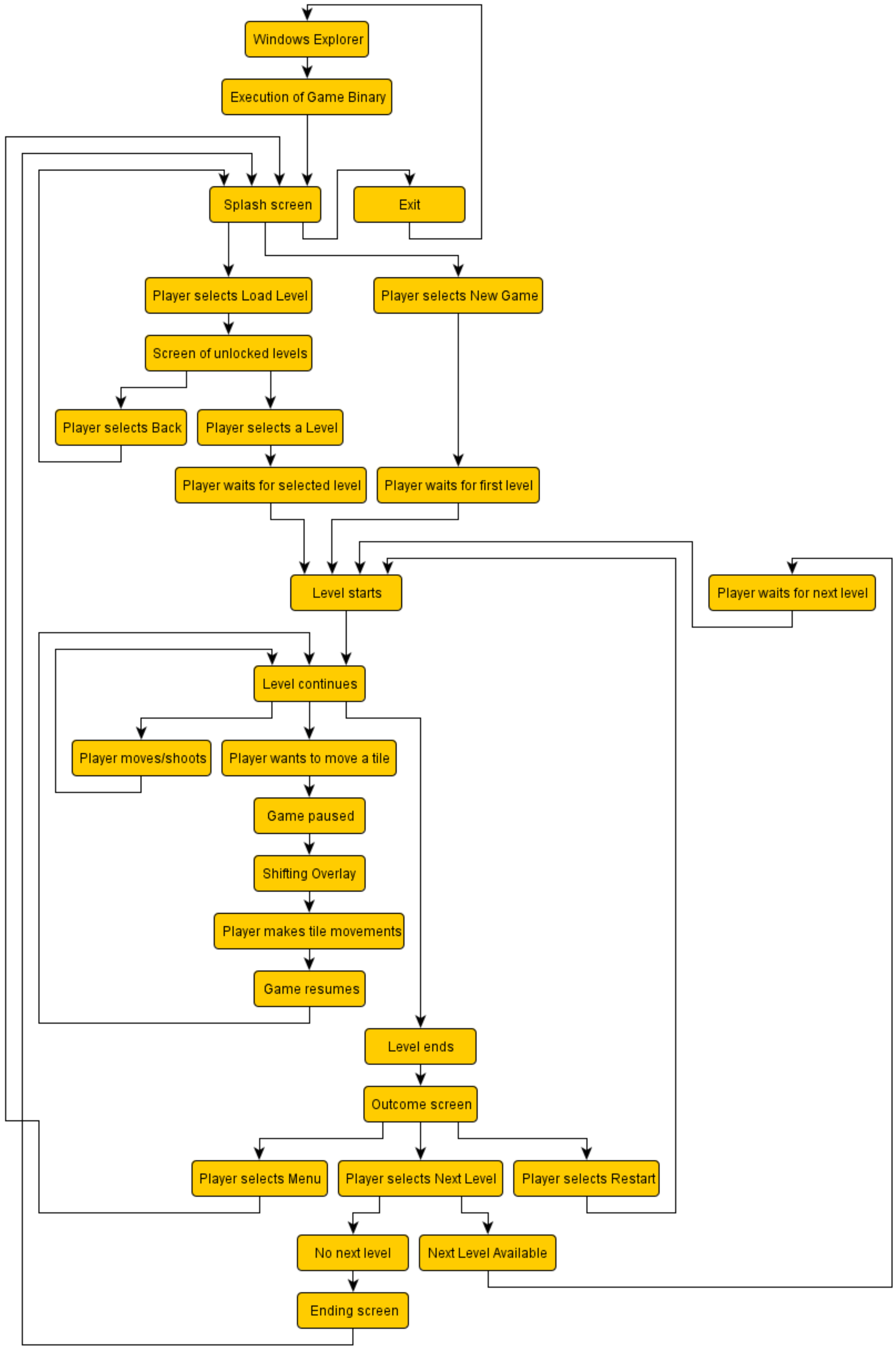

Figure 4.5.a - Flowchart of user experience playing the game

5 Game Characters

5.1 Character design

In game description and characterization is performed entirely through sprites, their animations, and their movement behaviours. All non-player characters are hostile to that of the player.

5.2 Player Character

The player character should have a humanoid appearance. From the top-down perspective we can probably see the character's head, shoulders, arms, and weapon. If animation is added, feet and legs would also be visible when the character is moving. The player character's movement is highly responsive to the inputs of the player through keyboard and mouse.

5.3 Non-Player Characters

An assortment of standard enemies should exist that track the player character and attack it in various ways (melee/ranged). These enemies don't require a humanoid shape, but should be distinct from each other so the player can anticipate what they will do. NPC movement is AI controlled, and can be fast/slow, erratic/direct, as required to give a persona to the particular enemy.

Boss enemies should have a more unique appearance, movement, and attacks, one unique boss per level would provide variety if development time permits. The final boss should receive more attention to appropriately raise tension.

6 Story

6.1 Overview

The game's story is fairly simple. The player enters in as the protagonist starts to combat the mind virus antagonist. The initial levels form a tutorial for the player in step with the protagonist's learning about his mind.

Tension picks up as the the levels become more difficult and the player encounters new and more varied enemies, along with progressively harder bosses.

The climax comes in the final level of the game, where the player must apply skills they've learnt previously to defeat the mind virus final boss.

The denouement is very short, consisting of the time it takes to move to the final exit portal after defeating the final boss.

6.2 Backstory

"You are a brilliant physicist plagued by a terrible virus of the mind. The madness haunts your dreams and is siphoning off your thoughts and memories. You've already forgotten the first few decades of your life and will forget everything you have ever known if you don't take action. The only cure is to delve deep within the maze of your own mind and rediscover your past, ridding yourself of the madness which has wormed its way into the deepest and darkest corners of your mind. You enter a deep meditation and and confront the nightmares, wondering if you'll ever wake up again…"

7 Game World

The game world is simple, given the scope of the project. Basically each level is a representation of a part of the protagonist's fragmented brain.

These world foundation concepts of thought and jumbled pieces is communicated through two primary methods. The first method is the gameplay mechanic involving sliding disjointed pieces, and the second is the music, which was selected for its iterative beat/melody.

The protagonist's mind--and thus the world--is under stress, and this is communicated through the shooting aspects of gameplay, and again, the music.

8 Media List

Interface assets:

- x6 Menu buttons (New game, Load Level, Exit, Menu, Next Level, Restart)
- x4 Tile shifting overlay icons (U,D,L,R)

Environments:

- Tile background(s)
- Possibly debris for blocking doors
- Collectable items
- Exit portal

Characters:

- Player Character
- Enemies
- Boss enemies

Animation:

- Projectiles (simple pulsing)
- Possibly for characters as well

Audio:

- x10 Songs from album *Kinetik* by Phutureprimative. Each approx. 5 minutes in length.
- x1 Song *Predatory Instincts (Elevator Mix)* by Phutureprimative. 2:24 in length. (For title screen)

9 Core and Optional Game Features

9.1 Core

- Level generation
- Rows and columns of tiles slide
- Player character moves in a reasonable manner

- End conditions
- Tile control overlay
- Item collection
- Enemies
- Shooting (projectiles)
- Simple menus

9.2 Optional

- Internal tile obstacles and randomly generated terrain
- Particle effects
- Animated sprites
- Level unlocks / level progress persistence

Part B - Progress and Planning

1 Development Status

1.1 Features completed

The game currently consists of a round character controllable by the player, who can move around the static maze. Integration with the Farseer Physics engine is complete, and all objects collide realistically. The player can bump into various “silly boxes” (animated boxes) floating around the maze.

The camera follows the player around with variable faithfulness, and can zoom in and out infinitely.

Objects are independently scaled and their attributes are abstracted to a separate file.

Tiles are randomly generated and placed in a grid.

There is a framerate counter, and the mouse coordinate to world coordinate conversion has been completed and the mouse coordinates in the world are displayed.

There is a background music track which loops in the game.

The floor has marking to indicate paths through the maze.

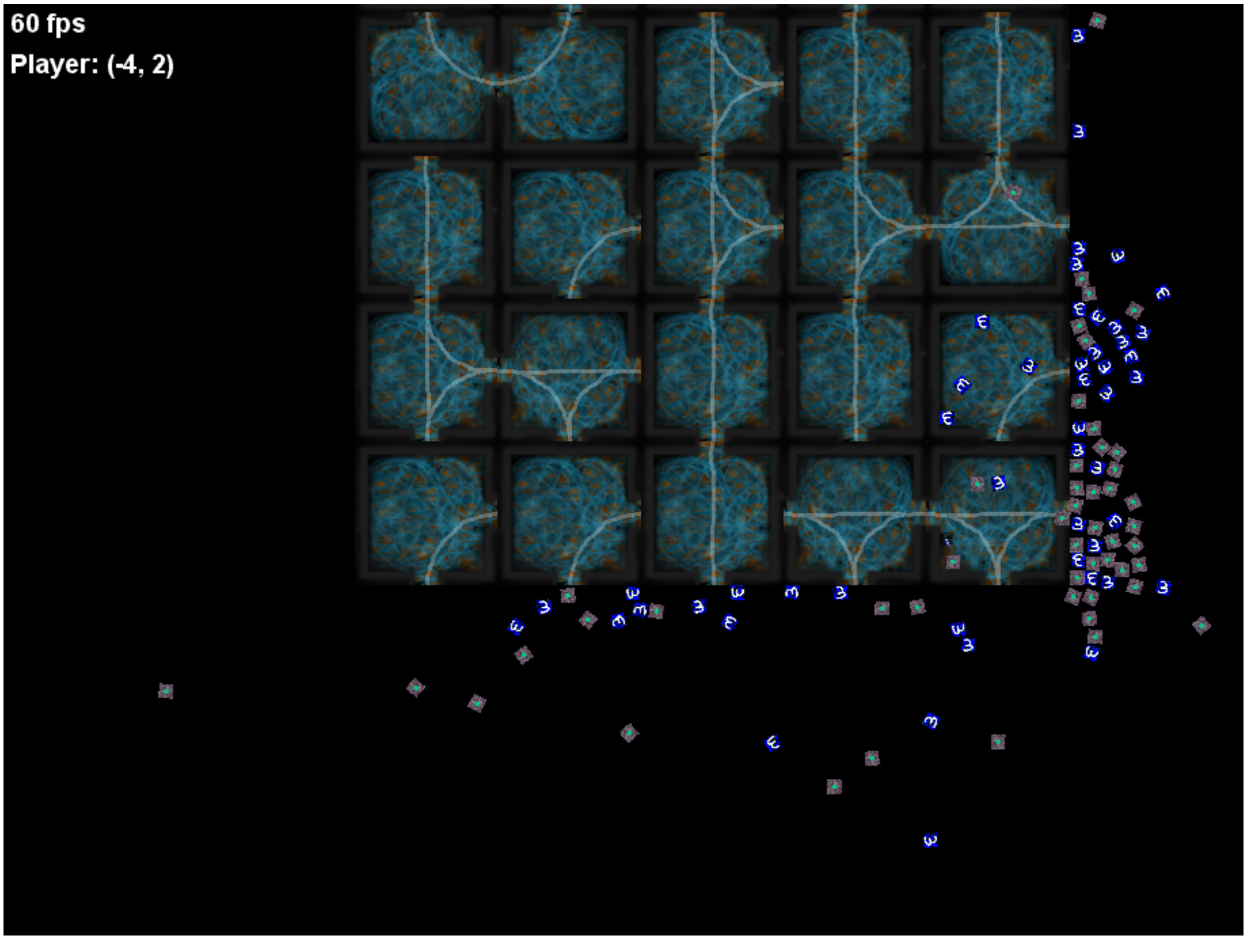

Figure 1.1.a - Screenshot of current implementation

1.2 Features to be implemented

-Weapons/combat
-Objectives (i.e. the objects to reach throughout the maze)
-Sanity/health
-Enemies and their behaviour
-Shifting of tiles
-Mini-map

1.3 Barriers to completion, and fallback

-How will we control the difficulty of generated mazes reliably? It is possible to simply hand design all mazes if no algorithm can be created in time
-How will we store the tile grid layout in mid-shift? It is possible to pause the game during shifts if needed

1.4 Known design problems

-Character movement is too lose. Due to lack of friction, so adding some would help.
-Mazes are not reliable in terms of difficulty of navigation. Possible algorithms are being investigated.

-It can be hard to find ways through the maze, so the mini-map's introduction will likely help with this issue.

2 Milestones to Completion

Week -3 (March 10 through 16):
-Complete implementation of single-level bare-bones game
 -Level generation
 -Rows and columns of tiles slide
 -Player character moves in a reasonable manner
 -End conditions

Week -2 (March 17 through 23):
-Complete implementation of Core feature set (as in section 10.1), including:
 -Tile control overlay
 -Item collection
 -Enemies
 -Shooting
-Playtest with multiple players

Week -1 (March 24 through 30):
-Fix issues identified in Week -2 playtests
-Implement Optional features that can be completed within the week (see section 10.2)
-Further external playtesting on core and optional features

Week 0 (March 31 through April 6):
-Finalize all features early in the week.
-Self-playtest for User Experience end-to-end.
-Acquire demonstration hardware (computer / headphones).
-Test game performance on demonstration computer.
-Make poster for demonstration.
-Deliver public demonstration at final show.

References

Fullerton, T., C. Swain, and S. Hoffman. *Game design workshop, a playcentric approach to creating innovative games*. Morgan Kaufmann, 2008. 396-99. Print.