R&H Games

Designers:

Harrison Telfer

Rodney Lewis

Version History

Version #	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	Harrison	10/16/2016	Harrison	10/16/2016	Initial version
2.0	Rodney	10/18/2016	Harrison	10/19/2016	various edits and additions
3.0	Rodney	10/21/2016	Rodney	10/21/2016	Updated for turn in. Added TOC and various edits/additions.
4.0	Rodney	11/2/2016	Harrison	11/2/2016	Various updates for beta testing day

1. Project Description

The game's current name is: **PlasmaTrekker**

Plasma Trekker is a fast paced top down 2d shooter where the user takes the role of a viral infection attempting to break down the defenses of the human immune system. As your presence becomes known, the number of antibodies will only increase until the virus is dealt with. Your goal is to build your score by surviving the bullet hell and to destroy as many antibodies as possible using the variety of ammunition at the your disposal.

2. Characters

- Player Character
  - *Name: The Metavirus*
  - *Objective: To infect the host body and defeat its immune system army.*
  - *Foils:*
    - *Immune system*
    - *incorrect mini virus matching*
- Enemy Characters
  - *Name(s):*
    - *Yellow Antibodies*
    - *Blue Phagocytes*
  - *Objective: To defend their body territory from outside invaders*
  - *Foils:*
    - *Metavirus*
    - *Correctly matched mini viruses*
    - *Blue Phagocytes*
      - *Fast moving enemies*
    - *Yellow Antibodies*
      - *Being alone*
    - *Red Parasite*
      - *Stationary*
    - *Green bacteria*
      - *Very slow*

3. Story

The Metavirus has invaded the sovereign space independent body-state of Frediconia. Its object is to take over the ruling entity. The current Frediconia ruling entity has already sent its immune armies to counter. A battle will soon commence.

4. Gameplay

4.1. Goals

- Defeat each enemy attacking the player.
- Do not allow the player virus to be annihilated.
- Match correct ammo mini viruses to enemy types.
- Survive as long as possible

4.2. User Skills

- Following many moving on screen objects at once
- Twitch dodging
- Quick matching colors
- Aiming with a mouse
- Predicting enemy movement patterns

4.3. Game Mechanics

Summary: The player will pilot the Metavirus around the arena map. Your goal will be to survive the throng of enemies by destroying them. Enemy types will only be destroyed by the matching colored bullet from the player (i.e. yellow bullet kills yellow enemy but not blue enemy). The sheer number of enemies will create the challenge of the player weaving between enemy bullet barrages.

The current build will consist of only endless waves of different enemy. The waves of enemies change with the number of player kills.

- Player
    - Health
        - 6 hits
        - Smaller collision box with every 2 damage taken
    - Ammo types
        - Yellow
        - Blue
        - Green
        - Red
    - Player
        - W move towards mouse pointer
        - Mouse pointer for aiming
        - Mouse button
            - Primary: Fire

- ● Secondary: cycle ammo type
  - ○ Collison
    - ■ With enemy bodies = damage
    - ■ With enemy bullet = damage
    - ■ With arena edge = stop movement
- ● Enemy
  - ○ Health
    - ■ Yellow = 1 hit
    - ■ Blue = 2 hit
    - ■ Red = 3 hit
    - ■ Green = 4 hit
  - ○ Ammo
    - ■ Always same black pellet
  - ○ Enemy AI and movement
    - ■ Yellow
      - ● Swarming
      - ● follow->swoop in attack->retreat->repeat
    - ■ Blue
      - ● Slow movement speed
      - ● move towards player
      - ● burst shots
    - ■ Red
      - ● Long range
      - ● Stationary
    - ■ Green
      - ● Very large and spinning
      - ● Very slow
      - ● Moving towards player
      - ● Burst in all directions
  - ○ Enemy types
    - ■ Yellow anti virus
    - ■ Blue phagocyte
    - ■ Red
    - ■ Green
  - ○ Spawning off screen
    - ■ spawning
    - ■ mix of types

4.4. Progression and challenge

There will be endless waves will be randomly generated for their content of was percentage of enemy types will be in them. The size of these waves will then be used as the main tool of difficulty ramp; increasing in size over time as the player kills more enemies. There is a progression in gameplay but not pursing story.

4.5. Level Summary

There will be a single arena like map where everything will take place. In this arena the enemies will spawn off screen and then move into the player's view. The arena will be static and the player will spawn in the middle during the start of the game.

4.6. Losing

In the current build the endless nature of the enemies will guarantee an eventual destruction of the player. Losing should be Fun.

4.7. Strategies/Motivations

Since the spawning of enemies will be done randomly around the arena, it would be best to keep moving and not staying one space for too long. It motivates that player to not sit in a corner and kill off enemies because you never know where they'll be coming from. You can afford to take a few hits before dying so this also could be taken advantage of.

5. Art style

This will be a 2d top down view game. Art style will be retro home made pixel art. These sprites will be made small (around 15x15 average size) and blown up in the Unity game engine. Colors will be very vibrant to help enhance the color matching game mechanic.

Art Assets: Paint.Net, Unity Marketplace

Example sprite sheet:
1. *Blue Phagocytes*
2. *Yellow Antibodies*
3. *The Metavirus 6 - 5 hp*
4. *The Metavirus 4 - 3 hp*
5. *The Metavirus 2 - 1 hp*
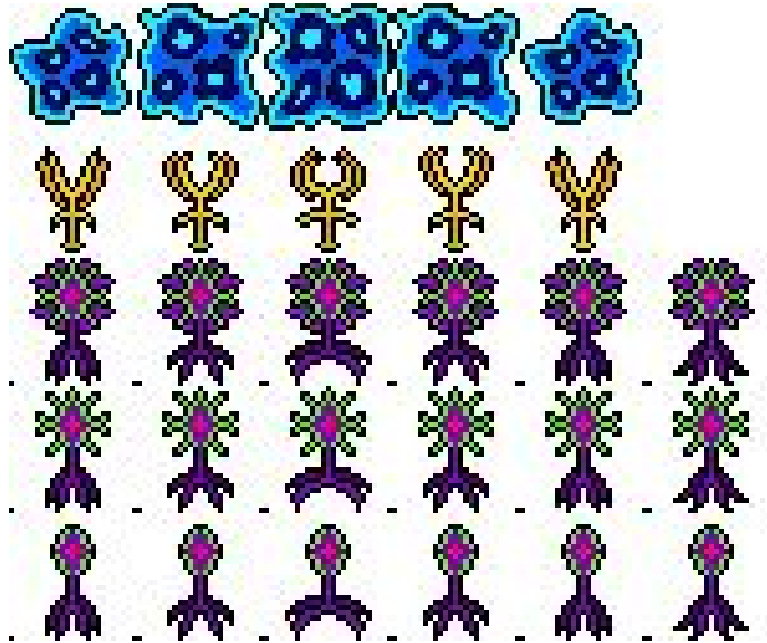
6. Technical description

6.1 Hardware

This game will require the use of a keyboard and a mouse to play.

Desktop requirements (minimum Unity requirements):

- OS: Windows XP SP2+
- Graphics card: DX9 (shader model 3.0) or DX11 with feature level 9.3 capabilities.
- CPU: SSE2 instruction set support.

6.2 Software

Will be developed using Unity 2D. Will only be compiled to be able to run on Windows based machines.

6.3 Algorithm Style / Game Decomp

Main production components:
- Player controls
  - Movement
  - Firing
- Player Sprites
  - Movement animation
  - Fire animation

- ○ Death animation
- Enemy Sprites
  - ○ Movement animation
  - ○ Fire animation
  - ○ Death animation
- Enemy AI
  - ○ Movement
  - ○ Firing
- Map
  - ○ Enemy spawn points
    - ■ Locations
    - ■
  - ○ Boundaries
  - ○ Art
    - ■ Spawn points
    - ■ Walls

Player control and fire will have to feel fluent as possible as this is the staple of the game. There will be separate updates to manage the rotation of the character and the actual X, Y movement. These will have to be coordinated to work together so that one doesn't go out of sync with the other.

Enemies will have different flight patterns and behaviors that will need to be accounted for. Blue is meant to move slowly and move towards the Metavirus. Yellow is meant to move (at least spawn in) packs and keep distance from the player and fire from a far. Will also have to prevent the enemies from spawning and then immediately firing on the player. If the enemy is not within the field of view of the camera, then they can not fire.

The map will have to handle prevent the player from going off of the map and the enemies from going off map again. Will have to establish boundaries and collisions for both the player and enemies. Enemies will temporarily have to have this collision disabled to enter the map from off screen similar to how fire should be disabled.

7. Additional ideas
- As the metavirus emerges victorious among agaisnt the immune army, it will take over territory. Each level takes place in a new region of the body. Each with their own effects, ending with the final showdown in the brain.
- Add more variety of enemies
- Make the map dynamic and add terrain to the map

- The sound effects will be mostly space ship like sounds and explosions. There will not be any ambient music. Plan to use the Lazer construction kit. It contains around 300 different sound assets from ship fire to a ship's engine starting up.
    - Sound assets: Unity Marketplace
    - Lazer construction kit. https://www.assetstore.unity3d.com/en/#!/content/15966