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**Java Bullet Hell**

*Mission Objective:*

A bullet hell is a type of game that involved multiple projectile-like objects being thrown at the player. It is meant to be difficult but remain possible if you have the reaction time to stay alive. In this instance, the game will have little entities that will attempt to shoot the player and take several hits to destroy.

*Software Specifics:*

We will be using Java as our main language for this project. We will use JavaFX for the GUI, ActionListeners, and Sounds. We will be using GIMP and ASEPRITE for our art production needs, as well as Rytmik Ultimate for sounds production, complemented by Open Source/Legally Acquired sound samples.

*Task List:*

1. ***Setting up the Environment***
   1. Set up Asana
   2. Set up GitHub Repository
      1. Init Commit
   3. Write this Document
   4. Set up the UML
2. ***Project Overview***

We will have an application class that will initiate the program, as well as a controller class to manage it. We will be using JavaFX for our GUI, and as such we will be using a class named *MainView* to hold the stage. As aforementioned the *MainView* will not serve as much more than a stage holder, and a controller used to switch between the different scenes. We will be switching scenes through through the use of a method that takes a pre-set Enumerated value as a parameter. For the scenes, each will be in it’s own class, and will be named the following: *MenuView*, *GameView*, *EndView*, and *OptionView*. Each of the names are referring to the scene they are meant to represent. MenuView will be used for the Main Menu, and will contain buttons that lead to the *GameView* and the *OptionView* as well as a button used to make an alert telling the user about the game. It will also contain our games Title, “Java Bullet Hell” and have our icon/logo. Our *GameView* will be used to present the actual game to the user. It will contain methods to draw each of the elements necessary to achieve that goal including the player, each enemy, the projectiles, the player’s score and health. *EndView* will occur upon player death, and will provide two buttons, one leading back to the main menu, as well as one to exit the program. *OptionView* will contain two sliders, one for the difficulty which will affect the rate at which enemies spawn, as well as a sound slider to adjust how loud the game sounds are. We will also have model classes, as we need classes to represent. We will have an abstract class named Entity that enemies and the player will extend. This class will allow an easy way to draw health of both the enemy and the player, and will provide classes such as *shoot()*, and *takeDamage()*, as well as some others for easy funtionality implementation. There will also be a projectile class representing one projectile on the screen at a given time. It will have a time out variable after which it will disappear, alongside a damage value for the bullet. The bullet will also have a ProjectileType, so the program can differentiate between a player, and an enemy bullet. We will finally have a board, that will essentailly serve as a container for everything in the game.

1. ***Scope Exclusions***
   1. No Leaderboard/saving feature
   2. No definite game end other than death
   3. No Joystick compatibility
2. ***User Stories***
   1. As a player I want...
      1. To be able to launch the game
      2. To be able to see the controls for the game
      3. To have a fighting chance to live
      4. To see variety among the enemies
      5. To be able to see the game through, and not crash
   2. As a non-gamer I want...
      1. To have instructions
      2. A description of what the game is
      3. A difficulty slider
      4. A way to turn off the music, so I can listen to my own
      5. The game to run on my Windows XP Service Pack 2 laptop.
3. ***Technical Stories***
   1. *N/A*
4. ***Mock-ups***
   1. Mock-ups can be found [here](https://photos.app.goo.gl/gyjifhdg5kKZQxZD8), to prevent file bloat, as well as unneccessary downloads I uploaded some *very* rough mock-ups for the GUI.
5. ***Special Terms/Definitions***
   1. *N/A*