Cpt\_S 487 Course Project

Project Name: BH-STG: Bullet Hell Shooting Game & Level Interpreter

Team: SAJAN

Team Members: Nikita Fischer, Kadupitige Ashi Chamarasinghe, Sonam Yangtso, Alex White, Joesph Lewis

Our project is a bullet hell shooting style game that is designed after the Touhou Project of games. Using Monogame, we plan to apply various forms of Creational Patterns in order to flesh out and create a working product. As a whole, we plan to have our game perform a variety of functions. The game should, by the end of the semester, have a completely operational player character which can move in 8 directions as well as toggle between a slow and fast mode, an array of enemies who will appear on the screen after a given amount of time in various hordes, and bullets which shoot from not only the player but the enemies as well.

Our vision includes having an easy-to-use menu screen from which the user can select to play the game or quit entirely. By pressing the play button, the user will be taken to the first level game screen where they take on the role of the character shooter. As the user flies along, lower-leveled enemies will begin appearing in swarms of various formations (i.e. lines, diagonals, etc.). These enemies will take the opportunity to attack the player character by shooting bullets of their own. In response, the user acting as the main player will be able to fire bullets back at the enemy by clicking the SPACE bar as well as dodge the bullets/move-to-aim by making use of the keyboard’s WASD keys which allows the user to move in 8 directions. The user will also be able to toggle their speed from normal to fast by holding the left shift button, and the hitbox will appear when the shift button is being held.

The first phase will feature regular play along with a slew of grunts. This wave of enemies should last approximately 0 to 24 seconds in which a few special shaped grunts will fire their bullets in a triangular formative pattern while a line of smaller grunts with identical appearances to each other will fly around harmlessly before stopping at the end of the 24 seconds in a wall formation and firing singular round bullets at the player which will home in on the player.

The second phase features a mid-level boss. It will subsequently start once the enemies from the first wave exit, and this wave shall last for another 24 to 48 seconds. A singular special shaped enemy, the mid-level boss, will appear and begin firing bullets which spray out from the mid-level in a fan-like formation. This method of attacking shall last for 5 seconds before the mid-level boss will switch to a circular formation of firing (A.K.A. The bullets will fly out in all directions in straight lines emanating from the enemy). This method of firing will last for 1 second before the mid-level boss will use a combination of both prior stated firing formations

The third phase features more grunts yet again. This wave will overlap during the last second of the second wave and will last another 48 to 75 seconds. During this time, lower-level grunts will make an appearance and the identical ones will fly toward the player harmlessly while the special shaped ones will fire their usual triangular formation bullets that home in on the player’s position. This specific iteration of attack shall last about 8 seconds before the identical grunts will line up in a wall formation once more and fire singular bullets at the player that home in on the player’s current position. Once the time frame for the wave is up, all the grunts shall make an exit from the screen.

The fourth and final phase shall consist of the final boss. This wave will last 92 to 120 seconds. This boss will have two different stages of attacks. The first stage of attack consists of the boss flitting around the field and firing tightly formed bullets that take on the shape of a spiral along with spritz bullets that shoot out from the enemy in all directions. The spiral bullets will home in on the player’s position while the spritz bullets will fly off in linear directions. This stage lasts for 8 seconds. Once this time has passed, the formation of the boss’ bullets will drastically change. The bullets will now form a stationary circle around the boss and every couple of milliseconds the bullets will jitter and break off into double the amount of bullets that was formed originally. The circle, in response, will grow bigger as the bullets will follow their trajectories. The bullets are split into two different types, each following opposite diagonal trajectories. This stage will last for approximately 8 seconds. Once this stage is finished, the boss will revert back to the same method of shooting as described in its first stage attack and will last as long as the first stage of attack (8 seconds).

Once the game ends after the boss is defeated, the player will be redirected to the high score screen which will display their score. If the user is the one that is defeated, the user will be redirected to the Game Over screen which will also display their score.