High School of Electrical Engineering, Prague 2, Ječná 30

Information technology

Bullet hell game - Meowzard

Anh Vu
Information Technology
2024

Contents

1 The goal of the work

The goal of the work is to make a game where you shoot bullets to defeat your opponent the game should be program using design pattens. The goal is also to find out how jFrames and jPanel works and how to use them.

2 Software

Game was developed in IntelliJ IDEA using SDK version 16.0.2. To open a jar file in Windows, you must have the Java Runtime Environment installed. No external libraries were installed.

3 Game Description

This game is about finding the balance between shooting and dodging bullets.

Mechanics

1. Moving - you can move using the keys W – Up S – down A – Left D – Right
2. For Shooting you use the key L.
3. For Pausing the game, you use the escape key.
4. Enemies moving is decided via csv file in /res/Patterns/NameOfPattern.csv that contain x and y of where they are going. If it reaches last line, it goes back to the first line.
5. Power-Ups There are four of them Heal, Health up, Shot speed up, Projectile size up. To get them you have to touch them (all of their sizes are the same 32x32 pixels)
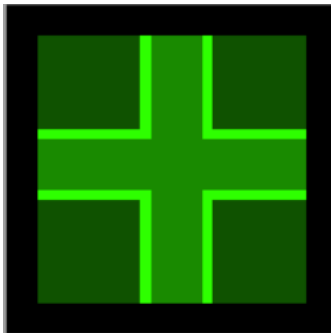   1) Heal – Heals the player for 3 hp.

Figure 1:Heal icon

   2) Health up – increases max hp by 2 (Doesn't heal).

Figure 2: Health up icon

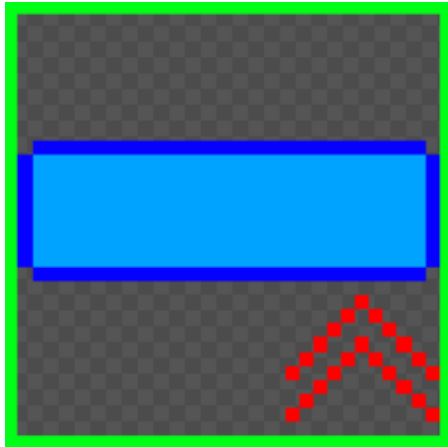3) Shot speed up – increases shoot speed up.

Figure 3: shot speed up icon
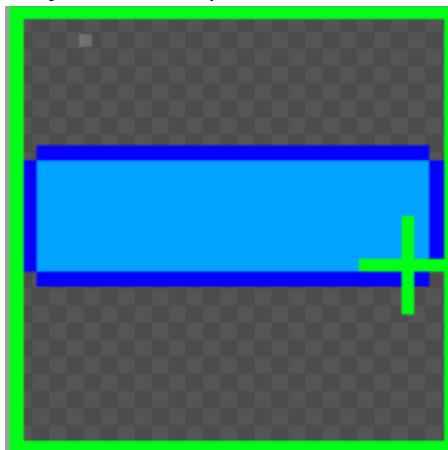
4) Projectile size up – makes bullets bigger.

Figure 4:projectile size up icon

6. Enemy behaviour is usually walking towards the targeted spot however two of the enemies.
   1) Bug occasionally stops moving. Also, he shoots 3 projectiles that are different speed.
   2) Skeleton lock in on the players y-axis but doesn't move on the x-axis. Also shoots two bullets at the same time.
7. You can make a wave by using a csv by inputting.
   1) Choice – can be ghost, octopus, bug, skeleton.
   2) X – where the enemy spawns on the x-axis
   3) Y – where the enemy spawns on the y-axis
   4) Speed – how fast will the enemy be.
   5) shootCooldown – how fast will the enemy shoot
   6) health – how many bullets can the enemy take before dying.
   7) patternFilePath – file path of the pattern they will be walking in
   8) scoreAfterDefeat – how many score will you get after defeating one enemy.

Example:

```
choice,x,y,speed,shootCooldown,health,patternFilePath,scoreAfterDefeat
ghost,1000,100,5,100,7,res/Coords/Pattern.csv,10
ghost,1000,132,5,100,9,res/Coords/Pattern.csv,10
ghost,1000,164,5,100,10,res/Coords/Pattern.csv,10
ghost,1000,196,5,100,10,res/Coords/Pattern.csv,10
ghost,1000,228,5,100,10,res/Coords/Pattern.csv,10
ghost,1000,250,5,100,30,res/Coords/Pattern.csv,10
ghost,1000,282,5,100,20,res/Coords/Pattern.csv,10
ghost,1000,314,5,100,9,res/Coords/Pattern.csv,10
```

Figure 5: Example of a wave.csv

4   Manual

To move you use the keys W – Up S – down A – Left D – Right for shooting you use the L key on your keyboard. If you need to do something else and not lose progress you can press the esc button or escape button to pause the game (if you exit you lose all progress) also if you customize the stages, there is a button in the main menu where it tells you if the waves were successfully loaded or not.

5   Conclusion

At start it was a nightmare I had no clue what I was doing and what all of it meant but once i looked at few tutorials I started to understand how to work with jFrames and I got the hang of it everything else went pretty smoothly, and I feel like I gained a lot of experience from this project well if I managed my time better I would definitely had more things to add.

6　Credit

The one who made the font for victory and game over - https://www.dafont.com/deep-hero.font