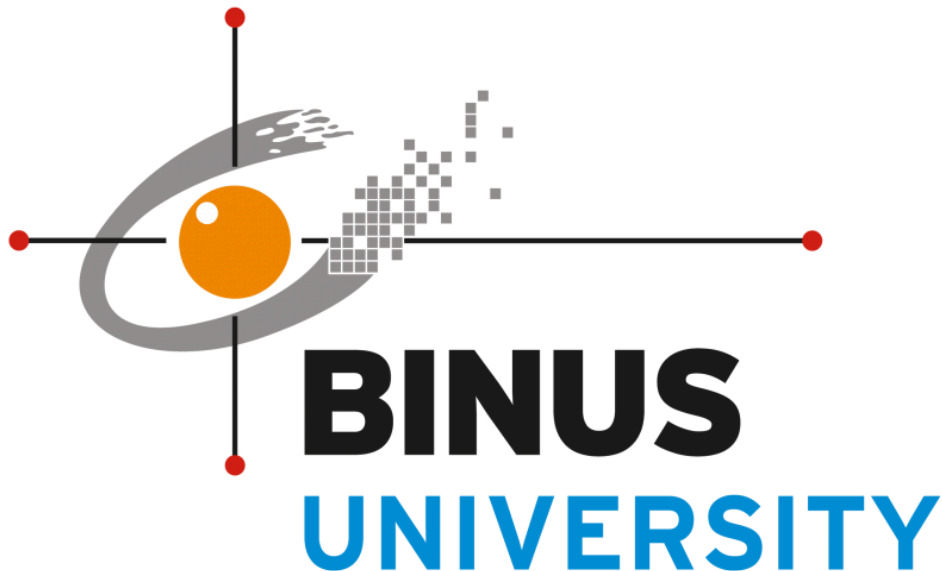


# **ALGORITHM AND PROGRAMMING**

## **FINAL PROJECT REPORT**

Lecturer:

Jude Joseph Lamug Martinez, MCS



Written by:

Christian Salomo Tasmaan - 2802546065

**SCHOOL OF COMPUTING AND CREATIVE ARTS**  
**BINA NUSANTARA UNIVERSITY 2024**

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## **B. CHAPTER 1 - PROJECT SPECIFICATION**

### **1. Introduction and Background**

For my final project, I decided to make a simple turn-based RPG game. Before I decided to make an RPG game, I tried to search online for tutorials and guides on how to make a game with the pygame module. There were lots of guides for making games using pygame, starting from platformers, farming simulators, side-scrollers, and many more. But one particular guide stood out. It was a guide on how to make a top down turn-based RPG game.

And so I started watching that playlist. I found it very interesting, so I decided that I'd make it myself. I have always been a fan of turn-based games, although I have only played a few that I found interesting, such as *Darkest Dungeon*, *Library of Ruina*, or *Inscription*. I've just been naturally interested in turn-based games, so when I was given the opportunity to create one, I took it almost instantly.

The game I created isn't much by any means, it doesn't have any items or class synergies or anything because I do not have the time nor skill to create such a game. But it turned out pretty well, and as a fan of turn-based games, I am quite proud of my creation.

So to explain my game briefly, you create a character, and assign stat points to them using your mouse. After you enter the game world, you run around the map with the W, A, S, D keys or arrow keys in hopes of encountering an enemy. Once you do, you will be given a series of options. Those options are: to attack, to use mana or health potions, to flee, or to use one of four spells. After using one of your options, your turn will be given to the enemy. This cycle repeats until either side is defeated. If you win, you will gain experience points that you will then use

to level up once you reach a certain amount. Your main objective in this game is to simply level up.

## 2. Modules Used

- pygame
- random
- Pytmx

## 3. Important Files/Folders

- main.py
- game.py
- config.py
- create.py
- battle.py
- battle\_complete.py
- orc.py
- sprites.py
- player.py
- camera.py
- action.py
- level.py
- salmonella.py
- game\_over.py
- menu.py
- state.py
- support.py
- title.py
- The entirety of the assets folder

## 4. Essential Algorithm

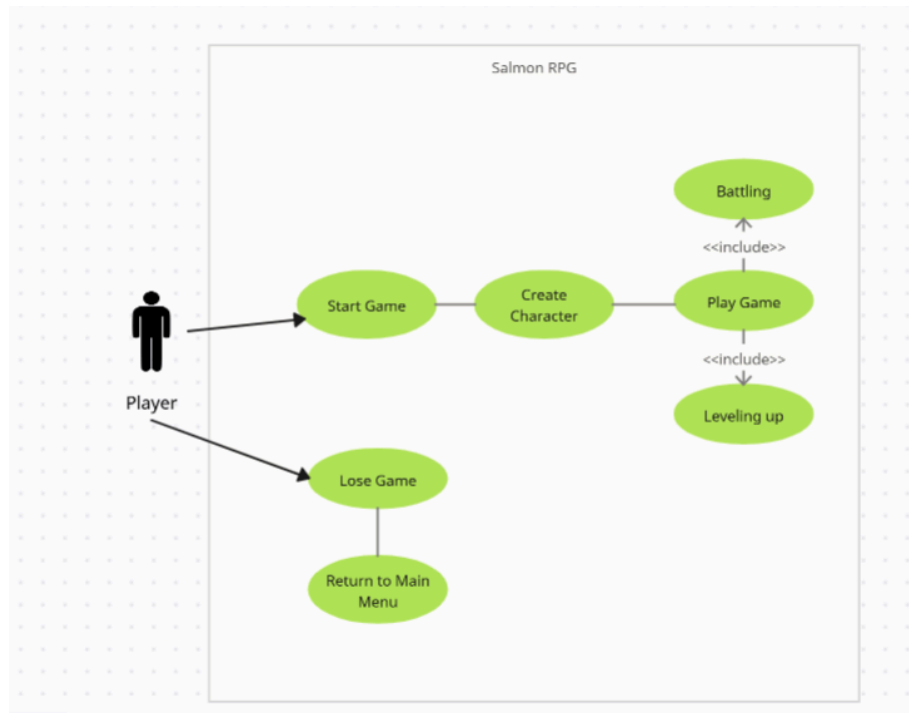
Essential algorithm and it's explanations can be accessed here:

[📖 Salmon RPG Game Explanation](#)

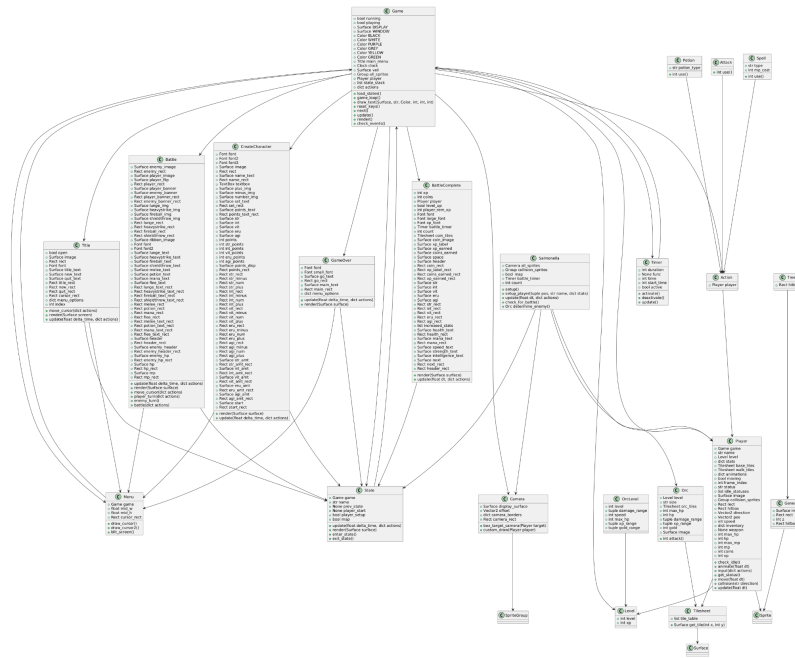
I decided to link the document so that the report can remain short and simple. I also put it up on GitHub.

## C. CHAPTER 2 - SOLUTION DESIGN

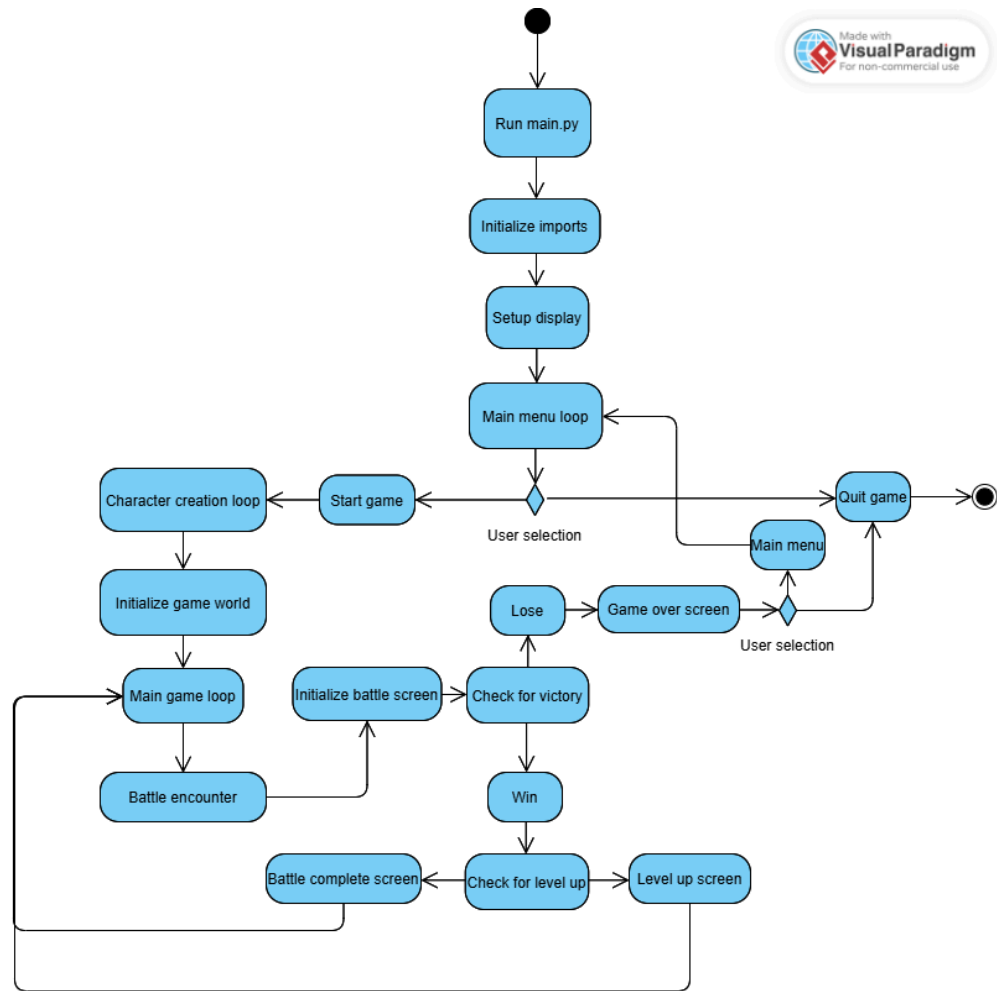
### 1. Use Case Diagram



## 2. Class Diagram (Forgive me for the poor picture quality, it was simply too big)



### 3. Activity Diagram



## **D. CHAPTER 3 - EVALUATION AND REFLECTION**

### **1. Evaluation**

There is much to be learned from my experience, starting from time management. I felt like time management played a key role in the success of my game. I put in some comments in the code saying that, “I did not finish this feature because I had no time,” and that saddened me a bit, knowing I could've added more features if I had better time management.

Other than that, realism is also important. I went into this project dreaming of creating a very complex and cool game, and without me realizing, I had spent a lot of time just thinking of what I wanted to make, instead of just picking something and trying to create it with the best of my ability. I learned that sometimes, you just have to stop yourself from creating too many ideas, and start working on one, and sticking to it.

### **2. Reflection**

I am very grateful for this opportunity as it increased my skills in various aspects. It has improved me as a person greatly. I feel proud of my work, considering that I had zero experience in coding when I started out. I also feel like creating a project like this takes a lot of effort, and I have learned to further appreciate those who do this for a living, because it is not easy by any means.



## E. EVIDENCE OF WORKING PROGRAM

### 1. Screenshots



Title screen



Character creation screen



Game world



Battle screen



Battle complete screen



Level up screen



Game over screen

## 2. Demo Video

The link to the demo video: [📺 demo.mp4](#)

## F. REFERENCES

Pygame Turn-Based RPG Codealong by aprilmaycodes

<https://www.youtube.com/playlist?list=PLutR-qDsVnKgzcqIHnZTv2lMxC2DoYLI>

Music:

- The Legend of Zelda Overworld Theme  
<https://www.youtube.com/watch?v=lpEzYEOV9qY>
- Love Like You - Rebecca Sugar  
<https://www.youtube.com/watch?v=eBVXmZA-rIQ>
- Some pokemon battle music I took from youtube but I forgot the link

All image assets are taken from itch.io.

Font used in game:

- <https://www.dafont.com/8-bit-hud.font>