Project Title: Space Invader Game

Duration Covered: 21 September – 5 November

Group Members: Raid, Yasir, Ashfaq and Me (Rejoan)

WEEK 1 (21 SEPT – 27 SEPT): TEAM FORMTION

On the first day of class, our sir asked us to form groups of at least three members for the semester project. I asked my classmates and formed team with Riad , Yasir and Ashfaq. On that day, we decided that, we will do an unique project that will amazed everyone. After some days, we decided to make a Space Invader Game. We decided that, we will try to create the game as a java game. We decided that each of us would first create our own version individually using C, and later we would select the ideas and combine them into one final version.

WEEK 2 (28 SEPT – 3 OCT): CLASS BREAK AND RESEARCH

This week the classes were off, so I used the time to do additional research and learning for the project. I searched on AI on to create on how to create small 2D games using C and I found a Library on online **Raylib** which I can use for the project. Besides I studied how graphics libraries like **raylib.h** or other modern alternatives can be used. I configured the project's build options, which was a new process for me. I had to learn how to tell the compiler where to find the **Raylib** include files and how to tell the linker where to find the lib files.

- I encountered a major blocking error: ld.exe: cannot find -lopengl32.
- After troubleshooting, I learned that my project not only depends on Raylib but that Raylib *itself* depends on other system libraries like opengl32, gdi32, and winmm.
- **Solution:** I solved this by adding these required libraries to the "Linker settings" tab in Code::Blocks and also adding the path to my compiler's lib folder.

By the end of the week, I had a working program that compiled successfully and opened a blank 1920x1080 window with the title "Space Invaders".

WEEK 3 (4 OCT–10 OCT): TEAM AND PROJECT SUBMISSION

On 7 October (the 4th class), we submitted our team and project title online in Google spreadsheet. After submission, I started setting up my C environment in Code::Blocks. I tested sample codes for initializing graphics mode and checked whether the screen and keyboard inputs were working properly. I also started sketching the basic layout of the game the player at the bottom, enemies at the top, and bullets moving upward. It was my first step toward implementing the real game.

WEEK 4 & 5 (11 OCT– 25 OCT): GITHUB SUBMISSION AND PLAYER MOVEMENT

On 14 October (the 6th class), we submitted our GitHub project link. By this time, I had already written the initial part of my code, focusing on player movement. I implemented left and right movement using arrow keys and tested screen boundaries. I also tried adding a shooting function using the spacebar, where a bullet moves upward. I faced some difficulties with adding libraries, but with help from my friend’s suggestion, I was able to fix those and make the code run successfully. Creating the player object, handling input, and basic game logic.

With the environment stable, I moved on to creating the player and making it interactive.

- Task 1: Creating the Player
- Task 2: Implementing Player Movement
- Task 3: Refining Movement and Bug Fixing
- Task 4: Improving Player Design

WEEK 6 (26 OCT–5 NOV): TESTING, DEBUGGING, AND FUTURE PLANS

By this week, my individual version of the game was working well the player can move, shoot, and destroy enemies, and the score updates correctly. I focused on testing and debugging to fix minor timing and display issues. Now our team is preparing to review everyone's version. We plan to combine the best parts of each project better visuals, smoother movement, and cleaner code to create one final, high-quality game, In sha Allah. There are still some improvements I want to make personally, such as adding more levels, a game-over screen, and possibly some background visuals.