Space Ship Battle Game – Assembly Language Project (Irvine32)

**Introduction**

The 'Space Ship Battle' game is a real-time, text-based shooting game developed using Assembly Language with the Irvine32 library in Visual Studio. It provides a console interface where a player controls a spaceship and tries to shoot down enemy ships that descend from the top of the screen. The game demonstrates core concepts of assembly programming such as input handling, cursor manipulation, loops, procedures, and basic game logic.

**Platform and Tools**

- Visual Studio

- MASM Assembler

- Irvine32 Library

- Windows Console (Text Mode)

**Game Overview**

In this game, the player controls a spaceship represented by the '^' symbol. Enemies are represented by 'V' and bullets by '|'. The player can move left and right using the arrow keys and shoot by pressing the spacebar. The goal is to destroy enemies before they reach the player's position. The game is divided into three levels, each increasing in difficulty.

**Controls**

→ Arrow Keys – Move the spaceship

→ Spacebar – Fire bullet

→ ESC – Exit the game

**Game Characters (Symbols)**

→ Player Ship: ^ or <^>

→ Enemy Ship: V or \*

→ Bullet: |

→ Empty Space: . or (space)

**Technical Concepts Used**

- Keyboard Input (ReadKey)

- Cursor Movement (Gotoxy)

- Screen Output (WriteChar, WriteString)

- Delays (Delay)

- Randomization (RandomRange)

- Procedures and Modular Code Structure

**Game Levels**

**Level 1: Beginner Level**

This is the easiest level where enemies appear slowly and descend one row at a time. There are fewer enemies and they shoot less frequently. The player needs to eliminate 5 enemies to pass this level.

**Level 2: Intermediate Level**

In this level, enemies appear more frequently and move side-to-side as they descend. They also shoot bullets downward. The player must avoid enemy fire and shoot 10 enemies to proceed to the final level.

**Level 3: Advanced Level**

This level is the most challenging. Enemies spawn faster, move in random directions, and shoot with increased frequency. The player must destroy 15 enemies while avoiding intense enemy fire to win the game.

**Conclusion**

The Space Ship Battle game project is a fun and educational way to explore low-level programming with Assembly. Using Irvine32 simplifies complex operations, allowing students to focus on logic, data handling, and modular program design. The three-level system ensures progressive difficulty and a complete game experience.