Alien Invasion Game Using Python

Submitted in partial fulfillment of the requirements of the degree of

Bachelor Of Engineering

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Project Report Approval

This project report entitled: "**Alien Invasion Game Using Python"** by Mr. Atharva M. Birje (10),Mr.Vinay R. Pawar (51) Mr.Koustubh V. Raorane (60),Mr. Rahul A. Haryan(26) is approved for the degree of Bachelor Of Engineering in Computer Engineering for the academic year 2022-2023.

Examiners

1. ----------

2. ----------

Date:

Place:

Declaration

We declare that this written submission represents my ideas in my own words and where others' ideas or words have been included, we have adequately cited and referenced the original sources. We also declare that we have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. We understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

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Date :

CERTIFICATE

This is to certify that the project entitled "**Alien Invasion Game Using Python**" is a bonafide work of "by Mr. Atharva M. Birje (10),Mr.Vinay R. Pawar (51)Mr.Koustubh V. Raorane (60),Mr. Rahul A. Haryan(26) " submitted to the University of Mumbai in partial fulfillment of the requirement for the award of the degree of "Undergraduate" in "Computer Engineering".

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Abstract

Project entitled “Alien Invasion Game” is a 2D game in which the aim is to shoot down the fleet of aliens as they drop down the screen in levels that increase in speed and difficulty.

We as students of computer engineering are making the project so as to increase the productivity of the students and common people. This project is coded in pygame module, PYTHON to make it user friendly and responsive. That means this software is easy to operate on a web browser.

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Chapter 1

1.1 Introduction

Alien Invasion is a 2D game in which the aim is to shoot down the fleet.It require keyboard to play. Game can be played offline. You control small spaceship and shoot aliens. Each new level introduce new kind of alien, of alien as they drop down the screen in levels that increase in speed and difficulty.

Use left and right arrow keys to move ship. Use spacebar to shoot bullets Aliens cause damage to ship when they are too close Life indicator is at upper left corner.

1.2 Aim and Objectives

Aim of proposed system is:

To destroy the alien fleet from attacking the space ship, make a game that can be played on low end devices

.**Proposed System achieves following main Objectives:**

1. To give enjoyable moment to a player

2. Stress reliever.

Chapter 2

2.1.Literature Review

Sr. No.	Title	Author	Contribution of Author
1	Python Crash Course	Eric Mattes	Author has developed a game alien invasion

2.2 Existing System

The cheapest graphics card you can play it on is an NVIDIA GeForce 7200 GS. To play Alien invasion you will need a minimum CPU equivalent to an Intel Pentium 4 4.00GHz. You will need at least 386 MB of free disk space to install Alien invasion. Alien invasion system requirements state that you will need 200 mb graphic memory.The primary disadvantages in the modes of existing framework are:

- Static perspective on plan which can't pass on
- Data like tallness and expansiveness can't be known.

Chapter 3

3.1. Problem Statement

As of today's game is more FPS based, many people are not able to play it as their graphical requirements are top-notch. To solve this problem we create a basic free game which can be accessed by any peripheral device.

3.2. Scope of Project

Alien Invasion Game Using Python game based on python and has been developed on and for the windows and later version environments .

3.3. Proposed System

The proposed system is build using **PYTHON** and **pygame module**. This work proposes a smart virtual gaming experience where user can good time and have enjoyable moments .

Chapter 4

4.1. Methodolgy

Inputs for the system will be product details (Play game, end game (ESC) The System contains many levels of game for users. It is low graphical game for low end pheripheral devices.

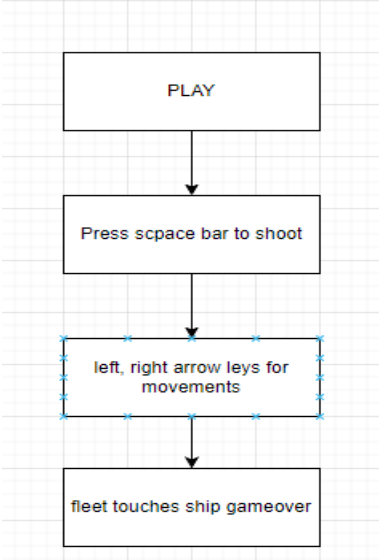


Fig4.1 flow control of user

1. **PLAY**: To start the game and destroy the fleet trying to invade the spaceship territory.
2. **Space bar**: After entering the game press space to shoot at the enemy fleet to destroy and advance to next level.
3. **Left and right arrow key**: used for movement of the ship to destroy all the fleet so that Player advances to next level. As the level increases the speed of the ship movement also increases

4. **Fleet touches ship**: As the fleet touches the ship the ship loses its life it has total 3 number of lives.

Chapter 5

5.1. Hardware and Software Details

5.1.1. Hardware Requirements:

- Processor- Intel Pentium 4 or higher
- HDD – Minimum 10 GB
- RAM-Minimum 512MB

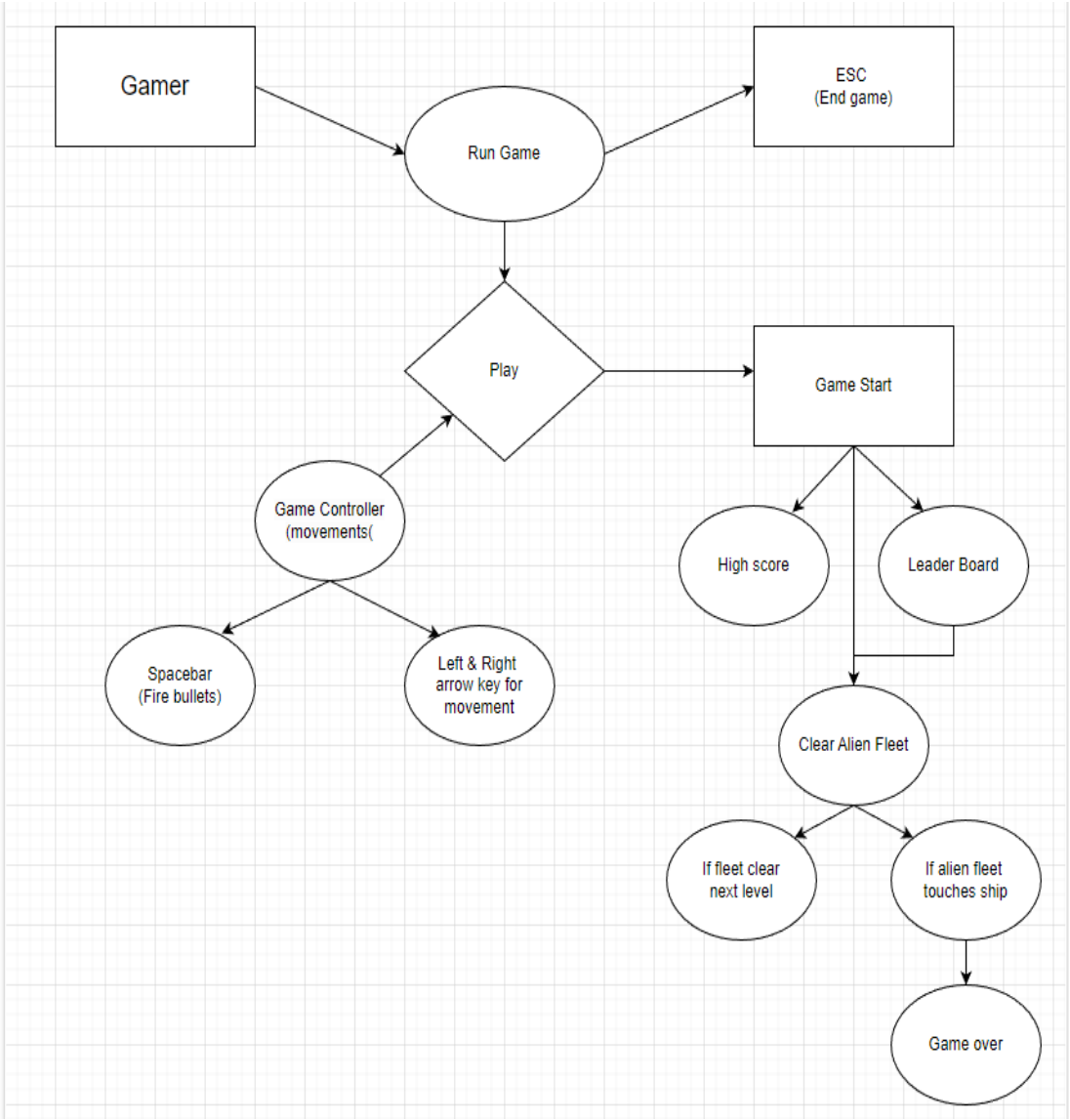
5.1.2. Software Requirements:

- Front End - Python
- Operating System- WINDOWS 7 and higher , MAC OS
- IDE – Visual Studio Code

5.1.3. Technology Stack:

- Language used: Python
- Packages/Module: Pygame

5.2. Project Design



Gamer: When the game starts the user gets the option to run the game.

Run game: After the game begins the user gets the option to end the game (ESC game) or play the game.

Play: The games begins when we press on play button.

Game controller: The user can control the movement of the ship by moving in the left and right direction.

Spacebar: Spacebar is used to fire the bullets from the ship to destroy aliens.

Left and right key: The user can move the ship by pressing the left and right button.

Game start: After the game starts High score and is displayed on the upper side of screen.

Clear alien fleet: When an alien fleet comes downwards if we clear all the alien fleet then we forward the next level or the fleet touches the ship then the game is ended.

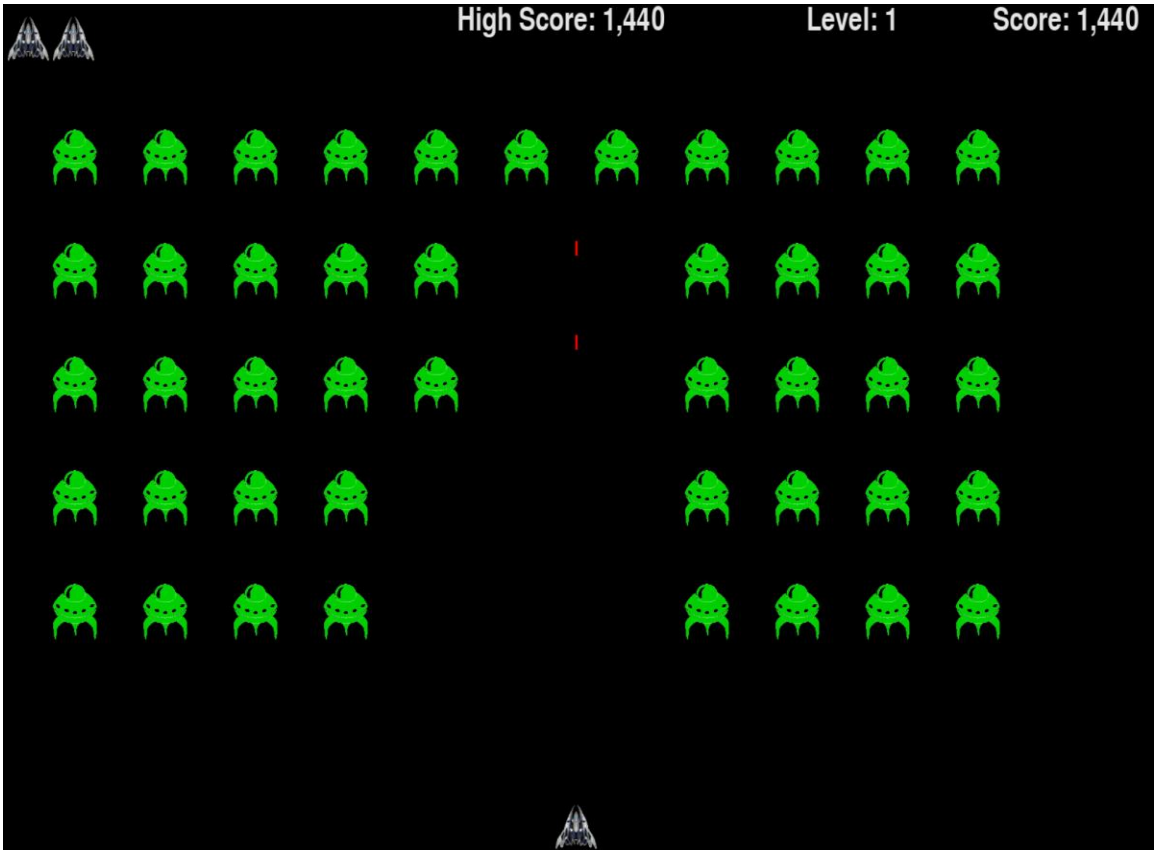
CHAPTER 6

6.1. Implementation

6.1.1 Starting game page

Fig (a) Play game screen , click on the play button to start the game

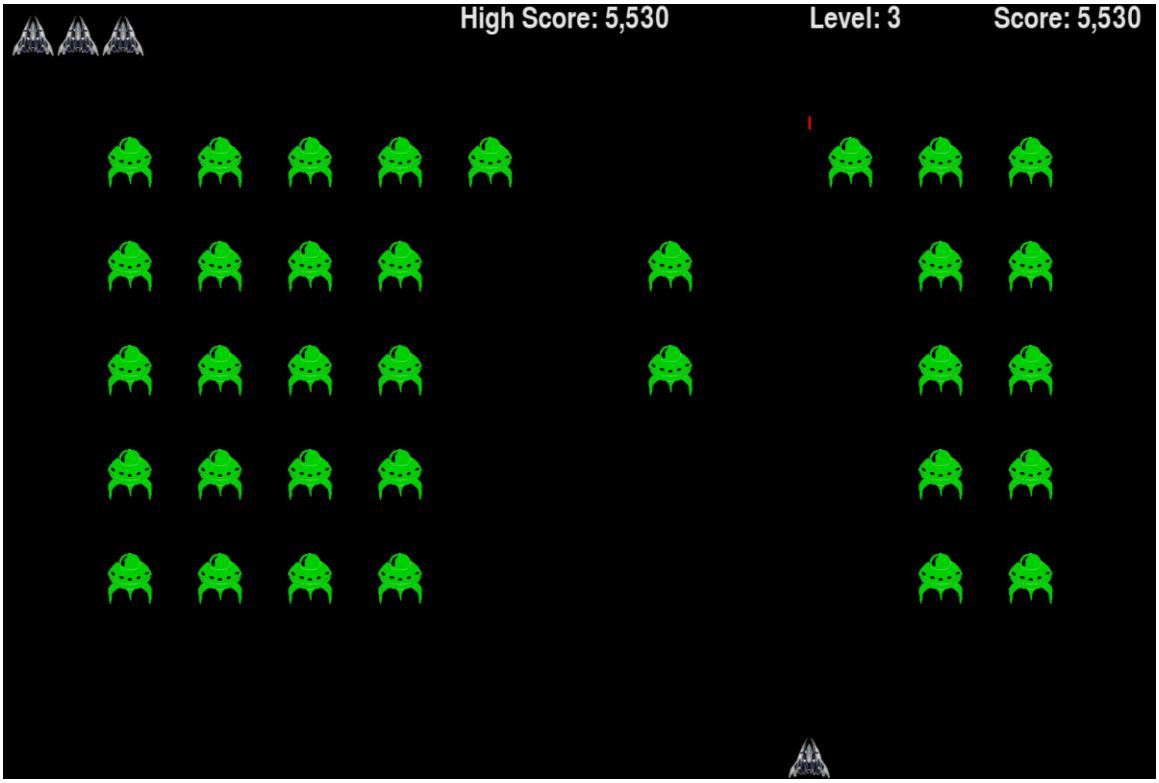
6.1.2. Firing and changing score:



Fig(b) Bullet Firing and changing Score

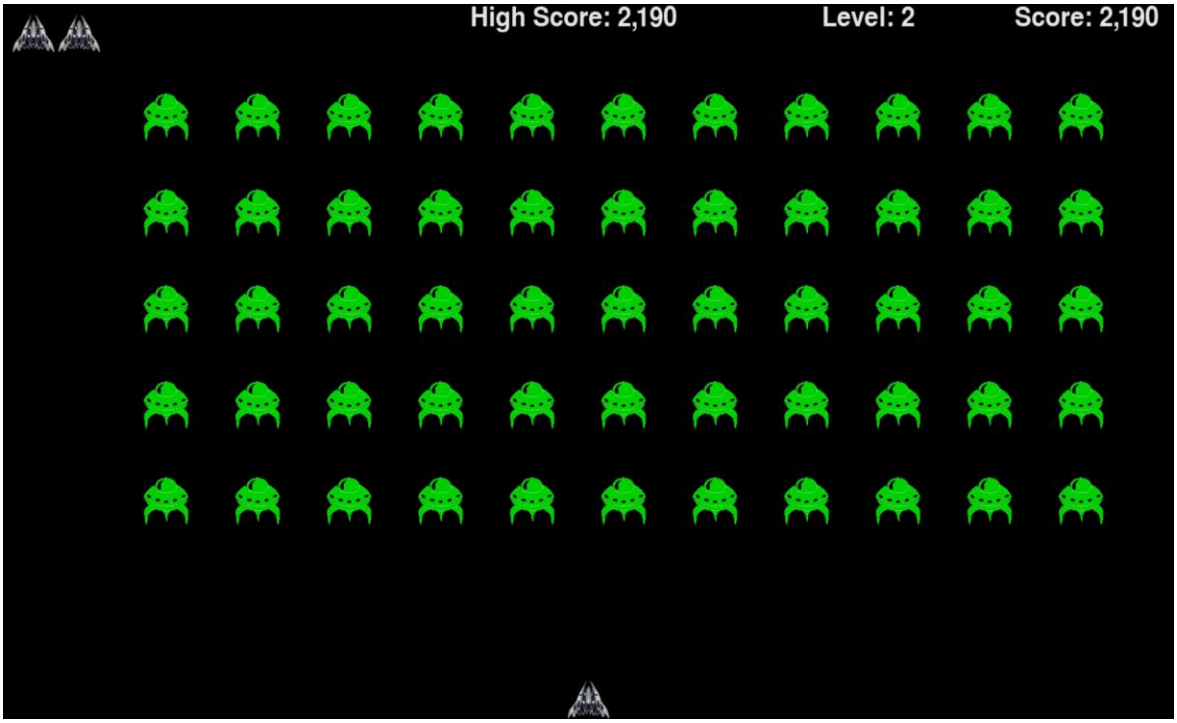
IMPLEMENTATION

6.1.3. Level change



Fig(c) After completing Fleet we enter next level

6.1.4. Game restarts



Fig(d) when fleet touches ship game restarts, player loses 1 life

CHAPTER 7

7.1 Conclusion & Future Work

We want to create a game that has a very interesting mix of inputs. In order to ensure that the game is fun, we want the difficulty of the game to scale linearly with the length of time/ skill of the player

REFERENCES

Research Papers:

ERIC MATTHES, "Python programmer": speacialist in pygame development Paper published in 2016, Sanfrancisco.

Links:

[1]https://nostarch.com/pythoncrashcourse2e