**Alien Invasion Game**

Timothy Ferguson  
Zhijin Jiang  
Brian Nordemo  
Matthew Yarab  
Adam Zuckerman

Submitted August 17, 2023

1. Abstract

This report includes information about Group B’s Alien Invasion game that was created for Professor Nicholas Houston’s CYBR 110 course at Norwich University. For this project we followed the guide in Chapters 12-14 in the book Python Crash Course, 2D edition, by Eric Matthes. This was the culmination of the 8 week curriculum of learning the Python programming language.

2. Requirements/Specifications

In order to run our program the user will need to have Pygame on their system. The various .py files that we created will need to be located in the same directory/folder in order for the program to run properly.

3. Design and Architecture

alien\_invasion.py

This is the main file to run the program. All other files are imported to this and part of the game function.

alien.py

This file is for how the alien will look and the creation of the fleet. This file also includes the movement pattern of the aliens

bullet.py

This file determines the size and behavior of the bullets that will fire from the ship

button.py

This file is the start button to begin the game and upon running out of lives will start a new game. Defines the size and color of the button as well as text to display on the button

game\_stats.py

This file defines the scoring and level as well as reset the stats upon starting a new game

scoreboard.py

This file reports scoring information; defines, displays, and updates the player’s current score, high score, and ships remaining to the player.

settings.py

This file is where you can adjust the size and color of screen and bullets. It also has the code to adjust the scoring scale and alien and ship speeds.

ship.py

This file manages the players ship, it gives the ability to receive input on controls from the player. If we wanted to ship to look different we would adjust the .bmp file here to get the desired look.

images-🡪alien.bmp ; ship.bmp

In the images folder we utilized two images ship.bmp for our player ship and alien.bmp for our alien fleet that we were supposed to shoot.

\_\_pycache\_\_

This folder is created by the Python interpreter when it imports a module. It contains the compiled bytecode of the module, which can be used to speed up subsequent imports of the same module

4. Testing / Quality Assurance

Here we will talk about adjusting the speeds and sizes of bullets that we tried to get a challenging but fun user experience.

-Should we include the potential change to having the fleet speed increase per level, with a decreased initial speed?

5. Project Management

Aug 2: Adam Zuckerman sends initial email to all group B members on Norwich.edu accounts

Aug 3: Initial meeting planned for Friday, Aug 4 via discord. Adam Zucerman, Matt Yarab, and Tim Ferguson are only members that replied able to meet. No comms with Brian Nordemo or Zhijin Jiang

Aug 4: Adam, Tim, and Matt talk through wavetops of project, Adam created github site to share files for group work <https://github.com/AMZ58/cyber101_final>

Aug 5 – 10: Collaboration and testing of code compiled and complete

Aug 13-17: Software report generated