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**Space Invaders**

**Description:**

**The goal of our project was to create an imitation of the game Space Invaders. We intended to have a user controlled spaceship. This ship should be able to move, shoot, and kill enemy aliens. The enemy aliens should be able to fire back at the player ship. There is a Pause and Resume button for player ease and additional features such as score ad shots fired for player knowledge.**

**Purpose of each file:**

**Python Files:**

**ex.py - *Full Python script to be ran for game play.***

**test.py- *File testing code for all functions. Functions that could be automatically tested have testing functions. Functions that could not be automatically tested are written as one docstring at the bottom of the file.***

**gui.py - *File that creates the original attempt for a GUI.***

**Sprite Files:**

**alien.png- *Enemy alien file.***

**bullet.png- *Enemy bullet file.***

***explosions.png – Explosion after kill file.***

**green\_bullet.png - *Player ship’s bullet file.***

**ship.png - *Player ship file.***

***ye.png – Second enemy file***

**Background Image Files:**

**backgroundGScreen.png - *Planetary background image***

**title\_scrn.PNG - *Image used for the game’s title screen***

**Sound Files:**

**digi.wav -  *Background music option 1 (Digital Love- Daft Punk)***

**hbfs.wav - *Background music option 2 (Harder Better Faster Stronger - Daft Punk)***

**inKilled.wav - *Sound played when enemy is killed***

**shoot.wav - *Sound played when bullet is shot***

**Other:**

**test\_writeup.docx - *Overview of what the project is, how it works, what it is made of and who contributed what.***

**How to run the code:**

**To setup before running Space Invaders you must download the arcade package from the Arcade Academy[[1]](#footnote-1) website. The arcade package has proven to be more streamline for those using Windows processing. When downloaded, Ctrl+Shift the PRESENTATION zipped file and run the entire folder in the Windows Powershell. This is pertinent because the Sprite PNG’s and sound effects are located in the master folder. When in the Powershell type “python ex.py”, this command will present you with the game screen. Move your mouse as the player ship, press pause and resume, and click your mouse on the screen to fire vertical bullets to kill your enemy aliens. Your score and shots fired will update automatically on the screen before you. (Note: the enemy aliens will fire back at the user; however, due to lack of time, no code has been added to kill the player ship).**

**Team member contributions:**

**Brigid: Research, test cases (test.py), final report**

**Caroline: Research, graphic design (background images and sprite images), audio engineering, python script classes and functions (ex.py in zip folder, except Explosion class), final report**

**Diego: Research**

**Neel: Research, original GUI interface idea (GUI.py in zip folder), Explosion class, contributed to game class (creation and use of second enemy, and implementation of Explosion**

**Explanation of Outside Code:**

The arcade package contains built-in functions. These functions are essential to creating and implementing any game using the class. Due to lack of time and member participation, we directly used the GUI example from the Arcade Academy website[[2]](#footnote-2). We edited the GUI slightly to fit the style of our project. Code from having enemies shoot at the player, explosions, mouse movement, animation, and sound ability are derived from the Arcade Academy API index and examples as well. When used, there are sources cited within the comments of the ex.py code file.

**Bibliography:**

“Arcade Package API.” *Arcade Package API - Arcade 2.0.9 Documentation*, arcade.academy/arcade.html#module-arcade.draw\_commands.

“Arcade Package API.” *Arcade Package API - Arcade 2.0.9 Documentation*, http://arcade.academy/examples/sprite\_explosion.html#sprite-explosion

“Arcade Package API.” *Arcade Package API - Arcade 2.0.9 Documentation*, arcade.academy/arcade.html#module-arcade.sprite\_list.

“Arcade Package API.” *Arcade Package API - Arcade 2.0.9 Documentation*, arcade.academy/arcade.html#module-arcade.window\_commands.

“Arcade Package API.” *Arcade Package API - Arcade 2.0.9 Documentation*, arcade.academy/arcade.html.

“Draw a Box with Nested Loops.” *Draw a Box with Nested Loops - Arcade 2.0.9 Documentation*, arcade.academy/examples/nested\_loops\_box.html#nested-loops-box.

“Have Enemies Randomly Shoot.” *Have Enemies Randomly Shoot - Arcade 2.0.9 Documentation*, arcade.academy/examples/sprite\_bullets\_random.html#sprite-bullets-random.

“Starting Template Using Window Class.” *Starting Template Using Window Class - Arcade 2.0.9 Documentation*, arcade.academy/examples/starting\_template.html#starting-template.

“Text Buttons.” *Text Buttons - Arcade 2.0.9 Documentation*, arcade.academy/examples/gui\_text\_button.html#gui-text-button.

1. <http://arcade.academy/index.html> [↑](#footnote-ref-1)
2. <http://arcade.academy/examples/gui_text_button.html#gui-text-button> [↑](#footnote-ref-2)