# Description:

Using Python’s Pygame (game engine library), Chris and I have recreated the original arcade game Asteroids, to the best of our abilities using vector graphics. Unfortunately, due to time constraints, our knowledge of Python and Pygame, and task brief constraints, the player’s Spaceship is not a drawn isosceles triangle like in the original game, and the voxel effect.

The main purpose of the game is to survive a barrage of asteroids by destroying them, thus earning points, as well as surviving and destroying randomly spawning UFOs’ that will fire bullets to destroy you. The points that you earn from destroying asteroids and the UFOs’ will be displayed if and when you die on the game over screen. Above all else, the main purpose of this game is for you to have fun and experience the popular arcade game on your laptop.

# Prerequisites:

To play this game efficiently the recommended device specifications are:

* A Mac or Windows OS.
* At least 4GB RAM.
* “x” Amount of Storage.
* For the code itself: Python, Pygame, Math Lib, Random Lib, OS Lib.
* A low-end laptop or PC (minimum) with a functioning keyboard and mouse/trackpad.

To create the game, the requirements are:

* An IDE such as Visual Studio Code, PyCharm, etc…
* Python, Pygame, Math, Random, OS Libraries.

# Installation:

To play the game, you just need to run the executable file (.exe for Windows, .app for MacOS), and the game will load without any problems. Alternatively, if you have an IDE and all the required libraries installed, open the program’s file, and run the Asteroids.py script and the game will load.

# Game Mechanics:

The main mechanics that the game features are:

* **Player Controls:** Using WASD, you can rotate 360 degrees, and travel in the direction facing.
  + **Rotation:** The player can rotate 360 degrees.
  + **Thrust:** The spaceship can accelerate in the direction its facing.
  + **Shooting:** The player can shoot bullets in the direction facing to destroy the asteroids and other entities.
* **Asteroids:** The primary obstacle in the game.
  + **Breakable:** All the asteroids can be destroyed by the player to earn points.
  + **Movement:** Asteroids drift in various random directions and speeds.
* **Enemies:** Flying Saucers that appear periodically.
  + **Movement & Shooting:** Saucers can shoot at the player’s spaceship.
* **Screen Wrapping:** Objects that move off one edge of the screen reappear on the opposite edge.
* **Score & Lives:** The player earns points by destroying asteroids and saucers but loose lives when colliding with them.

# Planning (Gantt Chart):

