This project is a space shooter game made with pseudo-3D through a star field. In order to do this, the first thing I did was to program the actual star field. The star field is made of a bunch of random circles. Every clock tick, new stars are created with a random dx, dy, and start radius. It also spawns in a semi-random location, on one of two circles. The inner circle stars move faster while the outer circle stars move slower. Also over every clock tick, the stars update depending on what its dx and dy are, and they are also removed once they are off of the screen. For the interactive star field, each key press command modifies how the star changes (ie: dr, dy, dx).

Then, for the actual pewpewpew game, I put the basic star field without any interactive tools as the background of the ship. To get the ship to adjust for the pseudo-3D, I changed the sizes/coordinates of each of the ship points as the arrows were pressed. Then for the bullets to shoot towards the middle, I took the dx and dy from the ship’s x and y (which was the nose) to the center of the screen. For the enemy’s path (idea creds to jvanbure) I used partial functions and time to move the enemies, so they followed the path of the function towards the center. To make the enemies shoot, the procedure was similar to the ship bullets but with a different destination and source. Then to make the ammo and health boxes, I had them spawn (randomly) if certain conditions were met (so the player wouldn’t overload on ammo and health). There was a lot of collision detection to figure out when the bullets hit different things, figure out when the ship hit the boxes etc.

I used pygame for this game. The reason I chose pygame was because of its sprite handlings. Using TKinter/basic animation would have lagged more with collision detection. Also the number of stars in the star field lagged basic animation due to the amount of objects to keep track of at one time.

My user interface is a select/click menu because it seems to be the most intuitive- when a person sees a menu they click.

I analyze other games similar to mine in my comparitive analysis file.