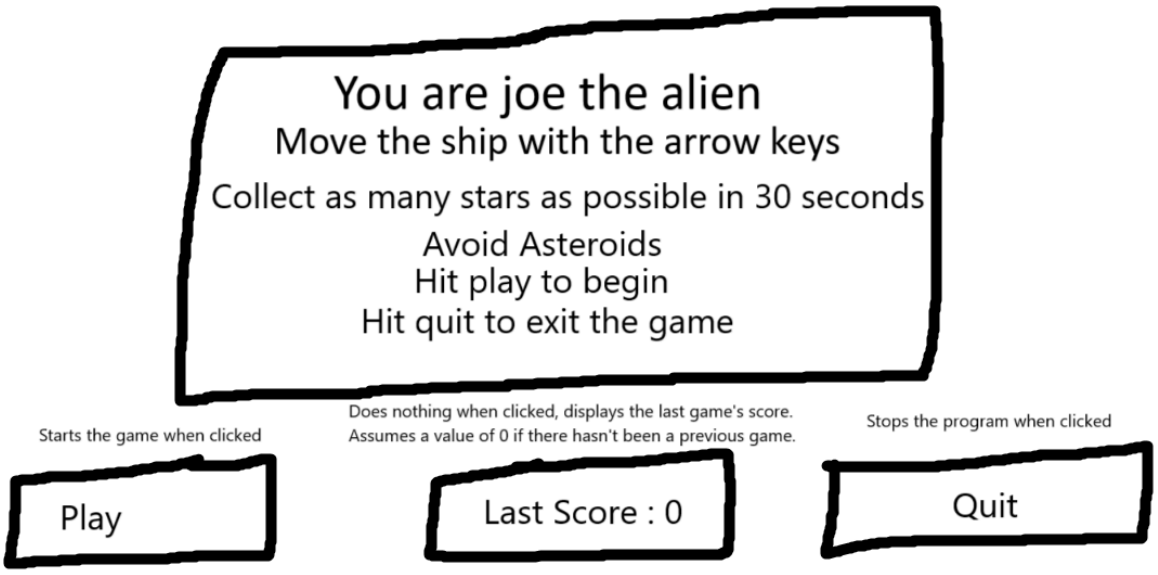
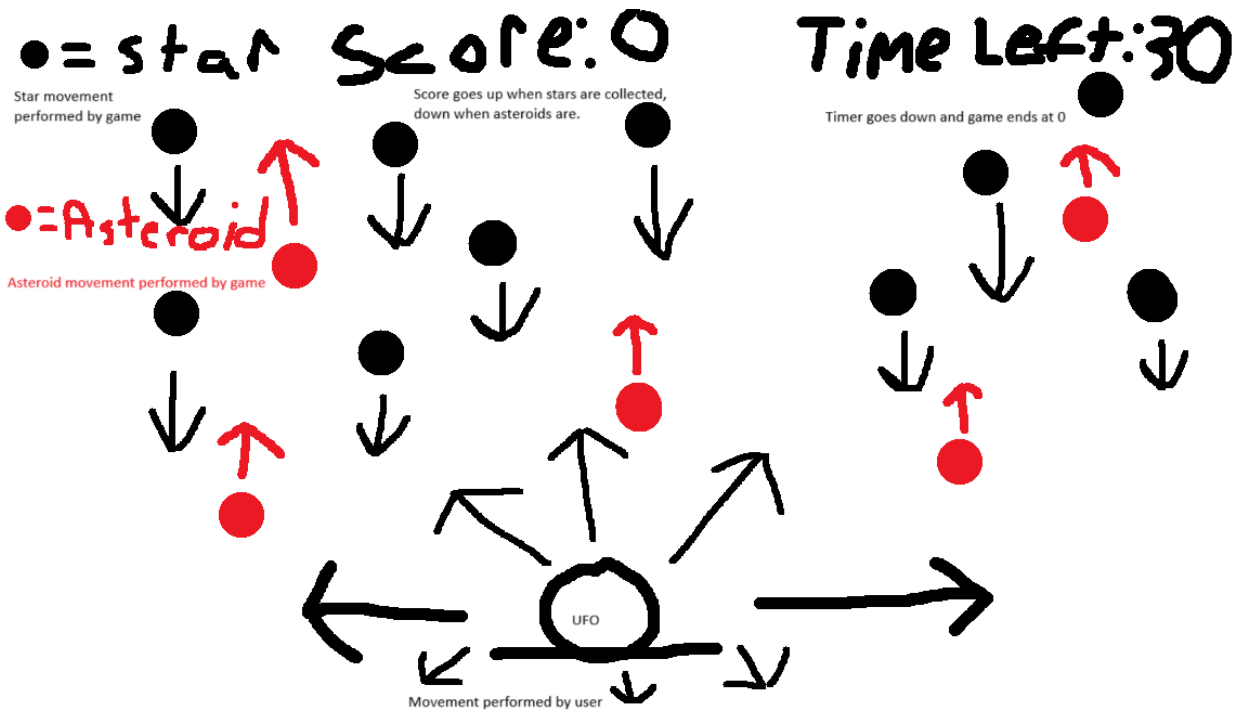
The main goal of this project is to create a game in which a singular object controlled by the player collects other objects in order to achieve some sort of a goal. In the case of my project, the player controlled object will be a spaceship/ufo and the collectibles will be stars. Below is a diagram that will help visualize the final product.

Intro/Instructions Screen



Main game screen



Pseudocode

Create a class for the star called “Star”

Create an initializer function

Use the star’s sprite png

Set the star’s size

Set the star’s minimum and maximum speeds

Run the reset function

Create the reset function

Set self’s y to 10

Set self’s x to a random integer between 0 and the screen’s width

Set self’s dy to a random integer between the minimum and maximum speeds

Create the check Bounds function

If self’s bottom is greater than self’s screen height

Run the reset function

Repeat the same process as the star for the asteroid

Change the star sprite png to the asteroid sprite png

Change the minimum and maximum speeds to negative numbers

Change the if statement in the checkbounds functions

If self's bottom is less than 0

Run the reset function

Create a class for the spaceship/ufo called "Alien"

Create an initializer function

Use the spaceship's sprite png

Set the spaceship's size to (80,40)

Set the Spaceships position to (320, 200)

Set the spaceship's move speed to 5

Create a function called "Process"

If the left arrow key is being held down

Move the spaceship left

If the right arrow key is being held down

Move the spaceship right

If the up key is being held down

Move the spaceship up

If the down key is being held down

Move the spaceship down

Create a class called "LblScore"

Create and initializer function

Create a text make and it say "Score : 0"

Set the center of this text to (100,30)

Create a class called “LblTime”

Create an initializer function

Create a text and make it say “Time left : 0”

Set the center of this text to (500,30)

Create a class called “Game”

Create an initializer function

Use the background’s sprite png to make the background a space background

Create variables for all the sprites

Create a variable for the star collect sound effect

Create a variable for the number of stars

Create a variable for the asteroid collect sound effect

Create a variable for the number of asteroids

Create a variable for the score and set it to zero

Create a variable for the timer

Create a variable for the timer’s total time and set it to 30

Create a variable called stars and give it an empty list

For i in range of the number of stars

Append Star(self)

Create a variable called asteroids and give it an empty list

Append Asteroid(Self)

Create a variable called sprites give it a list of all the sprites

Create a function called “process”

For star in stars

If a star collides with the spaceship

Run the reset function

Play the star’s collect sound effect

Add 1 to the score

For asteroid in asteroids

If an asteroid collides with the spaceship

Run the reset function

Play the asteroid’s sound effect

Subtract 1 from the score

If the timer is less than 0

Stop the game

Create a class called “Instructions”

Create an initializer function

Create a variable for the previous score called “prevScore”

Give this screen the same space background as the game's screen

Create a MultiLabel for the directions

Make the MultiLabel explain how to play the game

Place the directions at (320, 240)

Give the directions the size (500,250)

Create a play button

Make it say "play" and set its position to (100, 400)

Create a quit button

Make it say "quit" and set its position to (540, 400)

Create a label that displays the previous scare

Make the default score zero

Set its position to (320, 400)

Create a variable for the list of sprites in this class

Create a function called "Process"

If the play button is clicked

Exit the instructions screen

If the quit button is clicked

Exit the instructions screen

Create a main function

Create a variable called "keepGoing" and set it to true

Create a variable called “lastScore” and set it to zero

While keepGoing:

Check the last game’s score

Start the instructions screen

If play was clicked

Start the game function

Else

Set keepGoing to false

If name is equal to main

Run the main function

Sprite Sources

Asteroid :

https://openclipart.org/detail/193397/asteroid

Star :

https://openclipart.org/detail/168141/gold-star

Space :

https://openclipart.org/detail/138121/night-sky

Joe the alien :

https://openclipart.org/detail/20150/ufo-in-cartoon-style

Sound sources

Asteroid :

https://freesound.org/people/MortisBlack/sounds/385046/

Star :

https://freesound.org/people/Dishings/sounds/752015/