

Criterion B: Design

Relationship between objects

Basic Design of Product

Objects:

- Bird



- Pipe



- Score



- 1) Bird

The bird is the object that the player controls. This object is made up of multiple “costumes”/sprites that create an animation of flying during the gameplay.



a) Bird actions

The bird will act upon the press of either the spacebar or mouse left-click. (Make Reference Here) Not only does the sprite-change create a flapping animation, the change in sprites can also initiate a “flap-like” sound. (Make Reference Here) The bird can also interact with other objects such as the pipe and it can affect other objects such as the score, which will all be discussed further.

2) Pipe

The pipe acts as an obstacle towards the player, and the player must avoid using the bird object.

a) Pipe actions

The pipe can move its position up and down on the grid. (Make Reference) Also, it clones itself after a certain number of horizontal grid movements. (Make Reference) Moreover, the pipe will end the game if the bird comes into contact with it and end the animation of the bird. (Make References x2)

3) Score

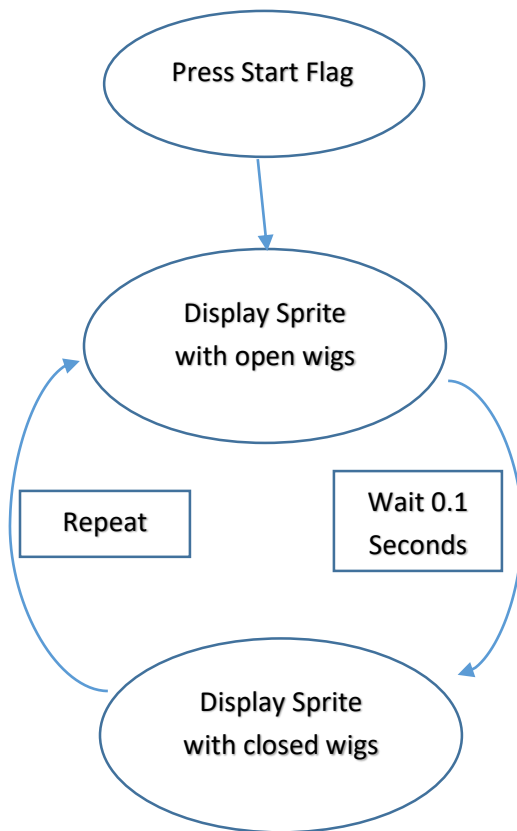
This object uses both the pipe and bird objects to complete its objective, which is to count the player's score.

a) Score actions

Since the score is dependent on the number of pipes the bird travels, every time the bird passes the pipe object, the “score” variable is used to add a “point”. (Make Reference). Also, every time a point is added, the sprite will change to the score number. (MR)

Flowcharts

1) Bird Animation



Testing

Action to Test	Method of Testing and Result
Hardware functions correctly with hardware	Playing the game was the method of testing and the game responded well with the mouse clicks and spacebar clicks
Bird animation in-game	Play the game and we fixed the situation by making the bird's "stand-by" time from 1 second to 0.1 seconds.
Synchronization with sound	Play the game and the sound effect would seem to occur immediately after the input from the user.
Game ends correctly	Initially, it did not end in the correct manner, but after fixing the problem, the game ends at appropriate times, which are when the bird hits the pipe or ground.
Game displays score	Yes, shows this with the ending menu that includes the current score and the final score.