Birdy

By: Eric Heilman, Luis Hernandez, Alain La,Madhu Ganga

Project Statement

Birdy is an educational free flying virtual reality simulation in which the user takes on the form of a migratory bird as it migrates from one area to another while interacting with its surroundings to learn about real avian migration. This entails simulating a realistic path that a migratory bird would follow while also simulating low-level details that a bird would experience along the way. These low-level details include two different environments (one arctic mountain, where the migration starts, and one temperate forest, where the migration ends). The simulation also depicts changes in flora and fauna along the migratory path, and also alters the difficulty of flight depending on the birds environment. The educational component of this project primarily resides within videos that are unlockable within the simulation by landing underneath a flock of birds that are similar in appearance to the bird that the user controls.

The user is able to control the birds flight within the simulation by pressing up, down, left, right, back, and forward. These controls allow the user to explore the virtual environment however they would like to, which gives the simulation a uniquely immersive feeling.

We believe that this project will effectively highlight the life-cycle of the average migratory bird in a novel manner which will provide an unprecedented educational experience. Educating the next generation on the realities of the natural world is a crucial component of creating an eco-conscious societal mindset, and this experience could work wonders in pursuit of that goal.

Throughout the users engagement with our final product, they will glide through a mountainous arctic terrain while learning key facts about avian migration along the way. This will be accomplished with two individual learning modules which are edited videos that have built-in informative voice overs. At the end of the mountainous terrain, the bird will teleport to the temperate forest zone, at which point the migration will be complete. There are two more informative areas within the forest one as well.

The following images are screenshots taken along the migration from within the Birdy simulation in Unity.

This is a screenshot of the opening scene, where you are in control of the bird and you can read the instructions on how to navigate within the simulation.

This is an image taken within the first educational module. On the left is an edited video with a recorded voice over that reads over an educational message on avian migration. Note that you can see the shadows of the other birds, the 'flock', in the right hand corner. Each flock within the simulation denotes an educational module.
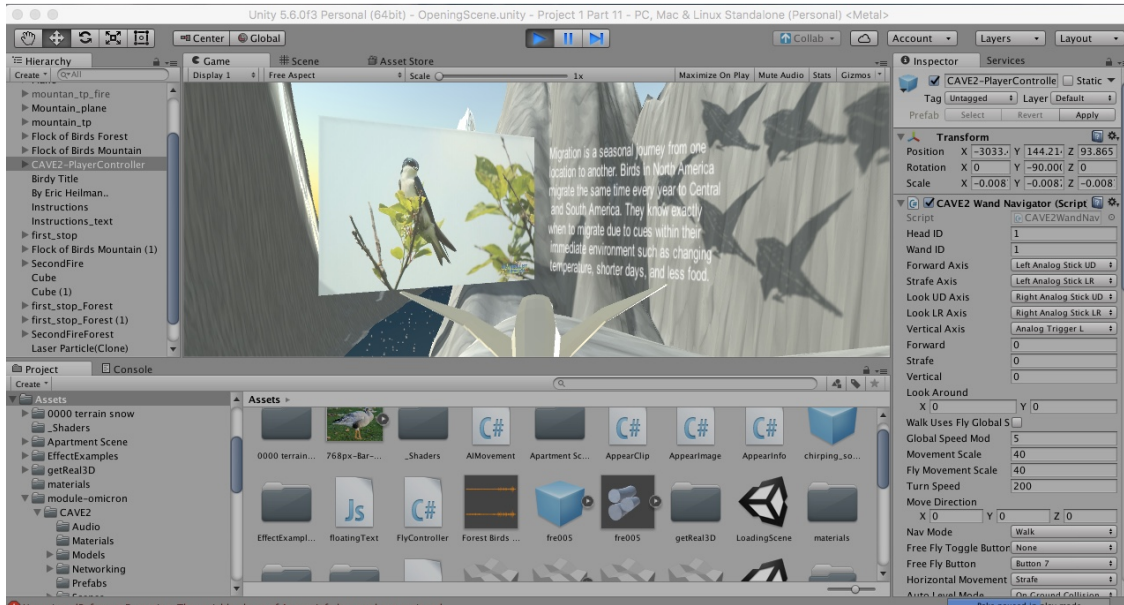
This is another image taken from a different educational module. After this module is complete, the bird will teleport to a temperate forest, which signifies the end of migration, as well as a few more educational modules.
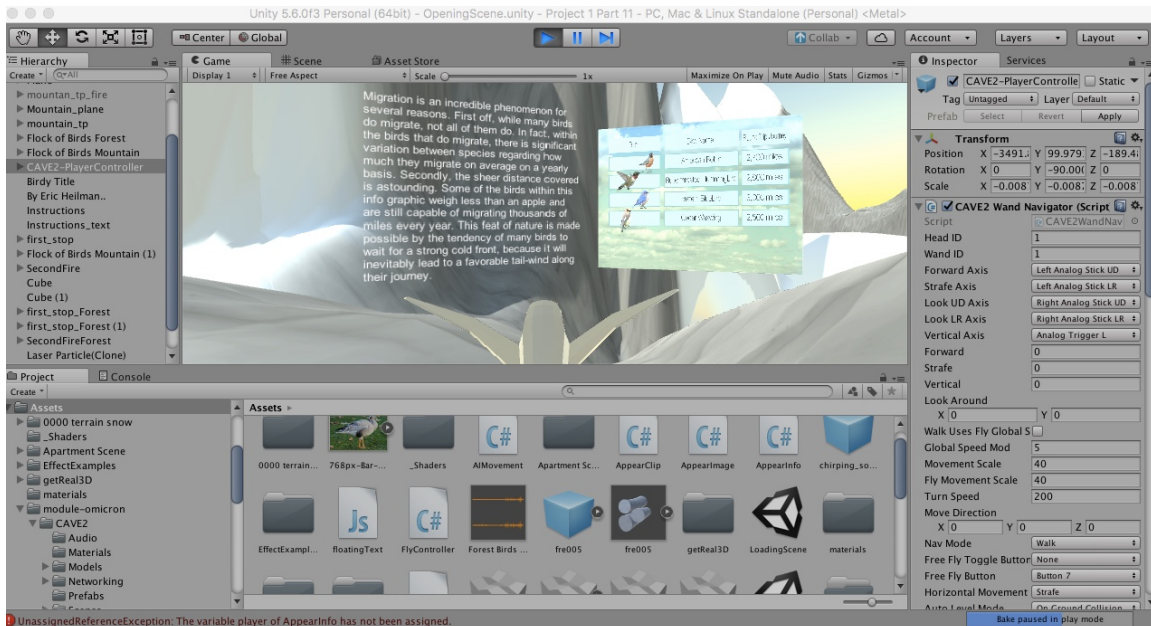
This is a screenshot taken of the end of the simulation, in which the bird has reached the temperate forest zone.
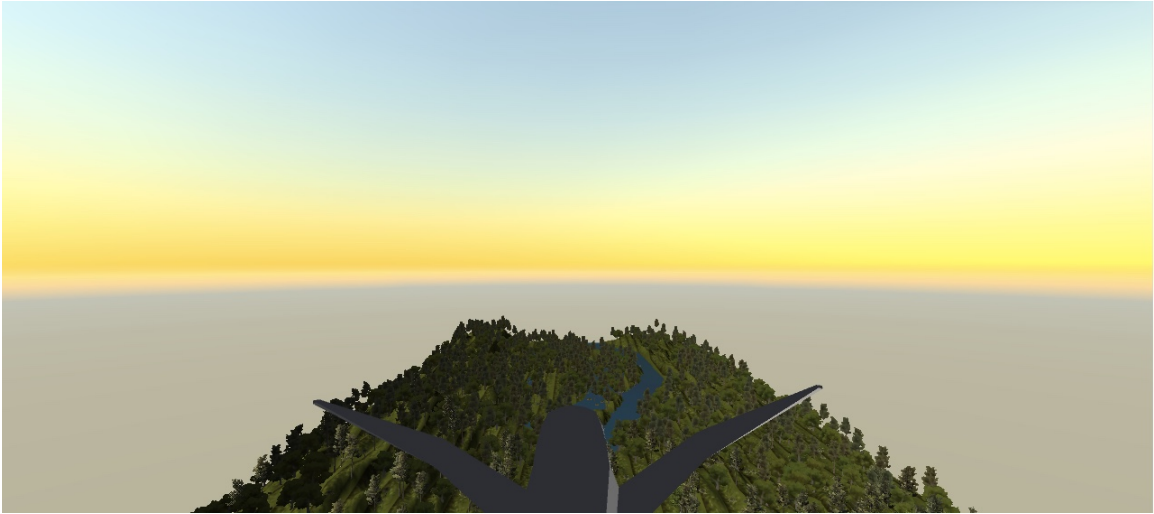
Thank you for reading this, and we hope you enjoy the simulation!

Team Document

<u>Luis Hernandez</u>

Created the entire mountain scene terrain

Scripted the bird's flight

Fixed the fire pit particle system

Created two information areas in forest terrain

Scripted both videos to play upon landing in the near area, and also stop playing upon leaving the area

Presented the second half of the final project

Created and presented the second half of the powerpoint assignment

Created the bonfire teleportation script

Was present for first testing session

Was present for second testing session

Was present for third testing session

Attended every group meeting

Responded to every group email in a timely fashion

Created the CAVE2 player controller

Was responsible for coding the CAVE2 remote to the in-game controls (up, down, right, left, front back)

Wrote the AI script for the bird flocks

<u>Eric Heilman</u>

Thought of the original idea for "Birdy"

Created the entire forest scene terrain

Researched migratory patterns in order to create, edit, and record voice overs for both videos within the mountain scene

Created both educational text boxes within the mountain terrain

Did all of the documentation (this word document, as well as the representative image and the movie recording and voice over)

Created and personally customized the skybox

Added the custom background bird-chirping music within the simulation

Added a sound effect to play whenever the bird flapped

Created the starting point for the bird to rest on before navigating the environment

Presented the first half of the final project

Created and presented the first half of the powerpoint assignment

Created the intro "Birdy" moving text, as well as instructions pane

Added the water to both scenes

Was present for first testing session

Was present for second testing session

Was present for third testing session

Attended every group meeting

Responded to every group email in a timely fashion

<u>Alain La</u>

Created one bird model (late)

<u>Madhu</u>

Created one bonfire model (late)