

# BOIDS GDD

SDSU CS 596 Assignment 2

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# Overview

## Flight Simulation

- This is a flock simulation based on the Unity AI Game Programming book with a twist. It expands on several techniques that are covered in chapter 5 of this text.

## Core Gameplay Mechanics Brief

- Lazy Flight Mode is the default mode; boids flock towards the target and a random position is chosen after it has been reached.
- Circle Flock Mode: boids flock towards the target in a circle shape path
- Follow Flock Mode: boids flock towards a user-defined target on mouse click.

## Targeted platforms

- Mac/PC/Linux

## Project Description

The idea of this game came about from the Unity AI Game Programming text book. This version of Boids uses Craig Reynolds algorithm to create a flocking group of objects randomly behave as a group. There is a simple UI section on the bottom left of the screen containing a group of buttons. The buttons act as the selectors for controlling the flocking pattern of the boids. The user may choose one of three different variations at a time and the Boids will change their flocking pattern immediately.

## Assets

### - 2D

- Textures
  - Green terrain material
  - Golden material

### - 3D

- Object List
  - Flock Prefab
  - Golden Snitch Prefab
  - Camera
  - Canvas for UI

- Environmental Art Lists
  - Terrain using brushes

- **Code**

- Loader.cs
- GameManager.cs
  - Spawns and controls all other main game objects
- UnityFlockController.cs
  - Generates the Flock list from the prefabs
  - Manages the position and movement of the flock group
- Flock.cs
  - The meat of the flocking algorithm lives in each individual prefab
  - Takes care of collision handling within the flock group

- **Animation**

- Individual Flock rotational animations programmatically