# Homework 3

# Due Dates: 10/3/16, 10pm (Submission on blackboard)

# Points: 2

# Assignment Type: Individual

# Requirements

Recreate the map as shown in the picture below. You will need to learn how the raycast function works in Unity if you don’t choose to work on the optional assignment 2 below.

The optional assignments are for additional credits

# Optional Assignment 1 (3 points)

**Flocking**

**Homework requirement:**

* You are going to implement flocking behavior with a group of at least 20 agents.
* You can use either keyboard or mouse movement for controlling the lead agent
* As in the last assignment, I should be able to tell where each of the character is facing -- which can be different from the direction they are moving. No obstacles in the environment
* Name your submission “Flocking\_*your name*”

A readme are required. In your readme file, describe/justify all of the design decisions you make in this assignment:

1. How did you model the force in separation?
2. What are the weights of the three steering behaviors in flocking

# Optional Assignment 2 (3 points)

# Raycast for Obstacle Avoidance

# Requirements

* The first thing you need to do is to recreate the map as shown in the picture. You will use this map for your next assignment too
  + The tunnel in location 2 only allows 1 bird to pass, and the one between 6a and 6b allows for 3. The distances between other objects can be as far or as close as you want
  + The width of object 4 equals to 1 bird
  + The tunnel in location 2 is not parallel to the edge of the map
  + Blocks 3 & 5 have curved shapes
* You will have 1 agent follow the path indicated in the map using ray cast
* You should implement the ray cast function yourself
* You need to show the rays for ray cast.
* You can get 1 extra points if you can show in addition a demo of corner trap

As usual, a clear user interface, and a readme are required. In particular, in your readme file, describe/justify all of the design decisions you make in this assignment:

1. how many rays did you used and how long are they?

http://www.centerforconservationleadership.org/images/BirdIcon.jpg

6b

6a

5

4

3

2

1

0

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