**AG 131  
Lab 5 – Prelab**

<https://www.youtube.com/watch?v=7TYJyCCO8Dc>

**Readings:**

**Ray Casting   
*(… Because you forgot this from AGGP 101)***

<https://docs.unity3d.com/Manual/CameraRays.html>

**Nav Mesh**

[**https://docs.unity3d.com/ScriptReference/AI.NavMeshAgent.html**](https://docs.unity3d.com/ScriptReference/AI.NavMeshAgent.html)

**<https://unity3d.com/learn/tutorials/topics/navigation/basics>**

**Project GitHub Repository**

[**https://github.com/Brackeys/NavMesh-Tutorial**](https://github.com/Brackeys/NavMesh-Tutorial)

**YouTube links:**

[**https://www.youtube.com/watch?v=CHV1ymlw-P8**](https://www.youtube.com/watch?v=CHV1ymlw-P8)

[**https://www.youtube.com/watch?v=FkLJ45Pt-mY**](https://www.youtube.com/watch?v=FkLJ45Pt-mY)

[**https://www.youtube.com/watch?v=blPglabGueM**](https://www.youtube.com/watch?v=blPglabGueM)

**Fine State Machines**

[**https://medium.com/the-unity-developers-handbook/dont-re-invent-finite-state-machines-how-to-repurpose-unity-s-animator-7c6c421e5785**](https://medium.com/the-unity-developers-handbook/dont-re-invent-finite-state-machines-how-to-repurpose-unity-s-animator-7c6c421e5785)

[**https://docs.unity3d.com/Manual/StateMachineBasics.html**](https://docs.unity3d.com/Manual/StateMachineBasics.html)

[**https://unity3d.com/learn/tutorials/topics/navigation/intro-and-session-goals?playlist=17105**](https://unity3d.com/learn/tutorials/topics/navigation/intro-and-session-goals?playlist=17105)

**Submission:   
Turn in a MS Word document with the answers to the questions below**

1. Why are switch\case and enums Ugly… and ultimately unmanageable?
2. Why is State Behaviors & Delegates a better option to switch\case and enums?

Create diagrams of the following systems

* + Create an image that details each system below as a finite state machine
  + List all important information about each state
  + Draw.io will be useful here to help diagram and create an image.
  + Imbed your image for each system into a MS Word document

1. Simple Desk Lamp
   * The lamp has a single bulb
   * Assume that the lamp is plugged in
   * Do not Assume the lamp has a bulb
2. Single Traffic Light (Red\Yellow\Green)
   * Show only normal operations over time
   * Red -> Green -> Yellow -> Red (Repeat)
   * No Emergency\Snow Lights
   * No Sensors
   * No blink states.
3. An asteroid from Asteroids *(game)*
4. A Fruit from Pac-Man *(game)*
5. A Ghost from Pac-Man *(game)*
6. Pac-Man from Pac-Man *(game)*