**AG 131  
Lab 4 – Live, Die, Repeat**  
<https://www.youtube.com/watch?v=P0cm1Sv3-2Y>  
<https://www.youtube.com/watch?v=2vmmTnDJnH0>

**Readings:**

**States & Finite State Machines**

* [**http://gameprogrammingpatterns.com/state.html**](http://gameprogrammingpatterns.com/state.html)
* [**https://unity3d.com/learn/tutorials/topics/navigation/finite-state-ai-delegate-pattern**](https://unity3d.com/learn/tutorials/topics/navigation/finite-state-ai-delegate-pattern)
* [**https://docs.unity3d.com/Manual/StateMachineBasics.html**](https://docs.unity3d.com/Manual/StateMachineBasics.html)
* [**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)
  + **This is an interesting idea use Unity’s Animation state machine**
* [**https://unity3d.college/2017/05/26/unity3d-design-patterns-state-basic-state-machine/**](https://unity3d.college/2017/05/26/unity3d-design-patterns-state-basic-state-machine/)

**Pre-Lab:**

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

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. Switch & Light bulb
   * Don’t over think this.
2. Simple Desk Lamp
   * The lamp has a single bulb
   * Assume that the lamp is plugged in
   * Do not Assume the lamp has a bulb
3. Single Traffic Light (Red\Yellow\Green)
   * Show only normal operations over time
   * Red -> Green -> Yellow -> Red (Repeat)
   * No Emergency Lights
   * No Sensors
   * No at night just blink states.
4. Spawn\death\respawn system
   * Diagram the system in regards to a single player’s state
   * Represent the roles and states of the Game, Controller, and Pawn classes
   * Start the Player with a Spectator when they enter the game (or when game starts)