

### 1. **The Big Idea:**

The main idea of our project is to make a video game with a unique input. For example, a game that runs based on motion in OpenCV or uses an interesting controller.

MVP: A game that is controlled by color tracking.

Stretch goal: A game that is controlled by some complex input method which we will decide on at a future date.

### 2. **Learning Goals:**

Anya: More work on classes and object-oriented programming. I'm also interested in utilizing fun and interesting libraries, and learning more about computer vision and object tracking.

Liz: My main goal is to work on software project planning and scoping, especially with as many unknowns as we currently have. I'd like to learn how better to find, integrate, and take advantage of existing code and libraries, more as a way to find new possibilities than to save much time.

### 3. **Implementation Plan:**

We will begin by using OpenCV and pygame to create a basic game that runs based on colors shown on a computer's webcam. After that, we will decide what we want to improve on (either the input method or the game itself), and look for appropriate libraries based on that.

#### 4. Project schedule:

week	Mon	Thurs
1	look into existing color-tracking libraries & understand that code discuss game type talk with game des. brother for advice	
2	build a basic, blank game world work on inputs & debugging	
3	start adding game-like assets game world & asset development	
4	debugging, robust-ifying	
5	start adding second-layer complications clean up second layer	
6	beautify GUI & interactions	

#### 5. Collaboration plan:

We plan on doing code in the same room, and using teletype to edit code at the same time. We may not be doing the typical pair-programming structure, but we will be there to help look over each other's code in case someone is coming across a bug and to make sure things are being done efficiently.

We plan on doing agile development, by working toward our MVP and then improving on it as we see fit.

#### **6. Risks:**

We expect to run into the most issues in our input and control method for the game. We are concerned that we may overscope the project, and attempt to make something too advanced for the amount of time we have. To work around these, we will be working closely with people who already know about the topics, including the teaching team, an MP4 project team who did something similar, and Liz's brother who's a senior for game design. We will aim to check in with our schedule often to make sure we're either on track or have reasonable expectations for what we can actually accomplish.

#### **7. Additional Course Content:**

How to use and find existing libraries - places to look, and how to deal with poor documentation (and contribute to bettering others' documentation)

OpenCV and computer vision

How to make games? I think we'll get pretty good input from Liz's brother (who's majoring in game design)