

## **MATH299M/CMSC389W**

**Spring 2019 – Ajeet Gary, Devan Tamot, Vlad Dobrin**

### **Model H13: Write Manipulate in Dynamic**

Assigned: Friday April 12<sup>th</sup>

Due: Sunday May 12<sup>th</sup>, 11:59PM

Note: Remember that out of the H models from Part 3, that is, anything numbered 10 or above, you must only complete 2 assignments. Any extra you complete can replace low scores from Part 1 and Part 2 of the course.

In Lesson 13 you learned intimately how to create Dynamic content, that is, interactive, dynamically updated Output, as well as a massive host of formatting tools and Control Objects. You now have what you need to create arbitrary GUIs (Graphical User Interfaces)! As a challenge, I want you to create an approximation to the Manipulate function, which you could call MyManipulate. The idea is that it will take input similar to what Manipulate takes in and outputs something similar to Manipulate's output. You will surely use a DynamicModule.

#### **Manipulate properties to mimic:**

- A body of course, something to actually look at
- Control Objects, if you're fancy then inputted in Manipulate's tuple form and automatically fitted to the appropriate Control Object
- Arbitrarily many Control Objects, that is, varied argument number of MyManipulate
- Options (this part is easier than you think once you've figured out arbitrary number of arguments)
- A frame separating the body output from the Controls

#### **More features than Manipulate:**

- Built in Snapshot Export Widget Option (from Model C12.2)
- ControlObjects that can disappear
- Slider2D constraints
- ...

Copy a few features or really go in and make something super awesome and polished – your grade will reflect how awesome you make your MyManipulate!