Final Project Proposal

Option 3 Proposal:

My proposal is to make a Shiny dashboard, or something akin to it, to analyze data recorded in trials of a simulation for my VCOST project under Dr. Demirel.

This research project has doctors perform a straight anastomosis with a circular stapler to combine an already separated colon. The simulation will be done with the use of:

* A VR headset to immerse the user into the operating environment as well as provide realistic depth
* Haptic devices to simulate real hand movement and force feedback from objects in the simulation

Per Dr. Demirel’s request, I will be venturing into analysis with the tidyverse and its relationship with Javascript. Through the simulation, things are being tracked and then put into CSV files. Some tracked activities include hand position and rotation over time, headset position and rotation over time, and the grade of steps of the simulation. The goal of this project is to be able to input those CSV files into the created dashboard and have the dashboard perform analysis on the data. This analysis could be the mean, median, variance, etc. just to make correlations or connections through the data to correspond to possible outcomes of the sim.

Dr. Demirel and I believe that this dashboard would be very helpful for the research as a whole, since I will have a framework to go off of when I perform more analysis on tasks more set into my thesis. It will also be a big help to visualize anything that doesn’t seem apparent from simple analysis. Tables and graphs are pleasing to the eye and often yield better reviews than a simple set of numbers, making sharing data and theory much easier.