COSC 341 Assignment 2 Report
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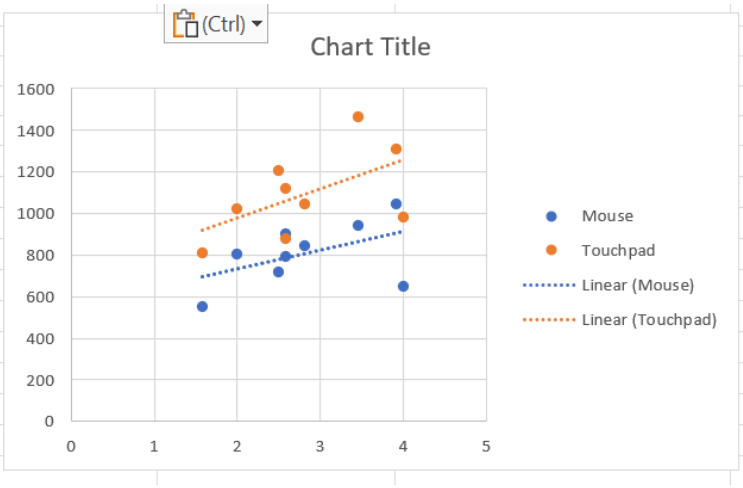
Difference in performance between Mouse and Touchpad
After analyzing the data from three different participants, we can conclude that using a mouse is faster and more efficient than using a touchpad when performing the same tasks. Users found the mouse to be more precise and easier to use.

Fitts law graph



Fitts ID	Mouse	Touchpad
1.584962501	553.74	813.1111
2.584962501	796	1120.519
2.584962501	900.81	880.4074
2.807354922	845.78	1044.884
3.906890596	1047.7	1310.556
4	651.85	984.185
2.502500341	717.84	1204.907
3.459431619	944.44	1465.37
2	807.27	1021.704

We decided to create the 2D Fitts Law study in Processing, as both of us were familiar with the program and language. We had to code on one computer, making it a bit of a challenge to collaborate at the same time, but we simply had to split up who was working on what across different programs. Lucas worked on coding the program, while Lucy wrote up the reports and collected data from participants. A button class was created, allowing us to create as many button objects as needed without duplicating code. We could then create an array of buttons and iterate through in any specified order as they turned red one at a time. At first it was a struggle figuring out how to move through all different buttons and make them red one at a time, but iterating through them as an array of objects turned ended up working really well. It was difficult to have the trials be randomized, but also make sure the participants used each of the 9 unique combinations of amplitude and width. There was a bit of confusion with the requirements of the sizing of the buttons which led to us creating unnecessary code, but we eventually realized the error and came to the proper size requirements for testing.

Another problem was figuring out how to record the data from the participants. Doing it manually (eg using a stopwatch in real life) seemed to be too much work, and could have easily led to errors (eg not stopping/starting at the exact time). Eventually, we realized we could use a timer in processing to start recording the time in milliseconds as soon as the program starts. Afterwards, the time to click a target would be printed to the console, along with that target's width, amplitude, and whether it was correct or incorrect. This made sure the data was exact and allowed us to collect, record, and analyze it in a much easier and efficient way. Lucas and Lucy each acted as a participant, then a family member acted as the third participant. Creating the graph was a bit difficult,

Lucas extracted the data from the console, and took the mean times from the touchpad and mouse trials using R. Lucy graphed the data in excel, and summarized our findings.