

Assignment 2 Report

Fitt's Law Game

COSC 341

Omkar Barkale

ID: 68857424

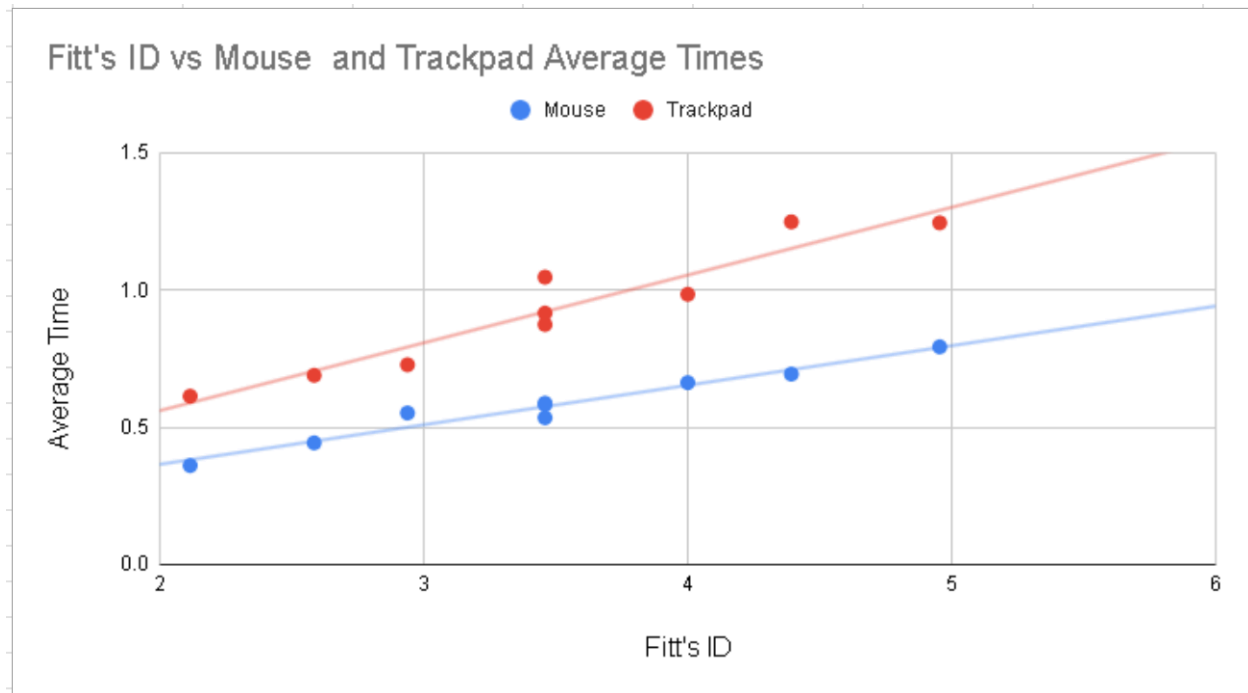
Abstract

Over the years, many modalities of input have been devised for use with computers; however, the most popular inputs for point-and-click functions persist as the Trackpad and Mouse. This research project's purpose is to determine the more efficient of the two, by empirical comparison by comparing the average time to complete a task with a specific difficulty index. Through testing and data analysis, we found that mouse input was quicker on average than trackpad inputs. This supports the idea that mouse input is better than trackpad input for quick selections.

Methodology

To juxtapose the two modalities, a replica of a Fitt's Law Study was created, based on another one linked here(<http://simonwallner.at/ext/fitts/>). The goal was to replicate the effectiveness of such a test in a way where all the data relevant was easily attainable. The most difficult part of the development process was determining how to switch seamlessly between different widths and amplitudes of targets and keep everything spaced evenly. This was remedied by calculating the positions of the targets in polar coordinates and simply adjusting the radius aspect, to maintain the equidistance properties between targets. Data was collected in CSV files from 3 participants and later loaded into a MySQL workbench to aggregate the average times required to complete tasks of different difficulty indexes.

A spreadsheet was created compiling all aggregated data, to produce a graphical relation shown below:



From the graph above, it is evident that not only does the trackpad take longer on average to complete the task, but it also gets more difficult at a greater rate than the mouse, as seen by the trend lines.

Results

The evidence derived from the tests given to 3 participants supports mouse input modalities being much quicker than trackpad inputs and follows that trend as the difficulty increases.