

Lab 2

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September 26, 2023

Abstract

In this lab, you will measure and evaluate user performance using quantitative, qualitative, and mixed methods data. You will also conduct a simple data analysis and create a visualization.

1 Objectives

1. Evaluate user performance while multitasking
2. Measure and gather mixed methods data of user performance
 - Measure and gather quantitative data
 - Measure and gather qualitative data
3. Analyze and evaluate mixed methods data
4. Create graphical visualization for the data

2 Mixed methods data gathering for multitasking

2.1 Trial 1

Trial 1: Write out the phrase “Multitasking is worse than a lie” in the “L” row. For every letter you copy, immediately write the number of that letter in the number row. E.g. “M” then “1”, “u” then “2”, “l” then “3,” etc. until you reach “27.” Record the time it takes you to finish this task in the “Time” column for task 1. Record the number of errors you committed in the “Errors” column for task 1. Rate and record the difficulty from 1 (easy) to 7 (hard) in the “Rating” column for task 1.

2.2 Trial 2

Trial 2: Completely write out the phrase “Multitasking is worse than a lie” in the “L” row. After you have finished, write out the numbers 1 – 27 in the numbers row. Record the time it takes you to finish this task in the “Time” column for task 2. Record the number of errors you committed in the “Errors” column for task 2. Rate and record the difficulty from 1 (easy) to 7 (hard) in the “Rating” column for task 2.

2.3 General Analysis Questions, Which task felt/seemed more difficult?

A general insight through the group was that performing task 1, was the more difficult task to do

2.4 General Analysis Question, Why did that task feel/seem more difficult?

It was due to getting used to the experiment and tracking your writing within the two sections

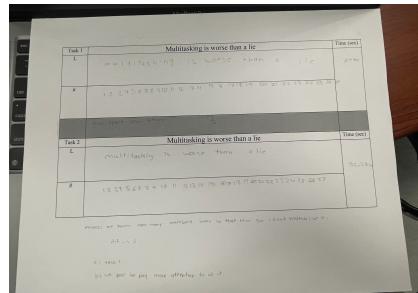


Figure 1: Dora's Data Table.

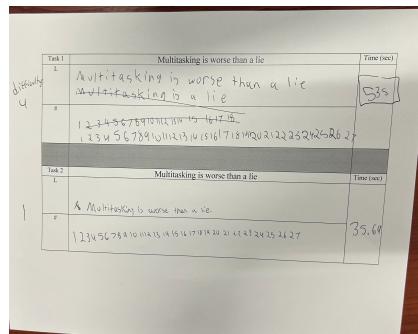


Figure 2: Karsten's Data Table.

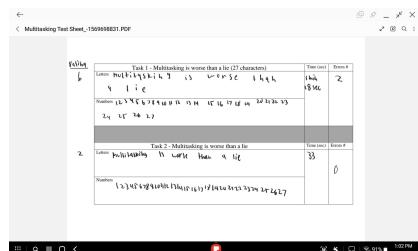


Figure 3: Gabriel's Data Table.

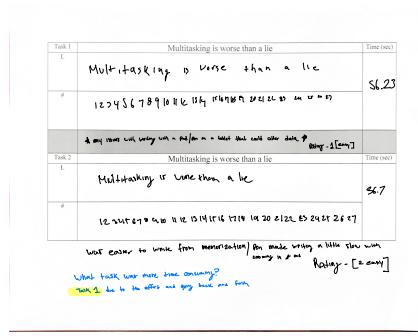


Figure 4: Jonah's Data Table.

3 Class Data Visualization

Create histograms for each data set – time, errors, and ratings – for the class. Use Sturge's Rule calculate the number of bins for the histogram.

3.1 Sturges rule

$$\#bins = 1 + \lceil \log_2(n) \rceil$$

3.2 Histograms Pertaining Class Data

Below is the histograms we have created with utilizing excel to show our class as a whole during this experiment. There will be 6 graphs, each representing a different category of the collected data.

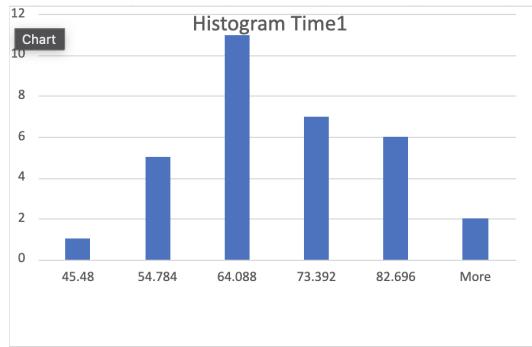


Figure 5: Histogram Time 1

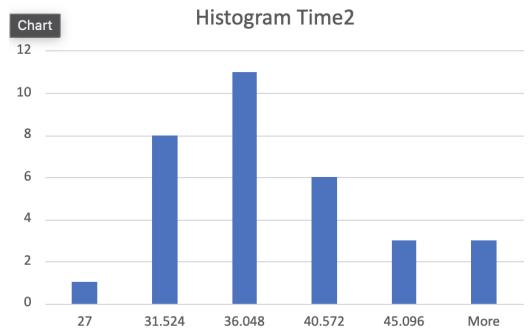


Figure 6: Histogram Time 2

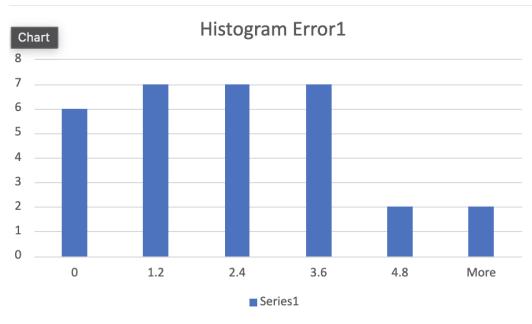


Figure 7: Histogram Error 1

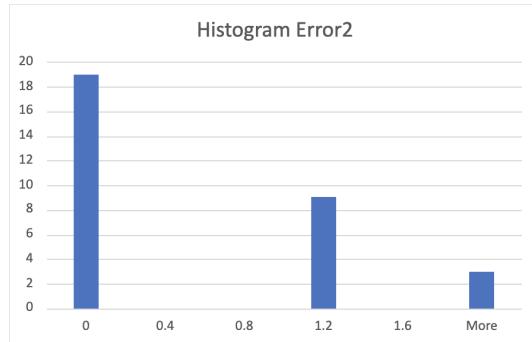


Figure 8: Histogram Error 2

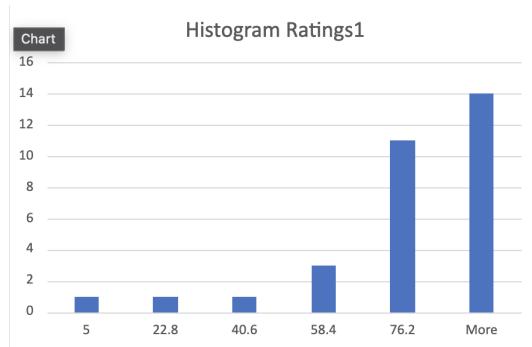


Figure 9: Histogram Ratings 1

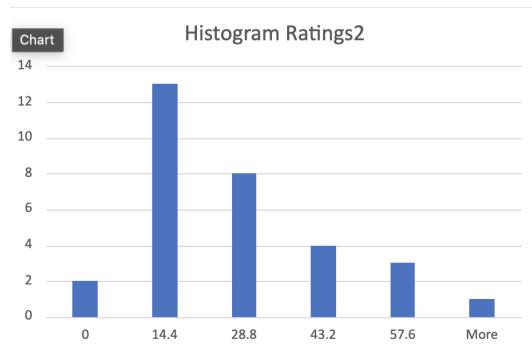


Figure 10: Caption

4 Personal Data Visualization

In this portion of the lab there will be data from a collection of our individual data sets that have been combined into a group. These sets were then moved into excel where they were made into different histograms to display each segment parts of the data.

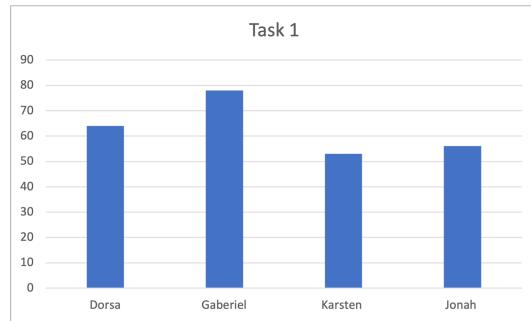


Figure 11: Task 1

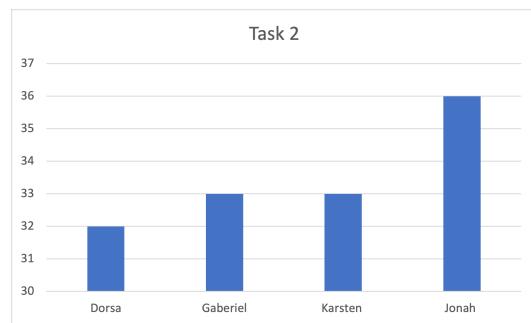


Figure 12: Task 2

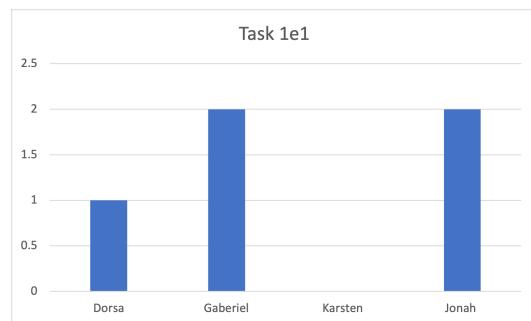


Figure 13: Task 1e1

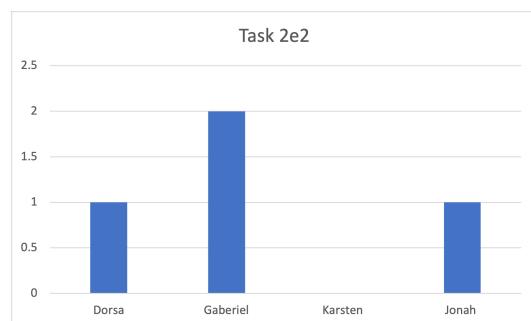


Figure 14: Task 2e2

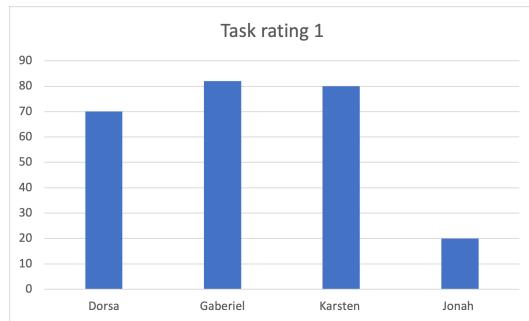


Figure 15: Task Rating 1

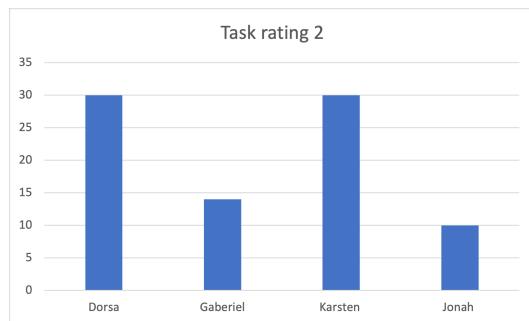


Figure 16: Task Rating 2