Final project intructions

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Data Files: For testing purposes, please use the "cfu data.csv" and "Enzyme data.csv".

Purpose: This shiny app serves as a tool for analysis of time series data. Given a user input in the form of a .csv file, the user can select different analysis and plotting options to customize their analysis.

Instructions for use:

1) On the Dashboard, upload data file using the "File Upload" panel. select browse and navigate to your data file. *Important: Data file must be a csv, and contain your sample names in a column with the header "Sample". Your data will appear on the page for previewing. There is an unfinished panel beneath the data preview. Ultimately, it will be moved to the "Statistical Analysis" tab as the "Averages" tab. See below for description.

2) Navigate to the "Statistical Analysis" Tab. Here you can choose what statistical analysis to perform, hit "Update". * 2 Way Anova not available, but is in the works. *This page has many tabs that will display the results of your statistical test: ->Data Set: Current methods assume normality, here results of tests for normality are displayed. This impacts the typr of test carried out, at least ANOVA for now, see "Statistics.pdf" for calculation details. We hope to add more analysis methods for non-normal data ->Summary: Displays summary statistics including group means and standard deviation ->Averages:* This tab is incomplete, but it will allow the user to see detailed information about individual sample sets by entering their names as they appear in the csv* ->Results: This shows the results of the selected test in table format at the top is a test summary showing the type of test performed and of significance was found at all. Below, the raw test results are displayed in a table. In the future, we hope to format this to be more user friendly, and add an option to download these results as a csv file and an image for use in reports/ manuscripts. ->Post Hoc: Shows pos hoc pairwise comparisons. If T-test, this is the same as the previous tab. If an ANOVA was run and significance was found, pair wise comparisons are shown. Is blank for ANOVA if no significance was found. In the future, we hope to add more post hoc analysis options including reformatting the table and downloading

3) Navigate to the "Plots" tab. Here you can format and produce plots using the different panels: ->Graph Title Features: Allows the user to input customize the graph title text. For the color, you can enter any ggplot color code. -> Axes Label Features: Similar to the previous panel, customization of axis labels -> Graph colors and statistics: Allows selection of plot type and inclusion of pairwise comparison if statistics were done. *Future: currently the line plot does not properly group the data points. We would like to add this. We also hope to add the data points to the box plot as well as add an option to include only averages, error, data points and any combination of. We also hope to reformat the pairwise comparisons. Currently it will show all significant interactions, which can be cluttered (obvious when using "Enzyme data.csv" and T-test. We hope to add some customization here as well, as well as legend customization. We also aim to include an option to download the resulting plot*