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MATLAB Documentation

Instructions

1. Download/open the MATLAB code and select 'Run'
    a. NOTE: User **must** input username and data; if this is not done then there will be en error when using the output file.
2. Once the user has made a username and inputted the date, the user must now input data. THE OTHER FUNCTIONS WILL NOT WORK unless data is entered.
3. In case three the option to clear all current data in MATLAB is available. This option is to make sure that there was no accidental clicking the clear button.
4. The user is free to do what they please with the other options.
5. The bins chosen are recommended to be between 8-12 for best results but the user is free to make as many bins as they would choose.
6. Using the equation z = (x-mu/sigma) the data is calculated the find the probability and/or the x or z value from the data given by the user.
7. The user can select option 4 to output all data to a file named of their choosing. They are also given the option to open it on the spot which opens the file to another tab within MATLAB.
8. Once the user outputs their data they can do whatever with the interface or can close it by chosing the "Exit" option then entering 'y' for yes, to exit.

Testing

1. To test the data save a .txt file to the folder that contains all of your MATLAB files
2. Next press run on the file and set your username and date
3. Once the user has done that they are able to input their data WITH THE .txt EXTENSION. (This is stated in the code as well)
    a. NOTE: If the user does not put the extension the code with break and the user must run again.
4. After the user answers the question about normal distribution, they are able to do whatever with the code.
5. Once the user is done they can select the option to Output their data.
    a. The user is able to decide what name they want their file to be. The user does **NOT** need to put the .txt extension.
6. After this is done the user can either open the file in matlab when asked or can manually open the file outside of MATLAB.
7. The user is free to close the code whenever they please by selecting the "Exit" option and entering 'y' when asked.

Functions

menu('','') - Allows for a popup menu with name of the interface and options
While - a loop that continues until a conditional is set
Input('','s') - the user can input something as a string
Input('') - the user can input something NOT as a string
Figure; - Allows for a pop-up of a figure such as a graph

fprintf(‘’) - Displays a message on the screen
if/elseif/else - if/else statement to set conditionals
Pause; - allows the program to run on a pause
lower() - converts the string to lowercase letters
Clc; - clears all data in the program
mean() - finds the average of the data
median() - finds the median of the data
mode() - finds the most occurring number
var() - finds the variance
std() - finds the standard deviation
min() - finds the minimum value in the data
max() -finds the maximum value in the data
length() - counts how many values are in the data
fopen(‘’,’w’) - opens a writes a new file
fclose(‘’) - closes the file with things written inside
isempty() - checks to see if whatever has anything within
histogram() - plots a histogram
histfit() - plots the fit of the histogram on top of the histogram

Errors

if/elseif/else - This function was used to error check with either blank data or the wrong input given by the user. The statements allowed for options entered by the user and if they did not input what was asked, the elseif/else statements would correct them and make the user re-do that particular step.

The errors were stated with fprintf(‘’) functions because if an error(‘’) was used then the code would be stopped. The fprintf function allows for a smooth and continuously running program.