User Documentation

Programming Pioneers: Easy Plots

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CSCI441
Submitted: 05/05/2024

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Introduction to Easy Plots:

- Easy Plots is a web application that allows the user to develop aesthetically appealing plots in an easy to use manner. By implementing Easy Plots as a web application we allow the user to access Easy Plots from any device that is connected to the internet. Easy Plots aims to be user friendly and bring the power of program language plot building to a 'clickable', and simple, graphic user interface.

How to Sign Up

- Sign up with Easy plots is simple. When you first access the page or immediately after logging out you will be automatically routed to the login page.
- From the login page, click 'Sign Up' in the upper left corner of the navigation bar.
- Once the 'Sign Up' page is loaded, fill out the username, email, password and password confirmation fields, then submit.
    - For the sign up information to be accepted you must
        1. Have an email that matches typical email format (must include an @ and . within the email)
        2. Have a password of at least 7 characters.
        3. 'Password' and 'Password Confirmation' must match.
- Once you sign up, your information will be stored and required for future login.

How to Login

- Logging into Easy Plots is very easy. When accessing the web app you will be taken to the login page initially.
- Simply enter your email and password and click submit.

How to Logout

- To logout of Easy Plots simply click 'Logout' in the upper left corner of the webpage inside the navigation bar.
    - Logout will occur and you will be redirected to the login page.

How to Upload a .csv

- To upload a .csv file you must first log in to Easy Plots.
- Once you log in, you will be routed directly to the page dedicated to uploading your .csv.

- If you are already logged in and at the ‘Easy Plot’ page, navigate to the .csv upload page by clicking ‘UploadCSV’ in the navigation bar in the upper left corner of the webpage.
- Once on the ‘UploadCSV’ page, click the ‘Choose File’ button and select your .csv to upload from your file manager.
- Once selected, the title of the .csv file should appear to the right of the ‘Choose File’ button.
- Finally, upload the .csv by clicking the ‘Submit’ button.
- You will then be automatically navigated to a page where you can select your data and either use it to build a plot or delete it.

How to Plot Data

- After you upload your data and select a dataset to use, you will be automatically navigated to the EasyPlot page.
- Once on the ‘EasyPlot’ plage, you will have a form to fill out which will be used to build your desired plot.
- Start by selecting how your data is structured, choose from ‘Each x variable has one numerical y value’ or ‘Each x variable has more than one numerical y value’. The selection will depend on how your data is structured. See below for examples:

  Here is an example of data where the variable that could go on the x-axis have more than one corresponding y value. For example, notice that height could be 23, 25, or 27:

time	mass	height	absorbance
1	23.4	23	50.43
3	20.4	25	43.22
5	25.6	27	59.43

  Here is an example of data where the variable that could go on the x-axis only has one corresponding y value. For example, notice that Python can only be 5:

language	years
Python	5

Java	3
C++	7

Notice that in this second example we have two variables, language and years. However, unlike the first example, one of our variables (language) is a set of characters, not a number. This means this data will be handled differently. Additionally, in the second type of data what we are likely more interested in is plotting the language type in the x-axis and the number of years on the y-axis. This is different than in the first dataset where we could place the values of any of the variables on the x- or y-axis, or we could place the variabel names on the x-axis and the mean of their values on the y-axis. Eacyplots lets you do all these options, but it all starts with how you specify your data is structured. To place one language with one value (as in the second data set) or to place the values of one of the variables on the x-axis on the values of another variable on the y-axis (as in the first dataset) select 'Each x variable has one numerical y value'. If you have multiple values for each variable and would like to plot their names on the x-axis and their means along the y-axis then (as in the first dataset) select 'Each x variable has more than one numerical y value'.

- After selecting how your data is structured, fill out the rest of the form based on how you would like to build your plot:
    - 'Select plot type': choose which style of plot to use
    - 'X-axis variable group: select the variable you would like to place on the x-axis
        - This is only used if you select the 'Each x variable has one numerical y value' option for the structure of your data.
    - 'Y-axis variable group: select the variable you would like to place on the y-axis
        - This is only used if you select the 'Each x variable has one numerical y value' option for the structure of your data.
    - 'Enter Plot Title': fill in the text box with your plot title.
    - 'Enter x-axis Title': fill in the text box with your x-axis title.
    - 'Enter y-axis Title': fill in the text box with your x-axis title.
    - 'Select statistics option': select which type of statistical test you would like to perform, if any.
    - 'If you selected ttest or wilcoxon test, which two would you like to compare': select the two variables you would like to compare from the drop down menus.

- ‘Submit’: submit the form by clicking the ‘Submit’ button. You plot and statistical analysis will display at the bottom of the page.