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**Section: B2L**

## **USER'S MANUAL**

On this project, **you should install shiny, shinydashboard, shiny, DT, and ggplot2** on your laptop for the project to run correctly. In the compilation of R files in the “**project**” folder, please **open the “actualWebsite.r”** file, and then run. The site should now run with the Welcome Message and user's manual displayed by default. Starting from that, you can hover to the right side and click on the functionality you want to try (e.g. Quadratic Spline, etc.).

### **On Quadratic Spline interface:**

- Before starting, make sure to upload a VALID CSV FILE first by clicking the 'Browse' button in the 'Upload File' box and selecting the CSV file you want to upload. Your CSV file should not have a header row for the data to load correctly.
- The 'Data and Functions per Intervals, and 'Set-Up' table will automatically show right after uploading the CSV file. It provides the data of the CSV file and the corresponding functions with their intervals.
- To see the correct  $f(x)$  and estimate, you have to enter your estimate first (located in the 'Enter Estimate' box). You can do so by typing in the input box or sliding through the numbers provided in the slider. After choosing your estimate, click 'Enter!'
- Scroll down, and you can now see the correct function and estimate for your given value.

### **On Polynomial Regression Interface:**

- Make sure to first upload a VALID CSV FILE (no header row) in the 'Upload File' box.
- Upon uploading, the table inside the 'Data and Correct Function' will load automatically. It shows the table for the CSV file and the function that will be used for estimating.
- In the 'Enter Degree' box, choose the degree from the slider input that you want to be shown, then click 'Enter'.
- The correct function should now display.
- If the 'Estimate' is NA, it is because you still need to enter an estimate in the 'Enter Estimate' portion. Please enter an estimate first, then click 'Enter'. The correct estimate and its corresponding graph should now be displayed.

### **On the Diet Problem Solver:**

- (Optional) Before proceeding, you may enter your name, age, and gender.
- You can select foods by clicking on the white box in the 'Select Foods' portion. You can choose any of the foods you like. You can also tick the 'Select All' checkbox if you want to select all or the 'Select None' checkbox to remove the foods you've currently selected. You can also remove your foods chosen by manually clicking the 'backspace' button on your keyboard.
- After selecting your foods. You can now click the 'Submit' button below.
- The 'Download Foods Table' button is an option if you want to download all the nutritional values of all the foods into a CSV file.

- The 'Personal Information' box contains all your inputs including all the foods you've chosen.
  - The info box on the right side of the 'Personal Information' box, provides a summary of your choices (whether the diet is infeasible or not). It also displays a value box that will show the total cost of the diet, only if the diet is feasible.
  - You can also hover through the tabs below by clicking the tab's name.
  - Each tab contains different functionalities, tables, and final solutions depending on the nutritional values and requirements of your chosen diet. Feel free to go through them!
- Tabs and their functions:
    - **'Foods'**- shows all the foods available and all their nutritional data.
    - **'Food Choices'** - shows foods the user has selected and their corresponding nutritional data.
    - **'Initial Set-Up'** - shows the objective function, nutritional requirements' constraints, and its corresponding augmented matrix.
    - **'Initial Tableau'** - shows the initial tableau that will be invoked in the simplex method.
    - **'Tableaus per Iteration'** - shows all the iterations done (only one or two iterations are displayed. Next iterations can be hovered by clicking 'Next' into the data table) and their basic solutions as well.
    - **'Answer'** - shows the final cost of the optimized menu (if applicable) and also shows the recommended servings of foods and their respective cost. It also shows the final basic solution for the last iteration of the simplex method.