

Criterion C: Development

Introduction

For this project, the IDE Netbeans was used to design and create a functional program which could take in, store, and work with various types of numerical values. The aim and purpose of program is to be able to receive input of the user's physical activity, store that input, display it in an easy-to-access way for extended periods of time, and make recommendations for the user week after week as to what activities they should devote more time towards to achieve greater weight loss.

Structure of the Program

The program will use inheritance, encapsulation, and other features in order to establish functionality. Inheritance is when attributes from one class is passed onto another class or more. Inheritance is necessary in this program for the avoidance of duplication, which will in turn help with faster development, increased reliability, and simplified testing.

Encapsulation in object oriented programming is the protecting of data by grouping various attributes and their methods together, all the while making the attributes private themselves. It is only through public accessor methods, that these attributes can be indirectly accessed indirectly. By doing this, data is protected because the data is only open to manipulation in ways dictated by the methods in association to it, thus resulting in both improved stability and reliability of the program itself. The creation of subclasses will also allow for abstraction, which will ease debugging processes and maintenance of the program.

User Interface/GUI Work

Buttons:

The screenshot displays a user interface with the following elements:

- A "Refresh" button at the top.
- A "Date (dd/mm/yyyy):" label followed by an input field.
- A "Walking – Time Spent (hrs):" label followed by an input field.
- A "Biking – Time Spent (hrs):" label followed by an input field.
- A "Swimming – Time Spent (hrs):" label followed by an input field.
- An "Add To Current Week" button below the input fields.
- A "Generate Plan" button below the input fields.
- A table with the following structure:

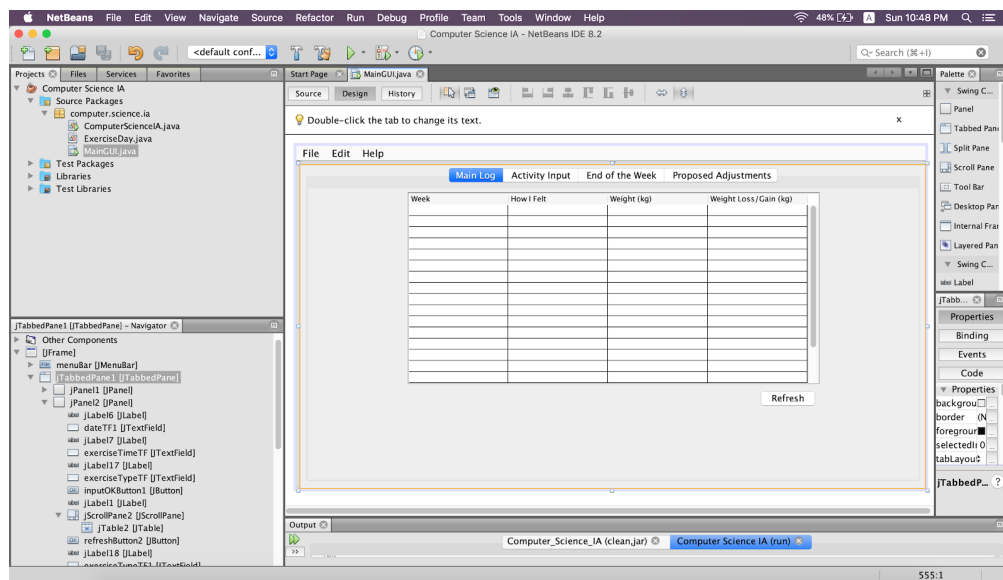
Week Number	Recommended Walking	Recommended Biking	Recommended Swimming

- A "Refresh" button is available at the bottom right hand corner of every table in the program so that the user may see their inputted data displayed as soon as they have entered it.
- An "Add To Current Week" button can be found on the second tab, "Activity Input". This button is meant to be used daily and will allow the program to make calculations using the data stored for later recommendations and the presentation of weekly results.
- In the fourth tab, a "Generate Plan" button is located at the bottom which will create a recommendation for the user for the following week using data which was collected throughout the past week.

Software Tools Used

IDE (Integrated Development Environment)

- Netbeans



Netbeans was the IDE used in the development of this program due to the fact that it is a reliable and well-known IDE for Java used by many programmers all around the world. On top of this, the GUI components which the IDE offers are more than suitable when it comes to the assembly of an interface simple and convenient enough for my client to use. It also houses many pre-programmed classes in which I may use to aid me in programming.

Word Count: 332