Lab 4 – Compound Selection

In Lab 3, we learned about the use of simple selection. In this lab, we will learn more about the selection structure.

Part A – The if-else-if Statement

In the last lab, you had processed the data to calculate the calories from food items and made a simple determination if the food item is healthy or not. In this lab, we refine this.

New research has changed the recommendation regarding how much fat is healthy to the following:

Percent Calories from Fat	Message
less than 25%	"This food item is definitely Heart Healthy"
from 25% to 35%	"This food item is marginally Heart Healthy"
greater than 35%	"This food item is definitely not Heart Healthy"

To handle this multiple categories, we use the `if-else-if` selection structure. This structure is the most difficult part of the if statement to understand, and you must test your understanding by applying it.

Write an algorithm using the `if-else-if` structure to produce the proper output. Check with your instructor if you are having difficulties with this.

Create a new BlueJ project and name it `Lab4_astname_firstname`. In this project, create a new Driver class that translates the above algorithm into Java code. Run the program at least 3 times to see if you get the expected results (based on the calculations from the previous lab).

Part B – Nested Selection Statements

In the tutorial, we considered a more complex selection structure (nested selection). To recall the problem:

> A local bank wants to encourage customers to save. To do this, they have come up with the following policy:
>
> > At the end of the month, if the balance of your account is less than $1,000, you are charged a $10.00 service charge. If the balance is $1,000 or more, the bank pays interest equal to 4% of the balance. To provide an even greater incentive, if the balance is over $10,000, they pay interest of 5% on the amount of the balance over $10,000 (and still 4% interest on the first $10,000).

Lab 4 – Compound Selection

Create a new Driver class in the above BlueJ project. In this class, translate the algorithm that we developed in the tutorial.

Run the program with data that will test all possible conditions that will occur.

Submission

This is the end of the work that is to be submitted. Submit your work by copying your folder `Lab4_lastname_firstname` to the submit folder for your section.