CS101- Algorithms and Programming I
Lab 03

Lab Objectives: Selection statements: if/else if /else, nested if. Comparing numbers, characters, strings.

For all labs in CS 101, your solutions must conform to the CS101 style guidelines (rules!)

1. An airline boards passengers in alphabetic order of their surnames. Those with names earlier in the alphabet board before others. If two passengers are travelling together, they will board at the same time, and the time is determined by the passenger whose name is first alphabetically. For example, if the first passenger has the surname Zengin, and the second has the surname Altin, they will board in the earlier group (Boarding Group 1).

Surname	Group
A – F	Boarding Group 1
G – N	Boarding Group 2
O – T	Boarding Group 3
U – Z	Boarding Group 4

   Create a Java program, Lab03_Q1.java that inputs the surnames of two passengers (separated by a dash) and determines their boarding group using the information in the table above.

   Sample Run 1
   ```
   Enter names of passengers: Palamut-Ender
   BOARDING GROUP 1
   ```

   Sample Run 2
   ```
   Enter names of passengers: Unver-Zengin
   BOARDING GROUP 4
   ```

1. Create a Java program, Lab03_Q2.java. Your program should input the weight of the user and a planet choice and output the user's weight on the given planet. Your program should define constants for the relative surface gravities for the planets shown in the table below. **Do not use loops or switch statements in your solution.**

Planet	Relative gravity
Venus	0.78
Mars	0.39
Jupiter	2.65
Saturn	1.17
Uranus	1.05
Neptune	1.23

Sample Run 1:
```
Enter your weight: 65
Choose the planet:
        1-Venus
        2-Mars
        3-Jupiter
        4-Saturn
        5-Uranus
        6-Neptune
Choice: 5
Your weight on planet 5 is 68.3
```
Sample Run 2:
```
Enter your weight: -56
Invalid weight, quitting.....
```

Sample Run 3:
```
Enter your weight: 65
Choose the planet:
        1-Venus
        2-Mars
        3-Jupiter
        4-Saturn
        5-Uranus
        6-Neptune
Choice: 9
Invalid choice - quitting....
```

2. Create a Java program, Lab03_Q3.java. The program is a version of 20 questions, where the person who is 'it' will think of an object and the players will try to guess the object by asking questions. In this game the user will think of the object and the program will guess the object after asking 2 questions.

   Assumptions and Requirements:

   - The first question will always be animal, vegetable or mineral.
   - The second question will always be is it bigger than a shoebox.
   - The program should not be case sensitive.
   - There are six possible guesses. You can choose your own guesses, but sample guesses are shown in the table below.
   - You should not use arrays/lists or loops in your solutions.
   - You should validate the user input, if the user enters an invalid answer to the questions, a specific error message should be displayed.

	Animal	Vegetable	Mineral
Bigger than a shoe box	Elephant	Pumpkin	Bus
Smaller than a shoe box	Squirrel	Carrot	Pencil

   Sample Run 1:
   ```
   Is the object an Animal/Vegetable/Mineral?
   Answer:Something Else
   I don't understand, "Something Else" is not a valid answer.
   ```

   Sample Run 2:
   ```
   Is the object an Animal/Vegetable/Mineral?
   Answer:mineral
   Is the object bigger than a shoe box?
   Answer:maybe
   I don't understand, "maybe" is not a valid answer.
   ```

   Sample Run 3:
   ```
   Is the object an Animal/Vegetable/Mineral?
   Answer:animal
   Is the object bigger than a shoe box?
   Answer:no
   I know, it's a squirrel!
   ```

   Sample Run 4:
   ```
   Is the object an Animal/Vegetable/Mineral?
   Answer:Vegetable
   Is the object bigger than a shoe box?
   Answer:Yes
   You're thinking of a pumpkin right?
   ```