Lab Module 1

Lab Objectives

In this lab, you will practice:

- Using **System.out.println** to output text and characters to the command window.
- Compiling and executing Java applications.
- Testing a condition using ***if*** or ***if..else*** statement.
- Creating a class declaration.
- Using **import java.util.Scanner** to read user's input.

Exercise 1 —Creating Shapes

Description of the Problem

Write an application that displays the shapes shown in the sample output using asterisks.

Sample Output

Problem-Solving Tips

1. Notice that there are nine rows of asterisks. Write nine **System.out.println** statements.
2. Compile and execute your program in a command window.

Exercise 2 —Using the Escape Sequences, write a complete java program that produces the following output:

Exercise 3- Compile and run a program considering user input and Scanner. (Odd and Even number)

Write a Java program to prompt the user for a positive integer and determine whether it is an even number or odd number.

Exercise 4- Compile and run a program considering user input and Scanner. (Leap Year)

Write a Java program to prompt the user for an input of year and determine whether it is a leap year.

To determine whether a year is a leap year, follow the logic from the following steps:

1. If the year is evenly divisible by 4, go to step 2. Otherwise, go to step 5.
2. If the year is evenly divisible by 100, go to step 3. Otherwise, go to step 4.
3. If the year is evenly divisible by 400, go to step 4. Otherwise, go to step 5.
4. The year is a leap year (it has 366 days).
5. The year is not a leap year (it has 365 days).

Exercise 5- Create a Simple Math Learning Tool

Create a program to let a first grader practice subtraction. The program randomly generates two single-digit integers number1 and number2 and displays a question such as “What is 9 - 2?” to the student. After the student types the answer, the program displays a message to indicate whether the answer is true or false. Use **(int) (Math.random()*10)** to generate the two single-digit integers.

The program can work as follows:

1. Generate two single-digit integers into number1 and number2.
2. If number1 < number2, swap number1 with number2.
3. Prompt the student to answer, “ What is number1 - number2?”
4. Check the student’s answer and display whether the answer is correct.