LAB5 - B Making Decisions

Objective

Whenever the computer runs a Java program, it goes straight from the first line of code to the last. Control statements allow you to make decisions and change the computer's control from automatically reading the next line of code to reading a different one. Let's say you only want to run some code on condition. For example, let's say that you are making a program for a bank. If someone wants to see his records, and gives his password, you don't always want to let him see the records. First, you need to see if his password is correct. You then create a control statement saying *"if"* the password is correct then run the code to let him see the records. *"else"* run the code for people who enter the wrong password. You can even put one control statement inside another. An alternative to a series of *if else* is the switch statement. The switch statement allows you to choose a block of statements to run from a selection of code, based on the return value of an expression. The expression used in the switch statement must return an int or an enumerated value.

The syntax of the switch statement is as follows.

```
switch (expression) {
   case value_1 :
      statement (s);
      break;
   case value_2 :
      statement (s);
      break;
        .
        .
        .
  case value_n :
      statement (s);
      break;
      default:
      statement (s);
    }
```

Failure to add a break statement after a case will not generate a compile error but may have more serious consequences because the statements on the next case will be executed. In this lab we will practice **if**, **If- else** and **Switch** control statements.

Exercise

1. Make a class Evenodd. Make a method that will find if the integer is Even or Odd. Print "EVEN" if the integer is even and "ODD" if it is odd. Make a method comparison( ), take two integers and compare these integers with each other and write code to find whether the first one is greater, smaller or equal to the second one.

Hint:

```
public class Evenodd
 {

// to determine Even/Odd

public void evenOdd()
  {
  // Code to find whether the integer is Even or Odd.
  }

public void comparison()
  {
   // Code to compare variables and find greater and smaller value.
  }

public static void main(String args[])
  {

  }

}
```

2. Make a calculator that will Add, Subtract, Multiply and Divide the 2 integers.

Hint:

```
Example:
Enter two integers 10 and 2.
( * ) multiply sign should print 20
( + ) plus sign should print 12
(  - ) minus should print 8
(  / ) divide should print 5.


 // Use Switch Statement
```

```
public class Calculator
{
 // Write code here

 public static void main(String args[])
 {
 // Write executable Code here
 }
}
```

3. Make a class GradeCalculator. Write code which displays relevant Grade in accordance with the score. For a score of 90 and above assign grade A, 80 and above grade B, 70 and above grade C, 60 and above grade D and below 60 grade E.

Hint:

```
class GradeCalculator {
   public static void main(String[] args) {

 //   score of 90 and above assign grade A
 //   80 and above grade B
 //   70 and above grade C
 //   60 and above grade D
 //   below 60 grade E

  }
}
```

4. Palindrome is a word which has the property of being read the same forward and backwards for example “madam”, “civic” or “eye”. Write a program to find out whether the Five letter word is a palindrome or not. Make a class *Palindrome*, define a String *word in the main method.* If it is a palindrome give the output “This word is a palindrome” otherwise give output “This word is not a palindrome”.

Hint:

```
// To match characters in a word use following method:
 word.charAt(0);       // for first character of the word
 word.charAt(1);       // for second character of the word
 word.charAt(2);       // for third character of the word……so on

// Use '==' operator to match characters in a word.


 public class Palindrome{

  public static void main(String args[])
    {
      String word = "civic";
         .
         .
         ….
         …….// Write executable code here


    }

 }
```