15. Switch Statement

The Java switch statement executes one statement from multiple conditions. It is like if-else-if ladder statement. The switch statement works with byte, short, int, char, enum types, String and some wrapper types like Byte, Short, Int, and Character. Since Java 7, you can use strings in the switch statement.

In other words, the switch statement tests the equality of a variable against multiple values.

Points to Remember

- There can be *one or N number of case values* for a switch expression.
- The case value must be of switch expression type only. The case value must be *literal or constant*. It doesn't allow variables.
- The case values must be *unique*. In case of duplicate value, it renders compile-time error.
- The Java switch expression must be of *byte, short, int, long (with its Wrapper type), enums and string*.
- Each case statement can have a *break statement* which is optional. When control reaches to the break statement, it jumps the control after the switch expression. If a break statement is not found, it executes the next case.
- The case value can have a *default label* which is optional.

Syntax:

```
switch(expression)
{
    case value1:
     //code to be executed;
     break;  //optional
    case value2:
     //code to be executed;
     break;  //optional
    ......

    default:
      code to be executed if all cases are not matched;
}
```

Switch Example1:

```
public class SwitchExample1
{
      public static void main(String[] args)
      {
      //Declaring a variable for switch expression
      int number=20;
      //Switch expression
      switch(number)
      {
            //Case statements
            case 10: System.out.println("10");
                  break;
            case 20: System.out.println("20");
            break;
            case 30: System.out.println("30");
            break;
            //Default case statement
            default:System.out.println("Not in 10, 20 or 30");
      }
      }
}
```

Output:

```
20
```

Switch Example2:

```
//Java Program to demonstrate the example of Switch statement
//where we are printing month name for the given number
public class SwitchExample2
{
public static void main(String[] args)
      {
    //Specifying month number
    int month=7;
    String monthString="";
    //Switch statement
    switch(month){
    //case statements within the switch block
    case 1: monthString="1 - January";
    break;
    case 2: monthString="2 - February";
    break;
    case 3: monthString="3 - March";
    break;
    case 4: monthString="4 - April";
    break;
    case 5: monthString="5 - May";
```

```
    break;
    case 6: monthString="6 - June";
    break;
    case 7: monthString="7 - July";
    break;
    case 8: monthString="8 - August";
    break;
    case 9: monthString="9 - September";
    break;
    case 10: monthString="10 - October";
    break;
    case 11: monthString="11 - November";
    break;
    case 12: monthString="12 - December";
    break;
    default:System.out.println("Invalid Month!");
    }
    //Printing month of the given number
    System.out.println(monthString);
     }
}
```

Output:

```
7 - July
```

Switch Example3:

```
public class SwitchExample3
{
public static void main(String[] args)
     {
    char ch='O';
    switch(ch)
     {
        case 'a':
            System.out.println("Vowel");
            break;
        case 'e':
            System.out.println("Vowel");
            break;
        case 'i':
            System.out.println("Vowel");
            break;
        case 'o':
            System.out.println("Vowel");
            break;
        case 'u':
            System.out.println("Vowel");
            break;
```

```
        case 'A':
            System.out.println("Vowel");
            break;
        case 'E':
            System.out.println("Vowel");
            break;
        case 'I':
            System.out.println("Vowel");
            break;
        case 'O':
            System.out.println("Vowel");
            break;
        case 'U':
            System.out.println("Vowel");
            break;
        default:
            System.out.println("Consonant");
      }
      }
}
```

Output:

```
Vowel
```

Switch Example4:

```
//Java Switch Example where we are omitting the
//break statement
public class SwitchExample4
{
      public static void main(String[] args)
      {
    int number=20;
    //switch expression with int value
    switch(number)
    {
    //switch cases without break statements
    case 10: System.out.println("10");
    case 20: System.out.println("20");
    case 30: System.out.println("30");
    default:System.out.println("Not in 10, 20 or 30");
    }
    }
}
```

Output:

```
20
30
Not in 10, 20 or 30
```

Switch Example5:

```
//Java Program to demonstrate the use of Java Switch
//statement with String
public class SwitchExample5
{
      public static void main(String[] args)
      {
            //Declaring String variable
            String levelString="Expert";
            int level=0;
            //Using String in Switch expression
            switch(levelString)
            {
            //Using String Literal in Switch case
            case "Beginner": level=1;
            break;
            case "Intermediate": level=2;
            break;
            case "Expert": level=3;
            break;
            default: level=0;
            break;
            }
       System.out.println("Your Level is: "+level);
      }
}
```

Output:

```
Your Level is: 3
```

Wrapper In Switch Example6:

```
//Java Program to demonstrate the use of Wrapper class
//in switch statement
public class WrapperInSwitchCaseExample
{
      public static void main(String args[])
      {
      Integer age = 18;
      switch (age)
      {
      case (16):
      System.out.println("You are under 18.");
      break;
      case (18):
      System.out.println("You are eligible for vote.");
      break;
      case (65):
```

```
      System.out.println("You are senior citizen.");
      break;
      default:
      System.out.println("Please give the valid age.");
      break;
      }
      }
}
```

Output:

```
You are eligible for vote.
```