FEB 2025

OOPJ ASSIGNMENT NO – 1

Ashwini Vadkar

1. Create a program that declares and initializes all primitive data types in Java and prints their default and assigned values.

Ans :-

Input Code:

```
class PrimitiveDataType {
    byte byteValue;
    short shortValue;
    int intValue;
    long longValue;
    float floatValue;
    double doubleValue;
    char charValue;
    boolean booleanValue;

    public static void main(String args[]) {
        PrimitiveDataType obj = new PrimitiveDataType();

        byte x = 5;
        short y = 15;
        int z = 25;
        long w = 35L;
        float p = 45.5f;
        double q = 55.55;
        char r = 'B';
        boolean s = false;

        System.out.println("Default Values:");
        System.out.println("byte: " + obj.byteValue);
        System.out.println("short: " + obj.shortValue);
        System.out.println("int: " + obj.intValue);
```

```
        System.out.println("long: " + obj.longValue);
        System.out.println("float: " + obj.floatValue);
        System.out.println("double: " + obj.doubleValue);
        System.out.println("char: " + obj.charValue);
        System.out.println("boolean: " + obj.booleanValue);

        System.out.println("\nAssigned Values:");
        System.out.println("byte: " + x);
        System.out.println("short: " + y);
        System.out.println("int: " + z);
        System.out.println("long: " + w);
        System.out.println("float: " + p);
        System.out.println("double: " + q);
        System.out.println("char: " + r);
        System.out.println("boolean: " + s);
    }
}
```

Output :

```
C:\Users\aksha\Documents\Feb- 2025\C-DAC--FEB--2025\OOPJ_ASSIGNMENT\
OOPJ_Assignment - 1_Ashwini Vadkar>javac  PrimitiveDataTypes.java

C:\Users\aksha\Documents\Feb- 2025\C-DAC--FEB--2025\OOPJ_ASSIGNMENT\
OOPJ_Assignment - 1_Ashwini Vadkar>java  PrimitiveDataTypes
Default Values:
byte: 0
short: 0
int: 0
long: 0
float: 0.0
double: 0.0
char: ''
boolean: false

Assigned Values:
byte: 5
short: 15
int: 25
long: 35
float: 45.5
double: 55.55
char: B
boolean: false
```

---

2. Write a program to convert an int value to double automatically and display both values.

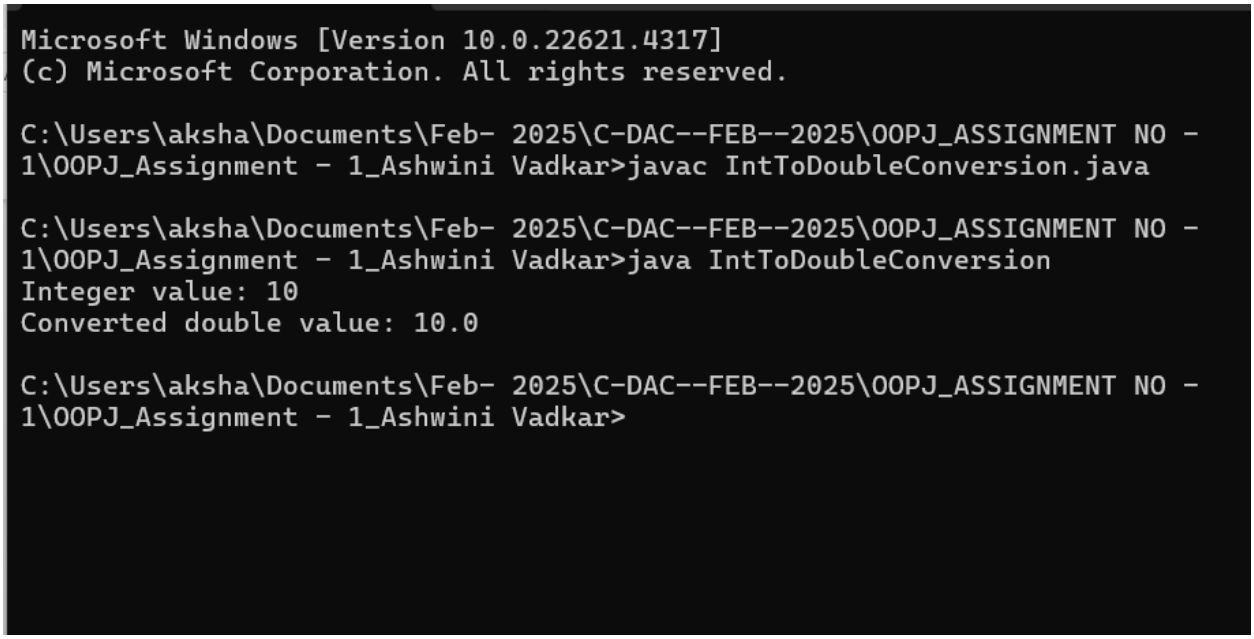
Ans :-

Input Code :

```
public class IntToDoubleConversion {
    public static void main(String args[]) {
        int intValue = 10;
        double doubleValue = intValue;
```

```
        System.out.println("Integer value: " + intValue);
        System.out.println("Converted double value: " + doubleValue);
    }
}
```

Output :



---

3. Write a program to convert a double value to int using typecasting and explain the data loss.

Ans :-

Input Code:

```
public class DoubleToIntConversion {
    public static void main(String args[]) {
        double a = 10.75;
        int b = (int) a;

        System.out.println("Original double value: " + doubleValue);
        System.out.println("Converted int value: " + intValue);
    }
```

}

Output :

```
C:\Users\aksha\Documents\Feb- 2025\C-DAC--FEB--2025\OOPJ_ASSIGNMENT NO -
1\OOPJ_Assignment - 1_Ashwini Vadkar>javac DoubleToIntConversion.java

C:\Users\aksha\Documents\Feb- 2025\C-DAC--FEB--2025\OOPJ_ASSIGNMENT NO -
1\OOPJ_Assignment - 1_Ashwini Vadkar>java DoubleToIntConversion
Double Value: 10.5
Int Value: 10
```

---

4. Write a program to calculate the average of three int numbers using typecasting to display the result in double.

Ans :-

Input Code :

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

   int a=100;
   int b=200;
   int c=300;
double avg = ((double) a+b+c)/3;
System.out.println("average: "+avg);
}
}
```

Output :

```
C:\Users\aksha\Documents\Feb- 2025\C-DAC--FEB--2025\OOPJ_ASSIGNMENT NO -
1\OOPJ_Assignment - 1_Ashwini Vadkar>javac AverageCalculation.java

C:\Users\aksha\Documents\Feb- 2025\C-DAC--FEB--2025\OOPJ_ASSIGNMENT NO -
1\OOPJ_Assignment - 1_Ashwini Vadkar>java AverageCalculation
average: 200.0
```

---

5. Write a program to demonstrate binary, octal, hexadecimal, and floating-point literals in Java.

Ans :-

Input Code :

```
public class LiteralDemo{
   public static void main (String args[]){
   int a= 0b10110;
      int b= 012;
      int c =0x12A;
      float f= 300.05f;
      System.out.println("binary: "+ a);
   System.out.println("Octa: "+ b);
   System.out.println("Hexa-decimal: "+ c);
   System.out.println("float: "+ f);
}
}
```

Output :

```
C:\Users\aksha\Documents\Feb- 2025\C-DAC--FEB--2025\OOPJ_ASSIGNMENT NO -
1\OOPJ_Assignment - 1_Ashwini Vadkar>javac  LiteralDemo.java

C:\Users\aksha\Documents\Feb- 2025\C-DAC--FEB--2025\OOPJ_ASSIGNMENT NO -
1\OOPJ_Assignment - 1_Ashwini Vadkar>java  LiteralDemo
binary: 22
Octa: 10
Hexa-decimal: 298
float: 300.05
```

---

6. Write a program to display character and string literals along with their ASCII values.

Ans :-

Input Code :

```
public class Ascii {
   public static void main(String args[]) {
      char a = 'A';
      String b = "Hello";
      int asciiValue = a;

      System.out.println("Char literal: " + a);
      System.out.println("ASCII value of '" + a + "': " + asciiValue);
      System.out.println("String literal: " + b);

      for (char ch : b.toCharArray()) {
```

```
            System.out.println("ASCII value of '" + ch + "': " + (int) ch);
        }
    }
}
```

Output :

```
C:\Users\aksha\Documents\Feb- 2025\C-DAC--FEB--2025\OOPJ_ASSIGNMENT NO -
1\OOPJ_Assignment - 1_Ashwini Vadkar>javac Ascii.java

C:\Users\aksha\Documents\Feb- 2025\C-DAC--FEB--2025\OOPJ_ASSIGNMENT NO -
1\OOPJ_Assignment - 1_Ashwini Vadkar>java Ascii
Char literal: A
ASCII value of 'A': 65
String literal: Hello
ASCII value of 'H': 72
ASCII value of 'e': 101
ASCII value of 'l': 108
ASCII value of 'l': 108
ASCII value of 'o': 111
```

---

7. Write a program that uses boolean literals to control program flow in an if-else statement.

Ans:-

Input Code :

```
public class BooleanLiterals {
    public static void main(String args[]) {
    boolean isWeekend = true;

if (isWeekend) {
    System.out.println("It's the weekend! Time to relax.");
} else {
            System.out.println("It's a weekday. Time to work or study.");
        }
    }
}
```

Output :

```
C:\Users\aksha\Documents\Feb- 2025\C-DAC--FEB--2025\OOPJ_ASSIGNMENT NO -
1\OOPJ_Assignment - 1_Ashwini Vadkar>javac BooleanLiterals.java

C:\Users\aksha\Documents\Feb- 2025\C-DAC--FEB--2025\OOPJ_ASSIGNMENT NO -
1\OOPJ_Assignment - 1_Ashwini Vadkar>java BooleanLiterals
It's the weekend! Time to relax.
```

---

8. Write a program to perform addition, subtraction, multiplication, division, and modulus operations on two integer numbers and display the results.

Ans :-

Input Code :

```
public class ArithmeticOperations {
   public static void main(String args[]) {
   boolean condition = true;
int a = 50;
int b = 25;
int sum = a + b;
int sub = a - b;
int mult = a * b;
double div = (double) a/b;
int mod = a % b;

System.out.println("Numbers are " + a + " , " +b);
System.out.println("Addition of numbers: " + sum);
System.out.println("Subtraction of numbers: " + sub);
       System.out.println("Multiplication of numbers: " + mult);
       System.out.println("Division of numbers: " + div);
       System.out.println("Modulus of numbers: " + mod);
   }
}
```

Output :

```
C:\Users\aksha\Documents\Feb- 2025\C-DAC--FEB--2025\OOPJ_ASSIGNMENT NO - 1\OOPJ_Assignment - 1_Ashwini Vadkar>javac ArithmeticOperations.java

C:\Users\aksha\Documents\Feb- 2025\C-DAC--FEB--2025\OOPJ_ASSIGNMENT NO - 1\OOPJ_Assignment - 1_Ashwini Vadkar>java ArithmeticOperations
Numbers are 50 , 25
Addition of numbers: 75
Subtraction of numbers: 25
Multiplication of numbers: 1250
Division of numbers: 2.0
Modulus of numbers: 0
```

---

9. Write a program to perform addition, subtraction, multiplication, division, and modulus operations on two integer numbers and display the results.

Ans :-

Input Code :

```
public class MathOperations {
   public static void main(String args[]) {
      int num1 = 25;
      int num2 = 7;

      int sum = num1 + num2;
      int difference = num1 - num2;
      int product = num1 * num2;
      int quotient = num1 / num2;
      int remainder = num1 % num2;

      System.out.println("Numbers are: " + num1 + " and " + num2);
      System.out.println("Addition: " + sum);
      System.out.println("Subtraction: " + difference);
      System.out.println("Multiplication: " + product);
      System.out.println("Division: " + quotient);
      System.out.println("Modulus (Remainder): " + remainder);
   }
}
```

Output :

```
C:\Users\aksha\Documents\Feb- 2025\C-DAC--FEB--2025\OOPJ_ASSIGNMENT NO -
1\OOPJ_Assignment - 1_Ashwini Vadkar>javac MathOperations.java

C:\Users\aksha\Documents\Feb- 2025\C-DAC--FEB--2025\OOPJ_ASSIGNMENT NO -
1\OOPJ_Assignment - 1_Ashwini Vadkar>java MathOperations
Numbers are: 25 and 7
Addition: 32
Subtraction: 18
Multiplication: 175
Division: 3
Modulus (Remainder): 4
```

---

10. Write a program to compare two integers using all relational operators (==, !=, >, <, =, <=) and display the results.

Ans :-

Input Code :

```
ic class RelationalOperators {

    public static void main(String args[]) {

        int num1 = 15;

        int num2 = 25;


        boolean isEqual = num1 == num2;

        boolean isNotEqual = num1 != num2;

        boolean isGreater = num1 > num2;

        boolean isLess = num1 < num2;

        boolean isGreaterOrEqual = num1 >= num2;

        boolean isLessOrEqual = num1 <= num2;
```

```
        System.out.println("Numbers: num1 = " + num1 + ", num2 = " + num2);
        System.out.println("num1 == num2: " + isEqual);
        System.out.println("num1 != num2: " + isNotEqual);
        System.out.println("num1 > num2: " + isGreater);
        System.out.println("num1 < num2: " + isLess);
        System.out.println("num1 >= num2: " + isGreaterOrEqual);
        System.out.println("num1 <= num2: " + isLessOrEqual);
    }
}
```

Output :

```
C:\Users\aksha\Documents\Feb- 2025\C-DAC--FEB--2025\OOPJ_ASSIGNMENT NO -
1\OOPJ_Assignment - 1_Ashwini Vadkar>javac RelationalOperators.java

C:\Users\aksha\Documents\Feb- 2025\C-DAC--FEB--2025\OOPJ_ASSIGNMENT NO -
1\OOPJ_Assignment - 1_Ashwini Vadkar>java RelationalOperators
Numbers: num1 = 15, num2 = 25
num1 == num2: false
num1 != num2: true
num1 > num2: false
num1 < num2: true
num1 >= num2: false
num1 <= num2: true
```

---

11. Write a program to check if a number is positive and even using logical operators (&&, ||, !).

Ans :-

Input Code :

```
import java.util.Scanner;
```

```
public class CheckNumber {
    public static void main(String args[]) {
        Scanner input = new Scanner(System.in);
        System.out.println("Enter the number:");
        int num = input.nextInt();

        if (num >= 0 && num % 2 == 0) {
            System.out.println("Condition matched");
        } else {
            System.out.println("Condition not matched");
        }

        input.close();
    }
}
```

Output :

```
C:\Users\aksha\Documents\Feb- 2025\C-DAC--FEB--2025\OOPJ_ASSIGNMENT NO - 1\OOPJ_Assignment - 1_Ashwini Vadkar>javac CheckNumber.java

C:\Users\aksha\Documents\Feb- 2025\C-DAC--FEB--2025\OOPJ_ASSIGNMENT NO - 1\OOPJ_Assignment - 1_Ashwini Vadkar>java CheckNumber
Enter the number:
10
Condition matched
```

---

12. Write a program to demonstrate the use of assignment operators (=, +=, -=, *=, /=, %=) on two integers.

Ans :-

Input Code :

```
public class AssignmentOperators {

    public static void main(String args[]) {

        int a = 10, b = 5;



        System.out.println("Initial values: a = " + a + ", b = " + b);



        a += b;

        System.out.println("After a += b, a = " + a);



        a -= b;

        System.out.println("After a -= b, a = " + a);



        a *= b;

        System.out.println("After a *= b, a = " + a);



        a /= b;

        System.out.println("After a /= b, a = " + a);



        a %= b;
```

```
        System.out.println("After a %= b, a = " + a);
    }
}
```

Output :

```
C:\Users\aksha\Documents\Feb- 2025\C-DAC--FEB--2025\OOPJ_ASSIGNMENT NO -
1\OOPJ_Assignment - 1_Ashwini Vadkar>javac AssignmentOperators.java

C:\Users\aksha\Documents\Feb- 2025\C-DAC--FEB--2025\OOPJ_ASSIGNMENT NO -
1\OOPJ_Assignment - 1_Ashwini Vadkar>java AssignmentOperators
Enter first number (a): 5
Enter second number (b): 10
Initial values: a = 5, b = 10
After a += b, a = 15
After a -= b, a = 5
After a *= b, a = 50
After a /= b, a = 5
After a %= b, a = 5
```