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Name: Y. Rajanivas

Mail: rajanivas970@gmail.com

Java Assignment 2

Bitwise Operator:

In Java, bitwise operators perform operations on integer data at the individual bit-level. Here, the integer data includes int, short, long ,byte types of data. Some of operators are .

1) Bitwise XOR(^):

The bitwise XOR ^ operator returns 1 if and only if one of the operands is 1. However, if both the operands are 0 or if both are 1, then the result is 0.

Example for XOR(^):

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

    int number1 = 12, number2 = 25;

    // bitwise XOR of 12 and 25
    Int result = number1 ^ number2;
    System.out.println(result);
  }
}
```

Output: 21

2) Bitwise Complement(~):

The bitwise complement operator is a unary operator (works with only one operand). It is denoted by (~).It changes binary digits **1** to **0** and **0** to **1**.

Example for Bitwise complement(~):

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

    int number = 35;

    // bitwise complement of 35
    Int result = ~number;
    System.out.println(result);
  }
}
```

Output: -36

Unary Operators:

Unary operators are such operators which would take only one operand to perform an operation.

1) Unary plus(+):

It is used to represent the **positive** value.

Example for Unary plus(-):

```
package project;

public class unaryplus {

      public static void main(String[] args) {
            int a = +25;
            System.out.println(a);

      }

}
```

Output: 25

2) Unary Minus(-):

Unary minus is used to represent the **negative** value.

Example for Unary minus:

```
package project;

public class unaryminus {

      public static void main(String[] args) {
            int a = -20;
            System.out.println(a);

      }

}
```

Output: -20

BigInteger:

In java , “BigInteger is a class that provides arbitrary precision (bignum) integer airthematic. It belong’s to “java.math” package

>> In handles integer value pf any size. BigInteger class is useful when working with extremely large integers that cannot be represented by the standard integer type(int, long, etc).it performs addition, subtraction, multiplication, division, modular airthematic, exponentiation and more on this large integers.

Example for BigInteger:

```
package project;
import java.math.BigInteger;
public class unaryplus {

      public static void main(String[] args) {
         // Create two BigIntegers
        BigInteger num1 = new BigInteger("12345678901234567890");
        BigInteger num2 = new BigInteger("98765432109876543210");

        // Perform arithmetic operations
        BigInteger sum = num1.add(num2);
        BigInteger difference = num1.subtract(num2);
        BigInteger product = num1.multiply(num2);
        BigInteger quotient = num1.divide(num2);
        BigInteger remainder = num1.remainder(num2);

        // Print the results
        System.out.println("Sum: " + sum);
        System.out.println("Difference: " + difference);
        System.out.println("Product: " + product);
        System.out.println("Quotient: " + quotient);
        System.out.println("Remainder: " + remainder);

      }

}
```

Output:

```
Sum: 111111111011111111100
Difference: -86419753208641975320
Product: 1219326311370217952237463801111263526900
Quotient: 0
Remainder: 12345678901234567890
```