

OOPJ: Assignment No-2

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1. Arithmetic & Assignment Operators

Q1: Write a program to swap two numbers **without using a third variable** and without using arithmetic operators like + or -.

Hint: Use bitwise XOR ^ operator.

Ans.: import java.util.Scanner;

```
public class SwapBitwiseOp {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter two numbers: ");
        int x = sc.nextInt();
        int y = sc.nextInt();

        System.out.println("Before swapping: x = " + x + ", y = " + y);

        x = x ^ y;
        y = x ^ y;
        x = x ^ y;

        System.out.println("After swapping: x = " + x + ", y = " + y);

        sc.close();
    }
}
```

```
D:\CDAC DATA FEB 25\OOPJ\Assignment\OOPJ Assignment-2>javac SwapBitwiseOp.java
D:\CDAC DATA FEB 25\OOPJ\Assignment\OOPJ Assignment-2>java SwapBitwiseOp
Enter two numbers: 3
6
Before swapping: x = 3, y = 6
After swapping: x = 6, y = 3
```

Q2: Write a program to check whether a given number is **even or odd** using only **bitwise operators**.

Hint: Use `n & 1` to check.

Ans.: import java.util.Scanner;

```
public class EvenOddBitwiseOp {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter two numbers: ");
        int n = sc.nextInt();
        if ( (n&1)==0)
        {
            System.out.print(n+ " is Even: ");
        }
    }
}
```

```

    }
    else{
        System.out.print(n+ " is Odd: ");
    }
    sc.close();
}
}

```

```

D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java EvenOddBitwiseOp
Enter two numbers: 6
6 is Even:
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac EvenOddBitwiseOp.java

D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java EvenOddBitwiseOp
Enter two numbers: 3
3 is Odd:

```

Q3: Implement a program that calculates the **sum of digits** of an integer using **modulus (%) and division (/) operators**.

Ans.:

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

```

public class SumOfDigits {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter an integer: ");
        int num = sc.nextInt();
        int sum = 0;
        int temp = Math.abs(num);
        while (temp > 0) {
            sum += temp % 10;
            temp /= 10;
        }
        System.out.println("Sum of digits: " + sum);

        sc.close();
    }
}

```

```

D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac SumOfDigits.java

D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java SumOfDigits
Enter an integer: 3456
Sum of digits: 18

```

Q4: Write a program to find whether a given number is **divisible by 3** without using the modulus (%) or division (/) operators.

Hint: Use **subtraction and bitwise shifts**.

Ans.:

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

```

public class DivisibleByThree {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int num = sc.nextInt();
    }
}

```

```

    if (num < 0) num = -num;
    int sum = 0;

    while (num > 0) {
        sum += (num & 7);
        num = num >> 3;
    }
    if (sum == 0 || sum == 3 || sum == 6 || sum == 9) {
        System.out.println("The number is divisible by 3.");
    } else {
        System.out.println("The number is NOT divisible by 3.");
    }
    sc.close();
}
}

```

```

D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac DivisibleByThree.java
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java DivisibleByThree
Enter a number: 27
The number is divisible by 3.

```

Q5: Write a Java program to **swap two numbers** using the += and -= operators only.

Ans.:

```

import java.util.Scanner;

public class SwapNumbers {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        System.out.print("Enter first number (a): ");
        int a = sc.nextInt();

        System.out.print("Enter second number (b): ");
        int b = sc.nextInt();

        a += b;
        b = a - b;
        a -= b;

        System.out.println("After swapping:");
        System.out.println("First number (a): " + a);
        System.out.println("Second number (b): " + b);
        sc.close();
    }
}

```

```

D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java SwapNumbers
Enter first number (a): 5
Enter second number (b): 6
After swapping:
First number (a): 6
Second number (b): 5

```

2. Relational & Logical Operators

Q6: Write a program to find the **largest of three numbers** using only the **ternary operator** (? :).

Ans.:

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

```
public class LargestOfThree {  
  
    public static void main(String[] args) {  
  
        Scanner sc = new Scanner(System.in);  
  
        System.out.print("Enter first number: ");  
  
        int a = sc.nextInt();  
  
        System.out.print("Enter second number: ");  
  
        int b = sc.nextInt();  
  
        System.out.print("Enter third number: ");  
  
        int c = sc.nextInt();  
  
        int largest = (a > b) ? ((a > c) ? a : c) : ((b > c) ? b : c);  
  
        System.out.println("The largest number is: " + largest);  
  
        sc.close();  
  
    }  
  
}
```

```
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac LargestOfThree.java  
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java LargestOfThree  
Enter first number: 6  
Enter second number: 9  
Enter third number: 2  
The largest number is: 9  
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>
```

Q7: Implement a Java program that checks whether a given year is a leap year or not using logical (&&, ||) operators.

Ans.:

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

```
public class LeapYearCheck {  
    public static void main(String[] args) {  
        Scanner sc = new Scanner(System.in);  
        System.out.print("Enter a year: ");
```

```

        int year = sc.nextInt();
        if ((year % 4 == 0 && year % 100 != 0) || (year % 400 == 0)) {
            System.out.println(year + " is a leap year.");
        } else {
            System.out.println(year + " is not a leap year.");
        }
        sc.close();
    }
}

```

```

D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java LeapYearCheck
Enter a year: 2024
2024 is a leap year.

D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac LeapYearCheck.java

D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java LeapYearCheck
Enter a year: 2023
2023 is not a leap year.

```

Q8: Write a program that takes three boolean inputs and prints `true` if at least two of them are `true`.

Hint: Use logical operators (`&&`, `||`).

Ans:.

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

```

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

        Scanner sc = new Scanner(System.in);
        System.out.print("Enter first boolean value (true/false): ");

        boolean a = sc.nextBoolean();
        System.out.print("Enter second boolean value (true/false): ");

        boolean b = sc.nextBoolean();
        System.out.print("Enter third boolean value (true/false): ");

        boolean c = sc.nextBoolean();
        boolean result = (a && b) || (b && c) || (a && c);

        System.out.println("At least two values are true: " + result);
        sc.close();
    }
}

```

```

D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac AtLeastTwoTrue.java

D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java AtLeastTwoTrue
Enter first boolean value (true/false): true
Enter second boolean value (true/false): false
Enter third boolean value (true/false): true
At least two values are true: true

D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac AtLeastTwoTrue.java

D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java AtLeastTwoTrue
Enter first boolean value (true/false): false
Enter second boolean value (true/false): false
Enter third boolean value (true/false): true
At least two values are true: false

```

Q9: Implement a Java program that checks if a number is within a specific range (20 to 50) without using `if-else`.

Hint: Use logical AND (`&&`) in a print statement.

Ans.:

```

import java.util.Scanner;

public class NumberInRange {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        System.out.print("Enter a number: ");
        int number = sc.nextInt();
        System.out.println("Is the number in the range 20 to 50? " + (number >= 20 && number
<= 50));
        sc.close();
    }
}

```

```

D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac NumberInRange.java

D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java NumberInRange
Enter a number: 25
Is the number in the range 20 to 50? true

```

Q10: Write a program to determine if a character is a vowel or a consonant using the ternary operator.

Ans.:

```

import java.util.Scanner;

public class VowelOrConsonant {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        System.out.print("Enter a character: ");
        char ch = sc.next().toLowerCase().charAt(0); // Convert to lowercase to handle
uppercase input

        String result = (ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u') ? "Vowel"

```

```
: ((ch >= 'a' && ch <= 'z') ? "Consonant" : "Invalid input");
```

```
System.out.println("The character is: " + result);
```

```
sc.close();
```

```
}
```

```
}
```

```
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java VowelOrConsonant
Enter a character: abc
The character is: Vowel
```

```
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac VowelOrConsonant.jav
a
```

```
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java VowelOrConsonant
Enter a character: p
The character is: Consonant
```

3. Bitwise Operators

Q11: Write a program to check if a given number is a **power of 2** using bitwise operators.

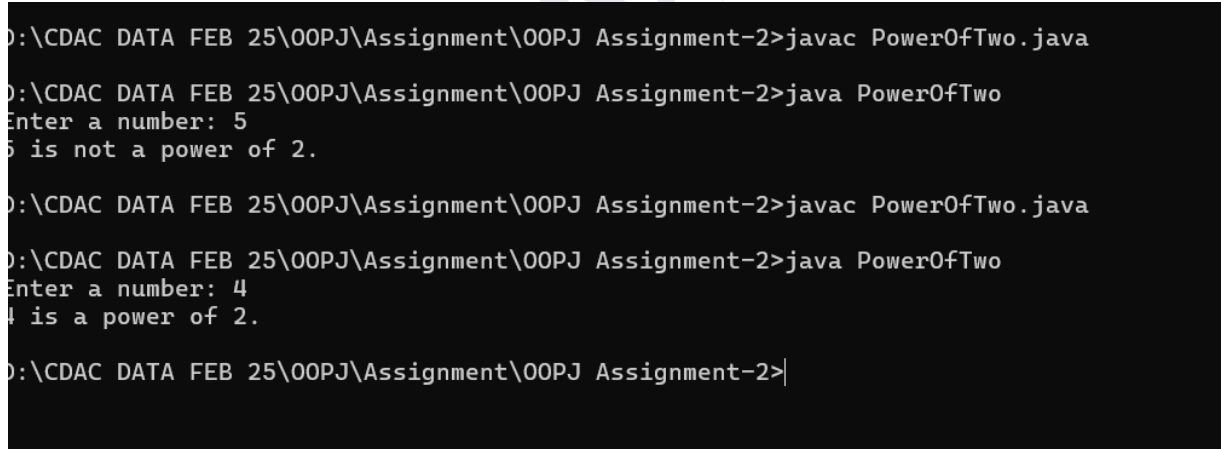
Hint: $n \& (n - 1) == 0$ for positive numbers.

Ans.: import java.util.Scanner;

```
public class PowerOfTwo {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int n = sc.nextInt();

        if (n > 0 && (n & (n - 1)) == 0) {
            System.out.println(n + " is a power of 2.");
        } else {
            System.out.println(n + " is not a power of 2.");
        }

        sc.close();
    }
}
```



```
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac PowerOfTwo.java
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java PowerOfTwo
Enter a number: 5
5 is not a power of 2.
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac PowerOfTwo.java
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java PowerOfTwo
Enter a number: 4
4 is a power of 2.
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>|
```

Q12: Write a Java program to **multiply a number by 8** without using * or / operators.

Hint: Use bitwise left shift (<<).

Ans.:

import java.util.Scanner;

```
public class MultiplyByEight {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int n = sc.nextInt();
        int result = n << 3;

        System.out.println("Result: " + result);
        sc.close();
    }
}
```



```
}  
}
```

```
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac MultiplyByEight.java  
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java MultiplyByEight  
Enter a number: 5  
Result: 40
```

Q13: Implement a Java program to find the **absolute value** of an integer using bitwise operators.

Hint: `mask = num >> 31; abs = (num + mask) ^ mask;`

Ans.:

```
import java.util.Scanner;  
  
public class AbsoluteValue {  
    public static void main(String[] args) {  
        Scanner sc = new Scanner(System.in);  
        System.out.print("Enter a number: ");  
        int num = sc.nextInt();  
  
        int mask = num >> 31; // Extracts the sign bit (0 for  
positive, -1 for negative)  
        int abs = (num + mask) ^ mask; // Computes absolute value  
  
        System.out.println("Absolute value: " + abs);  
        sc.close();  
    }  
}
```

```
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac AbsoluteValue.java  
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java AbsoluteValue  
Enter a number: 5  
Absolute value: 5  
  
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac AbsoluteValue.java  
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java AbsoluteValue  
Enter a number: -5  
Absolute value: 5
```

Q14: Write a program to count the **number of 1s (set bits)** in a binary representation of a number using bitwise operations.

Hint: Use `n & (n - 1)`.

Ans.:

```
import java.util.Scanner;  
  
public class CountSetBits {  
    public static int countOnes(int n) {  
        int count = 0;  
        while (n > 0) {  
            n = n & (n - 1);  
            count++;  
        }  
        return count;  
    }  
}
```

```

public static void main(String[] args) {
    Scanner sc = new Scanner(System.in);
    System.out.print("Enter a number: ");
    int num = sc.nextInt();

    int onesCount = countOnes(num);
    System.out.println("Number of 1s in binary: " + onesCount);
    sc.close();
}
}

```

```

D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac CountSetBits.java
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java CountSetBits
Enter a number: 13
Number of 1s in binary: 3

```

Q15: Implement a program to swap **odd and even bits** of a number using bitwise operators.

Hint: Use masks: $(x \& 0xAAAAAAAA) \gg 1 \mid (x \& 0x55555555) \ll 1$.

Ans.: import java.util.Scanner;

```

public class SwapBits {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int n = sc.nextInt();

        int swapped = ((n & 0xAAAAAAAA) >> 1) | ((n & 0x55555555) << 1);
        System.out.println("Swapped number: " + swapped);
        sc.close();
    }
}

```

```

C:\Windows\System32\cmd.e  x  +  v
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac SwapBits.java
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java SwapBits
Enter a number: 23
Swapped number: 43

```

4. Ternary Operator Challenges

Q16: Write a program that determines whether a given number is **positive, negative, or zero** using only the **ternary operator**.

Ans.: import java.util.Scanner;

```

public class NumberCheck {

    public static void main(String[] args) {

```

```

Scanner sc = new Scanner(System.in);

System.out.print("Enter a number: ");

int num = sc.nextInt();

String result = (num > 0) ? "Positive" : (num < 0) ? "Negative" : "Zero";

System.out.println("The number is: " + result);

        sc.close();

    }

}

```

```

D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac NumberCheck.java

D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java NumberCheck
Enter a number: 10
The number is: Positive

D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac NumberCheck.java

D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java NumberCheck
Enter a number: -20
The number is: Negative

```

Q17: Implement a Java program that finds the **minimum of four numbers** using nested ternary operators.

Ans.: import java.util.Scanner;

```

public class MinOfFour {

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

        System.out.print("Enter four numbers: ");

        int a = sc.nextInt();

        int b = sc.nextInt();

        int c = sc.nextInt();

        int d = sc.nextInt();

        int min = (a < b) ? ((a < c) ? ((a < d) ? a : d) : ((c < d) ? c : d))

                : ((b < c) ? ((b < d) ? b : d) : ((c < d) ? c : d));

        System.out.println("The minimum number is: " + min);

        sc.close();
    }
}

```

```
}  
  
}
```

```
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac MinOfFour.java  
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java MinOfFour  
Enter four numbers: 8369  
23  
58  
123  
The minimum number is: 23
```

Q18: Given a student's percentage, print **"Pass"** if the percentage is 40 or above; otherwise, print **"Fail"**, using only the ternary operator.

Ans.: import java.util.Scanner;

```
public class StudentResult {  
  
    public static void main(String[] args) {  
  
        Scanner sc = new Scanner(System.in);  
  
        System.out.print("Enter the student's percentage: ");  
  
        double percentage = sc.nextDouble();  
  
  
        String result = (percentage >= 40) ? "Pass" : "Fail";  
  
        System.out.println("Result: " + result);  
  
        sc.close();  
  
    }  
  
}
```

```
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac StudentResult.java  
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java StudentResult  
Enter the student's percentage: 90  
Result: Pass  
  
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac StudentResult.java  
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java StudentResult  
Enter the student's percentage: 35  
Result: Fail
```

Q19: Write a Java program that checks whether a character is **uppercase**, **lowercase**, or **not a letter** using only the ternary operator.

Ans.: import java.util.Scanner;

```
public class CharacterCheck {  
  
    public static void main(String[] args) {  
  
        Scanner sc = new Scanner(System.in);
```

```

        System.out.print("Enter a character: ");

        char ch = sc.next().charAt(0);

        String result = (ch >= 'A' && ch <= 'Z') ? "Uppercase Letter" :

            (ch >= 'a' && ch <= 'z') ? "Lowercase Letter" :

            "Not a Letter";

        System.out.println("The character is: " + result);

        sc.close();

    }

}

```

```

D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac CharacterCheck.java
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java CharacterCheck
Enter a character: h
The character is: Lowercase Letter

D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac CharacterCheck.java
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java CharacterCheck
Enter a character: B
The character is: Uppercase Letter

```

Q20: Implement a Java program that **returns the absolute value** of a given number using the ternary operator (without using `Math.abs()`).

Ans.: import java.util.Scanner;

```

public class AbsoluteValue1 {

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

        System.out.print("Enter a number: ");

        int num = sc.nextInt();

        int absValue = (num < 0) ? -num : num;

        System.out.println("Absolute value: " + absValue);

        sc.close();

    }

}

```

}

```
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac AbsoluteValue1.java
```

```
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java AbsoluteValue1
```

```
Enter a number: 3
```

```
Absolute value: 3
```

```
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac AbsoluteValue1.java
```

```
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java AbsoluteValue1
```

```
Enter a number: -6
```

```
Absolute value: 6
```

5. Miscellaneous Operator Questions

Q21: Write a program that **increments a number without using + or ++ operators**.

Hint: Use bitwise - (~x) .

Ans.:

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

```
public class IncrementNumber {  
    public static void main(String[] args) {  
        Scanner sc = new Scanner(System.in);  
        System.out.print("Enter a number: ");  
        int num = sc.nextInt();  
        int incrementedValue = ~~num;  
  
        System.out.println("Incremented value: " + incrementedValue);  
        sc.close();  
    }  
}
```

```
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac IncrementNumber.java  
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java IncrementNumber  
Enter a number: 5  
Incremented value: 6
```

Q22: Implement a **calculator** that takes two numbers and an operator (+, -, *, /) as input and prints the result using only **switch-case**.

Ans.: import java.util.Scanner;

```
public class Calculator {  
    public static void main(String[] args) {  
        Scanner scanner = new Scanner(System.in);  
  
        System.out.print("Enter first number: ");  
        double num1 = scanner.nextDouble();  
  
        System.out.print("Enter an operator (+, -, *, /): ");  
        char operator = scanner.next().charAt(0);  
  
        System.out.print("Enter second number: ");  
        double num2 = scanner.nextDouble();  
  
        double result;  
  
        switch (operator) {  
            case '+':  
                result = num1 + num2;  
                break;  
            case '-':  
                result = num1 - num2;  
                break;  
            case '*':  
                result = num1 * num2;  
                break;
```

```

        case '/':
            if (num2 != 0)
                result = num1 / num2;
            else {
                System.out.println("Error: Division by zero");
                return;
            }
            break;
        default:
            System.out.println("Invalid operator");
            return;
    }

    System.out.println("Result: " + result);
    scanner.close();
}
}

```

```

D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java Calculator
Enter first number: 10
Enter an operator (+, -, *, /): *
Enter second number: 20
Result: 200.0

D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac Calculator.java

D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java Calculator
Enter first number: 6
Enter an operator (+, -, *, /): /
Enter second number: 8
Result: 0.75

```

Q23: Given a number, find whether it is **odd or even** using the & bitwise operator and print the result without using `if-else`.

Ans.:

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

```

public class OddEvenCheck {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter a number: ");
        int num = scanner.nextInt();

        System.out.println((num & 1) == 0 ? "Even" : "Odd");

        scanner.close();
    }
}

```



```

D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac OddEvenCheck.java

D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java OddEvenCheck
Enter a number: 5
Odd

D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac OddEvenCheck.java

D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java OddEvenCheck
Enter a number: 8
Even

```

Q24: Write a program that prints **all even numbers from 1 to 100** using only **bitwise AND (&)** and **for** loop.

Ans.:

```

public class EvenNumbers {

    public static void main(String[] args) {

        for (int i = 1; i <= 100; i++) {

            if ((i & 1) == 0) {

                System.out.println(i);

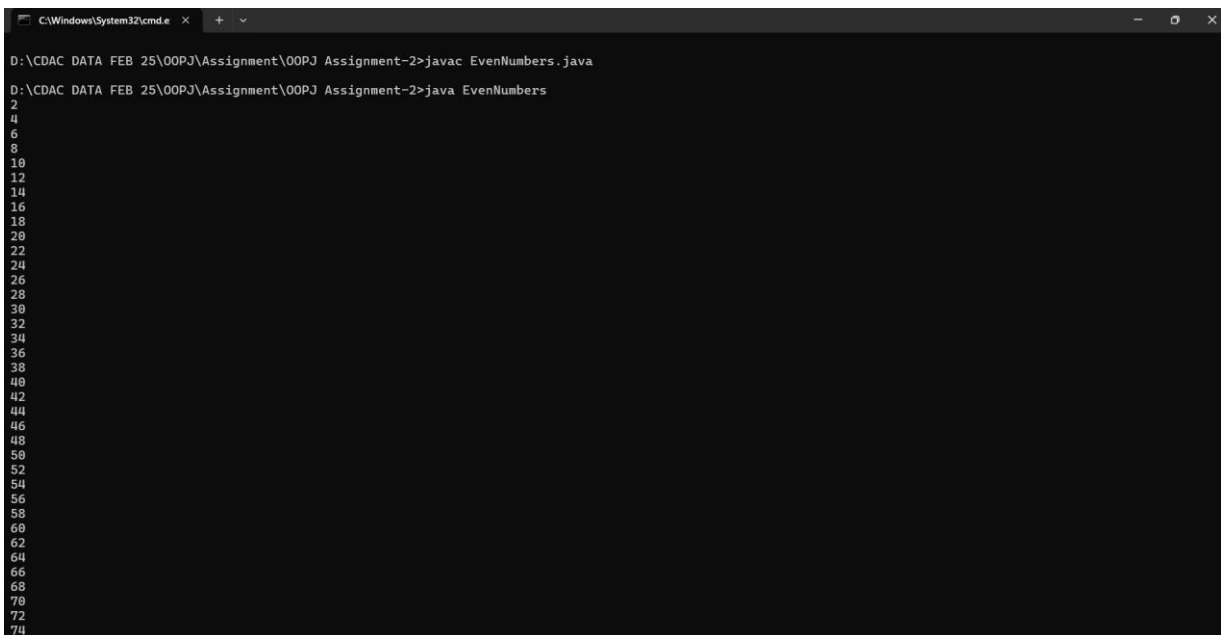
            }

        }

    }

}

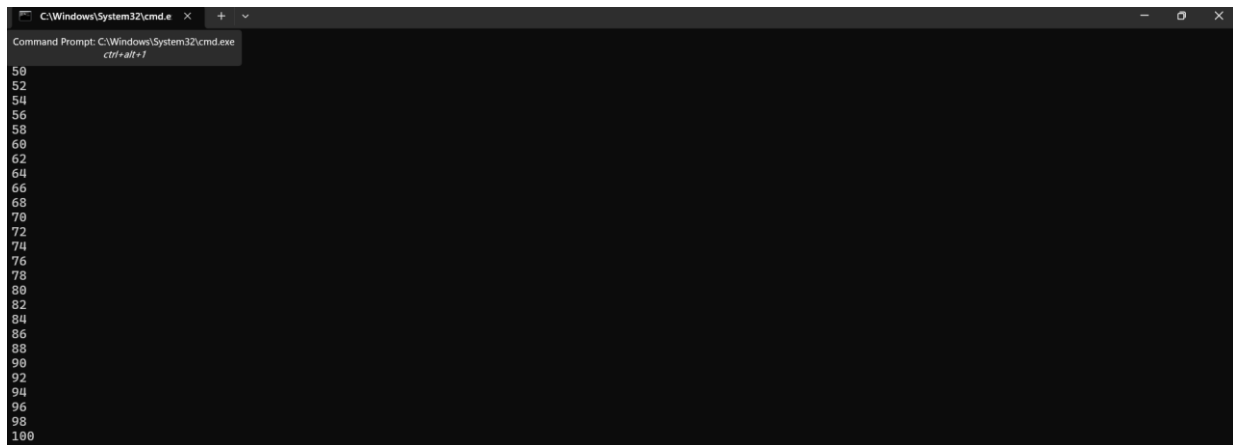
```



```

C:\Windows\System32\cmd.exe
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac EvenNumbers.java
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java EvenNumbers
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40
42
44
46
48
50
52
54
56
58
60
62
64
66
68
70
72
74

```



Q25: Implement a program that reverses an **integer number** without using string conversion (StringBuilder or toCharArray).

Hint: Use `while(n!=0) { rev = rev * 10 + n % 10; n /= 10; }`

Ans.:

```
import java.util.Scanner;

public class ReverseInteger {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter an integer: ");
        int num = scanner.nextInt();
        int rev = 0;
        while (num != 0) {
            rev = rev * 10 + num % 10;
            num /= 10;
        }

        System.out.println("Reversed number: " + rev);
        scanner.close();
    }
}
```

```
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>javac ReverseInteger.java
D:\CDAC DATA FEB 25\00PJ\Assignment\00PJ Assignment-2>java ReverseInteger
Enter an integer: 63
Reversed number: 36
```