📝 DAY 3 — I/O Statements, Branching Statements, Conditional Operator

Programs in Class: 4

Programs for Assignment: 6

★ 1. INPUT & OUTPUT STATEMENTS (I/O)

OUTPUT Statement

System.out.println("message");

→ స్క్రీన్‌పై message print అవుతుంది.

INPUT Statement

Scanner class ఉపయోగిస్తారు:

```
import java.util.Scanner;
Scanner sc = new Scanner(System.in);
int a = sc.nextInt();
String s = sc.nextLine();
float f = sc.nextFloat();
```

★ 2. BRANCHING STATEMENTS

✓ if statement

```
if (condition) {
   statements;
}
```

✓ if–else

```
if (condition) {
   statements;
} else {
   statements;
}
```

✓ nested-if

```
if (condition) {
    if (condition) {
       statements;
     }
}
```

✓ switch

```
switch(value) {
   case 1: statements; break;
   case 2: statements; break;
   default: statements;
}
```

⋆ 3. CONDITIONAL (TERNARY) OPERATOR

```
result = (condition) ? value1 : value2;
```

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⋆ ⋆ CLASS PROGRAMS (4 Programs)

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⋆ CLASS PROGRAM – 1

Program: Check whether a number is positive or negative

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Pseudo Code

Start
Take number n
If n > 0 → print Positive
Else → print Negative
End

Flow

1. User నుండి ఒక number తీసుకోవాలి

2. అది 0 కంటే పెద్దదా చెక్ చేయాలి

3. అయితే Positive, లేకపోతే Negative

Variables ఎందుకు తీసుకున్నా?

n → user ఇచ్చిన విలువ నిల్వచేయడానికి

Program

import java.util.Scanner;

class PositiveNegative {

```
    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)
            System.out.println("Positive");
        else
            System.out.println("Negative");
    }
}
```

Output

Enter a number: 5
Positive

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★ CLASS PROGRAM – 2

Program: Find greatest of two numbers

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Pseudo Code

Start
Take a, b
If a > b → a greatest
Else → b greatest
End

Flow

1. రెండు నంబర్లు తీసుకోవాలి

2. పెద్దది ఏది అనేది చెక్ చేయాలి

Variables అవసరం ఎందుకు?

a, b → రెండు values compare చేయడానికి

Program

```java
import java.util.Scanner;

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

        Scanner sc = new Scanner(System.in);

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

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

        if (a > b)
            System.out.println(a + " is Greater");
        else
            System.out.println(b + " is Greater");
    }
}
```

Output

```
Enter a: 10
Enter b: 20
20 is Greater
```

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* CLASS PROGRAM – 3

Program: Check whether student passes or fails

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Pseudo Code

Start
Take marks m
If m >= 35 → Pass
Else → Fail
End

Flow

User నుండి marks తీసుకోవాలి

Passing condition చెక్ చేయాలి

Variables ఎందుకు?

m → marks నిల్వచేయడానికి

Program

```java
import java.util.Scanner;

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

        Scanner sc = new Scanner(System.in);

        System.out.print("Enter marks: ");
        int m = sc.nextInt();

        if (m >= 35)
            System.out.println("Pass");
        else
            System.out.println("Fail");
    }
}
```

Output

Enter marks: 23
Fail

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⋆ CLASS PROGRAM – 4

Program: Calculator using switch

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Pseudo Code

Start
Take a, b
Take choice ch
Switch(ch):
  1 → add
  2 → subtract
  3 → multiply
  4 → divide
Default → invalid
End

Flow

User నుండి 2 numbers + choice తీసుకోవాలి

switch దాఖ్ఖా operation decide అవుతుంది

Variables ఎందుకు?

a, b → inputs

ch → operation selector

Program

```java
import java.util.Scanner;

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

        Scanner sc = new Scanner(System.in);

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

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

        System.out.println("1.Add 2.Sub 3.Mul 4.Div");
        int ch = sc.nextInt();

        switch (ch) {
            case 1: System.out.println("Sum = " + (a + b)); break;
            case 2: System.out.println("Sub = " + (a - b)); break;
            case 3: System.out.println("Mul = " + (a * b)); break;
            case 4: System.out.println("Div = " + (a / b)); break;
            default: System.out.println("Invalid Choice");
        }
    }
}
```

Output

```
1.Add 2.Sub 3.Mul 4.Div
3
Mul = 200
```

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⋆ ⋆ ASSIGNMENT PROGRAMS (6 Programs)

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* Assignment – 1

Program: Largest of three numbers

Pseudo Code

Start
Take a, b, c
If a>b and a>c → a largest
Else if b>c → b largest
Else → c largest
End

Program

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

        int a = 10, b = 30, c = 20;

        if (a > b && a > c)
            System.out.println(a + " is Largest");
        else if (b > c)
            System.out.println(b + " is Largest");
        else
            System.out.println(c + " is Largest");
    }
}
```

Output

30 is Largest

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* Assignment – 2

Program: Check even or odd

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

        int n = 7;

        if (n % 2 == 0)
            System.out.println("Even");
        else
            System.out.println("Odd");
    }
}
```

Output

Odd

★ Assignment – 3

Program: Check voter eligibility

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

        int age = 16;

        if (age >= 18)
            System.out.println("Eligible");
        else
            System.out.println("Not Eligible");
    }
}
```

Output

Not Eligible

★ Assignment – 4

Program: Check if number is zero, positive or negative

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

        int n = 0;

        if (n > 0)
            System.out.println("Positive");
        else if (n < 0)
            System.out.println("Negative");
        else
            System.out.println("Zero");
    }
}
```

Output

Zero

★ Assignment – 5

Program: Grade calculation

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

        int m = 87;

        if (m >= 90)
            System.out.println("A Grade");
        else if (m >= 80)
            System.out.println("B Grade");
        else if (m >= 70)
            System.out.println("C Grade");
        else
            System.out.println("D Grade");
    }
}
```

Output

B Grade

⋆ Assignment – 6

Program: Max of two numbers using conditional operator

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

        int a = 50, b = 40;

        int max = (a > b) ? a : b;

        System.out.println("Max = " + max);
    }
}
```

Output

Max = 50