C-DAC Mumbai
OOPJ Lab Assignment-5

ANSWERS

Instructions:
1. Read each scenario carefully.
2. Write a Java program to solve it using concepts like if-else, switch-case, ternary operator, and loops.
3. Provide proper input prompts and output formatting.
4. Relate the program to the scenario.

1. Greatest of Two Test Scores
Scenario: Your friend took two mock tests. Write a program to take the two test scores as input and print which test the friend scored higher in.
Input:
Enter score for Test 1: 78
Enter score for Test 2: 85
Output:
Test 2 has higher score.

```java
import java.util.Scanner;
public class GreatestTwoScores {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter score for Test 1: ");
        int t1 = sc.nextInt();
        System.out.print(s:"Enter score for Test 2: ");
        int t2 = sc.nextInt();
        if(t1 > t2) {
            System.out.println(x:"Test 1 has higher score.");
        } else if(t2 > t1) {
            System.out.println(x:"Test 2 has higher score.");
        } else {
            System.out.println(x:"Both tests have equal score.");
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac GreatestTwoScores.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java GreatestTwoScores
Enter score for Test 1: 80
Enter score for Test 2: 75
Test 1 has higher score.
```

2. Highest Salary Among Three Offers
Scenario: You have three job offers. Take the offered salaries as input and print which company is offering the highest salary.
Input:
Enter salary for Company 1: 45000
Enter salary for Company 2: 52000
Enter salary for Company 3: 50000
Output:
Company 2 offers the highest salary.

```java
import java.util.Scanner;
public class HighestSalary {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter salary for Company 1: ");
        int c1 = sc.nextInt();
        System.out.print(s:"Enter salary for Company 2: ");
        int c2 = sc.nextInt();
        System.out.print(s:"Enter salary for Company 3: ");
        int c3 = sc.nextInt();
        if(c1 >= c2 && c1 >= c3) {
            System.out.println(x:"Company 1 offers the highest salary.");
        } else if(c2 >= c1 && c2 >= c3) {
            System.out.println(x:"Company 2 offers the highest salary.");
        } else {
            System.out.println(x:"Company 3 offers the highest salary.");
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac HighestSalary.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java HighestSalary
Enter salary for Company 1: 80000
Enter salary for Company 2: 65000
Enter salary for Company 3: 92000
Company 3 offers the highest salary.
```

3. Bank Transaction Check
Scenario: You check your bank account and see a transaction amount. Print whether the transaction is a deposit (positive) or a withdrawal (negative).
Input:
Enter transaction amount: -2500
Output:
Withdrawal transaction.

```java
import java.util.Scanner;
public class BankTransaction {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter transaction amount: ");
        int amount = sc.nextInt();
        if(amount > 0) {
            System.out.println(x:"Deposit transaction.");
        } else if(amount < 0) {
            System.out.println(x:"Withdrawal transaction.");
        } else {
            System.out.println(x:"No transaction.");
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac BankTransaction.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java BankTransaction
Enter transaction amount: 150000
Deposit transaction.
PS C:\Users\baenu\Test\OOPJ Assignment 5> java BankTransaction
Enter transaction amount: -40000
Withdrawal transaction.
```

4. Even or Odd Locker Number

Scenario: Your school assigns lockers with numbers. Take locker number as input and print whether it is even or odd.

Input:

Enter locker number: 17

Output:

Odd locker number

```java
import java.util.Scanner;
public class LockerCheck {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter locker number: ");
        int locker = sc.nextInt();
        if(locker % 2 == 0) {
            System.out.println(x:"Even locker number");
        } else {
            System.out.println(x:"Odd locker number");
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac LockerCheck.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java LockerCheck
Enter locker number: 10
Even locker number
```

5. Square or Rectangle Garden
Scenario: You are designing a small garden. Take its length and breadth as input and check whether it is a square garden or rectangular.
Input:
Enter length: 12
Enter breadth: 12
Output:
Square garden

```java
import java.util.Scanner;
public class GardenCheck {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter length: ");
        int length = sc.nextInt();
        System.out.print(s:"Enter breadth: ");
        int breadth = sc.nextInt();
        if(length == breadth) {
            System.out.println(x:"Square garden");
        } else {
            System.out.println(x:"Rectangle garden");
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac GardenCheck.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java GardenCheck
Enter length: 20
Enter breadth: 10
Rectangle garden
PS C:\Users\baenu\Test\OOPJ Assignment 5> java GardenCheck
Enter length: 30
Enter breadth: 30
Square garden
```

6. Leap Year Check for a Birthday
Scenario: You want to celebrate your friend's birthday on Feb 29 if it's a leap year. Take the year as input and check if it's a leap year.
Input:
Enter year: 2024
Output:
2024 is a leap year.

```java
import java.util.Scanner;
public class EmployeeBonus {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter salary: ");
        double salary = sc.nextDouble();
        System.out.print(s:"Enter years of service: ");
        int years = sc.nextInt();
        if(years > 5) {
            double bonus = salary * 0.05;
            System.out.println("Bonus amount: " + (int)bonus);
        } else {
            System.out.println(x:"Bonus amount: 0");
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac LeapYearCheck.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java LeapYearCheck
Enter year: 2024
2024 is a leap year.
PS C:\Users\baenu\Test\OOPJ Assignment 5> java LeapYearCheck
Enter year: 2022
2022 is not a leap year.
```

7. Exam Pass or Fail

Scenario: A student gives an exam. Take marks (0–100) as input and print whether the student has passed (>=35) or failed.

Input:

Enter marks: 42

Output:

Student has passed.

```java
import java.util.Scanner;
public class ExamResult {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter marks: ");
        int marks = sc.nextInt();
        if(marks >= 35) {
            System.out.println(x:"Student has passed.");
        } else {
            System.out.println(x:"Student has failed.");
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac ExamResult.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java ExamResult
Enter marks: 40
Student has passed.
PS C:\Users\baenu\Test\OOPJ Assignment 5> java ExamResult
Enter marks: 28
Student has failed.
```

8. Shop Discount Calculation
Scenario: A shop offers 10% discount if the purchase amount exceeds 1000. Take total purchase amount as input and calculate final cost.
Input:
Enter total purchase amount: 1200
Output:
Final cost after discount: 1080

```java
import java.util.Scanner;
public class EmployeeBonus {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter salary: ");
        double salary = sc.nextDouble();
        System.out.print(s:"Enter years of service: ");
        int years = sc.nextInt();
        if(years > 5) {
            double bonus = salary * 0.05;
            System.out.println("Bonus amount: " + (int)bonus);
        } else {
            System.out.println(x:"Bonus amount: 0");
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac ShopDiscount.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java ShopDiscount
Enter total purchase amount: 2000
Final cost after discount: 1800
```

9. Employee Bonus Eligibility
Scenario: A company gives a 5% bonus to employees with more than 5 years of service. Take salary and years of service as input and print bonus amount.
Input:
Enter salary: 50000
Enter years of service: 6
Output:
Bonus amount: 2500

```java
import java.util.Scanner;
public class EmployeeBonus {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter salary: ");
        double salary = sc.nextDouble();
        System.out.print(s:"Enter years of service: ");
        int years = sc.nextInt();
        if(years > 5) {
            double bonus = salary * 0.05;
            System.out.println("Bonus amount: " + (int)bonus);
        } else {
            System.out.println(x:"Bonus amount: 0");
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac EmployeeBonus.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java EmployeeBonus
Enter salary: 80000
Enter years of service: 12
Bonus amount: 4000
```

10. Exam Attendance Eligibility

Scenario: A student can sit in exams only if attendance >=75%. Take total classes held and attended as input, print allowance.

Input:

Enter total classes held: 100

Enter classes attended: 78

Output:

Student is allowed to sit for the exam.

```java
import java.util.Scanner;
public class AttendanceCheck {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter total classes held: ");
        int total = sc.nextInt();
        System.out.print(s:"Enter classes attended: ");
        int attended = sc.nextInt();
        double percentage = (attended * 100.0) / total;
        if(percentage >= 75) {
            System.out.println(x:"Student is allowed to sit for the exam.");
        } else {
            System.out.println(x:"Student is not allowed to sit for the exam.");
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac AttendanceCheck.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java AttendanceCheck
Enter total classes held: 200
Enter classes attended: 140
Student is not allowed to sit for the exam.
PS C:\Users\baenu\Test\OOPJ Assignment 5> java AttendanceCheck
Enter total classes held: 200
Enter classes attended: 175
Student is allowed to sit for the exam.
```

11. Grade Based on Percentage

Scenario: Your friend got exam marks. Take percentage marks as input and print the grade:

- 90+ → A+
- 76–89 → A
- 66–75 → B+
- 51–65 → B
- 36–50 → C
- Below 35 → Fail

Input:
Enter percentage marks: 82
Output:
Grade: A

```java
import java.util.Scanner;
public class GradeCheck {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter percentage marks: ");
        int per = sc.nextInt();
        if(per >= 90) {
            System.out.println(x:"Grade: A+");
        } else if(per >= 76) {
            System.out.println(x:"Grade: A");
        } else if(per >= 66) {
            System.out.println(x:"Grade: B+");
        } else if(per >= 51) {
            System.out.println(x:"Grade: B");
        } else if(per >= 36) {
            System.out.println(x:"Grade: C");
        } else {
            System.out.println(x:"Grade: Fail");
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac GradeCheck.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java GradeCheck
Enter percentage marks: 88
Grade: A
PS C:\Users\baenu\Test\OOPJ Assignment 5> java GradeCheck
Enter percentage marks: 50
Grade: C
```

12. Oldest and Youngest Among Three Friends

Scenario: You and two friends want to know who is oldest and youngest. Take ages as input and print the oldest and youngest.

Input:

Enter age of Friend 1: 22

Enter age of Friend 2: 25

Enter age of Friend 3: 20

Output:

Oldest: Friend 2

Youngest: Friend 3

```java
import java.util.Scanner;
public class AgeCheck {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter age of Friend 1: ");
        int f1 = sc.nextInt();
        System.out.print(s:"Enter age of Friend 2: ");
        int f2 = sc.nextInt();
        System.out.print(s:"Enter age of Friend 3: ");
        int f3 = sc.nextInt();

        int oldest, youngest;
        if(f1 >= f2 && f1 >= f3) {
            oldest = 1;
        } else if(f2 >= f1 && f2 >= f3) {
            oldest = 2;
        } else {
            oldest = 3;
        }

        if(f1 <= f2 && f1 <= f3) {
            youngest = 1;
        } else if(f2 <= f1 && f2 <= f3) {
            youngest = 2;
        } else {
            youngest = 3;
        }

        System.out.println("Oldest: Friend " + oldest);
        System.out.println("Youngest: Friend " + youngest);
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac AgeCheck.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java AgeCheck
Enter age of Friend 1: 20
Enter age of Friend 2: 22
Enter age of Friend 3: 18
Oldest: Friend 2
Youngest: Friend 3
```

13. Exam Eligibility with Medical Cause

Scenario: A student's attendance is low but may have medical cause. Take classes held, attended, and medical cause (Y/N) as input and decide if the student can sit in exam.

Input:
Classes held: 100
Classes attended: 60
Medical cause (Y/N): Y
Output:
Student is allowed to sit for the exam.

```java
import java.util.Scanner;
public class ExamEligibility {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Classes held: ");
        int total = sc.nextInt();
        System.out.print(s:"Classes attended: ");
        int attended = sc.nextInt();
        System.out.print(s:"Medical cause (Y/N): ");
        char cause = sc.next().charAt(index:0);
        double percentage = (attended * 100.0) / total;

        if(percentage >= 75 || cause == 'Y' || cause == 'y') {
            System.out.println(x:"Student is allowed to sit for the exam.");
        } else {
            System.out.println(x:"Student is not allowed to sit for the exam.");
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac ExamEligibility.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java ExamEligibility
Classes held: 200
Classes attended: 50
Medical cause (Y/N): Y
Student is allowed to sit for the exam.
PS C:\Users\baenu\Test\OOPJ Assignment 5> java ExamEligibility
Classes held: 200
Classes attended: 50
Medical cause (Y/N): N
Student is not allowed to sit for the exam.
PS C:\Users\baenu\Test\OOPJ Assignment 5> java ExamEligibility
Classes held: 200
Classes attended: 180
Medical cause (Y/N): N
Student is allowed to sit for the exam.
```

14. Reverse a 4-Digit Number
Scenario: Take a 4-digit number and print its reverse.
Input:
Enter 4-digit number: 1234
Output:
Reversed number: 4321

```java
import java.util.Scanner;
public class ReverseNumber {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter 4-digit number: ");
        int num = sc.nextInt();
        int rev = 0, temp = num;
        while(temp > 0) {
            int d = temp % 10;
            rev = rev * 10 + d;
            temp /= 10;
        }
        System.out.println("Reversed number: " + rev);
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac ReverseNumber.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java ReverseNumber
Enter 4-digit number: 2468
Reversed number: 8642
```

15. Lucky Number Check
Scenario: A 4-digit number ABCD is lucky if A+B = C+D. Check if a number is lucky.
Input:
Enter 4-digit number: 3521
Output:
Not a lucky number

```java
import java.util.Scanner;
public class LuckyNumber {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter 4-digit number: ");
        int num = sc.nextInt();
        int a = num / 1000;
        int b = (num / 100) % 10;
        int c = (num / 10) % 10;
        int d = num % 10;

        if((a + b) == (c + d)) {
            System.out.println(x:"Lucky number");
        } else {
            System.out.println(x:"Not a lucky number");
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac LuckyNumber.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java LuckyNumber
Enter 4-digit number: 2433
Lucky number
```

16. Vowel or Consonant Checker
Scenario: Take a character input and print whether it is a vowel or consonant. Print error for invalid input.
Input:
Enter a character: e
Output:
Vowel

```java
import java.util.Scanner;
public class VowelConsonant {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter a character: ");
        char ch = sc.next().charAt(index:0);

        if((ch >= 'a' && ch <= 'z') || (ch >= 'A' && ch <= 'Z')) {
            switch(Character.toLowerCase(ch)) {
                case 'a': case 'e': case 'i': case 'o': case 'u':
                    System.out.println(x:"Vowel");
                    break;
                default:
                    System.out.println(x:"Consonant");
            }
        } else {
            System.out.println(x:"Invalid input");
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac VowelConsonant.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java VowelConsonant
Enter a character: r
Consonant
PS C:\Users\baenu\Test\OOPJ Assignment 5> java VowelConsonant
Enter a character: o
Vowel
```

17. Divisibility Check
Scenario: Check if a number is divisible by 2, 3, and 5 using nested if-else.
Input:
Enter number: 30
Output:
Divisible by 2
Divisible by 3
Divisible by 5

```java
import java.util.Scanner;
public class DivisibilityCheck {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter number: ");
        int num = sc.nextInt();

        if(num % 2 == 0) {
            System.out.println(x:"Divisible by 2");
            if(num % 3 == 0) {
                System.out.println(x:"Divisible by 3");
                if(num % 5 == 0) {
                    System.out.println(x:"Divisible by 5");
                }
            }
        } else {
            if(num % 3 == 0) {
                System.out.println(x:"Divisible by 3");
                if(num % 5 == 0) {
                    System.out.println(x:"Divisible by 5");
                }
            } else if(num % 5 == 0) {
                System.out.println(x:"Divisible by 5");
            }
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac DivisibilityCheck.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java DivisibilityCheck
Enter number: 240
Divisible by 2
Divisible by 3
Divisible by 5
```

18. Day of the Week
Scenario: Take day number (1–7) and print the day name.
Input:
Enter day number: 4
Output:
Day is Thursday

```java
import java.util.Scanner;
public class DayOfWeek {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter day number: ");
        int day = sc.nextInt();
        switch(day) {
            case 1: System.out.println(x:"Day is Monday"); break;
            case 2: System.out.println(x:"Day is Tuesday"); break;
            case 3: System.out.println(x:"Day is Wednesday"); break;
            case 4: System.out.println(x:"Day is Thursday"); break;
            case 5: System.out.println(x:"Day is Friday"); break;
            case 6: System.out.println(x:"Day is Saturday"); break;
            case 7: System.out.println(x:"Day is Sunday"); break;
            default: System.out.println(x:"Invalid day number");
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac DayOfWeek.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java DayOfWeek
Enter day number: 6
Day is Saturday
```

19. Days in a Month
Scenario: Take month number (1–12) and print number of days in that month.
Input:
Enter month number: 2
Output:
28 or 29 days

```java
import java.util.Scanner;
public class DaysInMonth {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter month number: ");
        int month = sc.nextInt();
        switch(month) {
            case 1: case 3: case 5: case 7: case 8: case 10: case 12:
                System.out.println(x:"31 days"); break;
            case 4: case 6: case 9: case 11:
                System.out.println(x:"30 days"); break;
            case 2:
                System.out.println(x:"28 or 29 days"); break;
            default:
                System.out.println(x:"Invalid month number");
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac DaysInMonth.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java DaysInMonth
Enter month number: 6
30 days
PS C:\Users\baenu\Test\OOPJ Assignment 5> java DaysInMonth
Enter month number: 2
28 or 29 days
```

20. Basic Calculator Using If-Else

Scenario: Create a calculator that takes two numbers and an operator (+, -, *, /) and prints result using nested if-else.

Input:

Enter first number: 10

Enter second number: 5

Enter operator: *

Output:

Result: 50

```java
import java.util.Scanner;
public class Calculator {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter first number: ");
        double num1 = sc.nextDouble();
        System.out.print(s:"Enter second number: ");
        double num2 = sc.nextDouble();
        System.out.print(s:"Enter operator: ");
        char op = sc.next().charAt(index:0);

        if(op == '+') {
            System.out.println("Result: " + (num1 + num2));
        } else if(op == '-') {
            System.out.println("Result: " + (num1 - num2));
        } else if(op == '*') {
            System.out.println("Result: " + (num1 * num2));
        } else if(op == '/') {
            if(num2 != 0)
                System.out.println("Result: " + (num1 / num2));
            else
                System.out.println(x:"Division by zero not allowed");
        } else {
            System.out.println(x:"Invalid operator");
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac Calculator.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java Calculator
Enter first number: 20
Enter second number: 10
Enter operator: /
Result: 2.0
```

21. Day of the Week (Ternary)
Scenario: Take an int (1–7) and print the corresponding day of the week using ternary operators.
Input:
Enter day number: 3
Output:
Day is Wednesday

```java
import java.util.Scanner;
public class DayTernary {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter day number: ")
        int d = sc.nextInt();
        String day = (d==1)?"Monday":
                     (d==2)?"Tuesday":
                     (d==3)?"Wednesday":
                     (d==4)?"Thursday":
                     (d==5)?"Friday":
                     (d==6)?"Saturday":
                     (d==7)?"Sunday":"Invalid";
        System.out.println("Day is " + day);
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac DayTernary.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java DayTernary
Enter day number: 5
Day is Friday
```

22. Month Name from Number
Scenario: Take month number (1–12) and print the month name using ternary operators or if-else.
Input:
Enter month number: 8
Output:
Month is August

```java
import java.util.Scanner;
public class DayType {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter day type (1-Workday, 2-Weekend): ");
        int type = sc.nextInt();
        if(type==1) {
            System.out.println(x:"Its workday. Time to work.");
        } else if(type==2) {
            System.out.println(x:"Its weekend. No work today.");
        } else {
            System.out.println(x:"Invalid selection");
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac MonthName.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java MonthName
Enter month number: 5
Month is May
```

23. Basic Calculator Using Switch-Case

Scenario: Create a calculator that uses switch-case for operators (+, -, *, /) and prints result.

Input:

Enter first number: 15

Enter second number: 3

Enter operator: /

Output:

Result: 5

```java
import java.util.Scanner;
public class DayType {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter day type (1-Workday, 2-Weekend): ");
        int type = sc.nextInt();
        if(type==1) {
            System.out.println(x:"Its workday. Time to work.");
        } else if(type==2) {
            System.out.println(x:"Its weekend. No work today.");
        } else {
            System.out.println(x:"Invalid selection");
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac CalculatorSwitch.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java CalculatorSwitch
Enter first number: 20
Enter second number: 10
Enter operator: +
Result: 30.0
```

24. Grade Using Switch (Ranges)
Scenario: Take marks (0–100) and print grade using switch-case grouping:
- 0–24 → F
- 25–44 → E
- 45–54 → D
- 55–69 → C
- 70–84 → B
- 85–100 → A

Input:
Enter marks: 78
Output:
Grade: B

```java
import java.util.Scanner;
public class DayType {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter day type (1-Workday, 2-Weekend): ");
        int type = sc.nextInt();
        if(type==1) {
            System.out.println(x:"Its workday. Time to work.");
        } else if(type==2) {
            System.out.println(x:"Its weekend. No work today.");
        } else {
            System.out.println(x:"Invalid selection");
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac GradeSwitch.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java GradeSwitch
Enter marks: 60
Grade: C
```

25. Message Based on Number (1–5)
Scenario: Take a number (1–5) and print a message according to the case. Useful for simple menu selection.
Input:
Enter a number: 3
Output:
You selected option 3.

```java
import java.util.Scanner;
public class DayType {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter day type (1-Workday, 2-Weekend): ");
        int type = sc.nextInt();
        if(type==1) {
            System.out.println(x:"Its workday. Time to work.");
        } else if(type==2) {
            System.out.println(x:"Its weekend. No work today.");
        } else {
            System.out.println(x:"Invalid selection");
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac OptionMessage.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java OptionMessage
Enter a number: 5
You selected option 5.
```

26. Season Based on Month

Scenario: Print season based on month number:

- Dec–Feb → Winter
- Mar–May → Summer
- Jun–Aug → Monsoon
- Sep–Nov → Autumn

Input:
Enter month number: 12
Output:
Season is Winter

```java
import java.util.Scanner;
public class SeasonCheck {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter month number: ");
        int m = sc.nextInt();
        if(m==12 || m==1 || m==2) {
            System.out.println(x:"Season is Winter");
        } else if(m>=3 && m<=5) {
            System.out.println(x:"Season is Summer");
        } else if(m>=6 && m<=8) {
            System.out.println(x:"Season is Monsoon");
        } else if(m>=9 && m<=11) {
            System.out.println(x:"Season is Autumn");
        } else {
            System.out.println(x:"Invalid month");
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac SeasonCheck.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java SeasonCheck
Enter month number: 8
Season is Monsoon
```

27. Print Message Based on Character (A–E)
Scenario: Take a character (A–E) and print a specific message using switch-case.
Input:
Enter a character: B
Output:
You selected option B.

```java
import java.util.Scanner;
public class CharOption {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter a character: ");
        char c = sc.next().charAt(index:0);
        switch(c) {
            case 'A': System.out.println(x:"You selected option A."); break;
            case 'B': System.out.println(x:"You selected option B."); break;
            case 'C': System.out.println(x:"You selected option C."); break;
            case 'D': System.out.println(x:"You selected option D."); break;
            case 'E': System.out.println(x:"You selected option E."); break;
            default: System.out.println(x:"Invalid option");
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac CharOption.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java CharOption
Enter a character: D
You selected option D.
```

28. Traffic Signal Instruction
Scenario: Take traffic signal color as input (Red, Green, Yellow) and print appropriate instruction.
Input:
Enter traffic light color: Green
Output:
Go

```java
import java.util.Scanner;
public class TrafficSignal {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter traffic light color: ");
        String color = sc.next();
        switch(color.toLowerCase()) {
            case "red": System.out.println(x:"Stop"); break;
            case "yellow": System.out.println(x:"Wait"); break;
            case "green": System.out.println(x:"Go"); break;
            default: System.out.println(x:"Invalid color");
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac TrafficSignal.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java TrafficSignal
Enter traffic light color: Yellow
Wait
```

29. Day Type Selection

Scenario: Take user input for day type (1–Workday, 2–Weekend) and print working status.

Input:

Enter day type (1–Workday, 2–Weekend): 2

Output:

It’s weekend. No work today.

```java
import java.util.Scanner;
public class DayType {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter day type (1-Workday, 2-Weekend): ");
        int type = sc.nextInt();
        if(type==1) {
            System.out.println(x:"Its workday. Time to work.");
        } else if(type==2) {
            System.out.println(x:"Its weekend. No work today.");
        } else {
            System.out.println(x:"Invalid selection");
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac DayType.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java DayType
Enter day type (1-Workday, 2-Weekend): 1
Its workday. Time to work.
```

30. Menu-Based Simple Arithmetic Operations
Scenario: Implement a menu-based program that asks user to select operation (Addition, Subtraction, Multiplication, Division) and prints result.
Input:
Select operation (1-Addition, 2-Subtraction): 1
Enter first number: 20
Enter second number: 30
Output:
Result: 50

```java
import java.util.Scanner;
public class MenuCalculator {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println(x:"Select operation:");
        System.out.println(x:"1-Addition");
        System.out.println(x:"2-Subtraction");
        System.out.println(x:"3-Multiplication");
        System.out.println(x:"4-Division");
        int choice = sc.nextInt();

        System.out.print(s:"Enter first number: ");
        double n1 = sc.nextDouble();
        System.out.print(s:"Enter second number: ");
        double n2 = sc.nextDouble();

        switch(choice) {
            case 1: System.out.println("Result: " + (n1+n2)); break;
            case 2: System.out.println("Result: " + (n1-n2)); break;
            case 3: System.out.println("Result: " + (n1*n2)); break;
            case 4:
                if(n2!=0) System.out.println("Result: " + (n1/n2));
                else System.out.println(x:"Division by zero not allowed");
                break;
            default: System.out.println(x:"Invalid operation");
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac MenuCalculator.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java MenuCalculator
Select operation:
1-Addition
2-Subtraction
3-Multiplication
4-Division
3
Enter first number: 5
Enter second number: 7
Result: 35.0
```

31. Greatest of Two Numbers (Ternary)
Scenario: You want to quickly compare two numbers. Take two numbers as input and print the greatest using a ternary operator.
Input:
Enter first number: 45
Enter second number: 30
Output:
Greatest number: 45

```java
import java.util.Scanner;
public class GreatestTernary {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter first number: ");
        int a = sc.nextInt();
        System.out.print(s:"Enter second number: ");
        int b = sc.nextInt();
        int greatest = (a > b) ? a : b;
        System.out.println("Greatest number: " + greatest);
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac GreatestTernary.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java GreatestTernary
Enter first number: 10
Enter second number: 20
Greatest number: 20
```

32. Positive, Negative, or Zero (Ternary)
Scenario: Take a number and determine if it is positive, negative, or zero using ternary operator.
Input:
Enter a number: -12
Output:
Number is Negative

```java
import java.util.Scanner;
public class PosNegZero {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter a number: ");
        int n = sc.nextInt();
        String result = (n > 0) ? "Positive" : (n < 0 ? "Negative" : "Zero");
        System.out.println("Number is " + result);
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac PosNegZero.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java PosNegZero
Enter a number: -20
Number is Negative
PS C:\Users\baenu\Test\OOPJ Assignment 5> java PosNegZero
Enter a number: 0
Number is Zero
PS C:\Users\baenu\Test\OOPJ Assignment 5> java PosNegZero
Enter a number: 30
Number is Positive
```

33. Even or Odd (Ternary)
Scenario: Take a number and check if it is even or odd using ternary operator.
Input:
Enter a number: 17
Output:
Number is Odd

```java
import java.util.Scanner;
public class EvenOddTernary {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter a number: ");
        int n = sc.nextInt();
        String result = (n % 2 == 0) ? "Even" : "Odd";
        System.out.println("Number is " + result);
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac EvenOddTernary.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java EvenOddTernary
Enter a number: 8
Number is Even
```

34. Voting Eligibility (Ternary)
Scenario: Ask user age and print “Eligible” or “Not Eligible” to vote using ternary operator.
Input:
Enter age: 20
Output:
Eligible to vote

```java
import java.util.Scanner;
public class VotingTernary {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter age: ");
        int age = sc.nextInt();
        String result = (age >= 18) ? "Eligible to vote" : "Not Eligible to vote";
        System.out.println(result);
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac VotingTernary.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java VotingTernary
Enter age: 16
Not Eligible to vote
```

35. Pass/Fail Check (Ternary)
Scenario: Take marks as input and print Pass or Fail using ternary operator (Pass if >=35).
Input:
Enter marks: 28
Output:
Fail

```java
import java.util.Scanner;
public class PassFailTernary {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter marks: ");
        int marks = sc.nextInt();
        String result = (marks >= 35) ? "Pass" : "Fail";
        System.out.println(result);
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac PassFailTernary.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java PassFailTernary
Enter marks: 30
Fail
PS C:\Users\baenu\Test\OOPJ Assignment 5> java PassFailTernary
Enter marks: 60
Pass
```

36. Smallest of Three Numbers (Nested Ternary)
Scenario: Take three numbers as input and print the smallest using nested ternary operator.
Input:
Enter numbers: 12, 8, 19
Output:
Smallest number: 8

```java
import java.util.Scanner;
public class SmallestTernary {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter first number: ");
        int a = sc.nextInt();
        System.out.print(s:"Enter second number: ");
        int b = sc.nextInt();
        System.out.print(s:"Enter third number: ");
        int c = sc.nextInt();
        int smallest = (a < b) ? (a < c ? a : c) : (b < c ? b : c);
        System.out.println("Smallest number: " + smallest);
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac SmallestTernary.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java SmallestTernary
Enter first number: 10
Enter second number: 20
Enter third number: 15
Smallest number: 10
```

37. Leap Year Check (Ternary)
Scenario: Take a year as input and check if it is a leap year using ternary operator.
Input:
Enter year: 2024
Output:
Leap Year

```java
import java.util.Scanner;
public class LeapYearTernary {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter year: ");
        int year = sc.nextInt();
        String result = ((year % 400 == 0) || (year % 4 == 0 && year % 100 != 0)) ? "Leap Year" : "Not a Leap Year";
        System.out.println(result);
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac LeapYearTernary.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java LeapYearTernary
Enter year: 2000
Leap Year
```

38. Vowel or Consonant (Ternary)
Scenario: Take a character and check if it is a vowel or consonant using ternary operator.
Input:
Enter character: i
Output:
Vowel

```java
import java.util.Scanner;
public class VowelConsonantTernary {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter character: ");
        char ch = sc.next().charAt(index:0);
        String result = (ch=='a'||ch=='e'||ch=='i'||ch=='o'||ch=='u'||
                         ch=='A'||ch=='E'||ch=='I'||ch=='O'||ch=='U')
                        ? "Vowel" : "Consonant";
        System.out.println(result);
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac VowelConsonantTernary.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java VowelConsonantTernary
Enter character: u
Vowel
PS C:\Users\baenu\Test\OOPJ Assignment 5> java VowelConsonantTernary
Enter character: p
Consonant
```

39. Bonus Eligibility (Ternary)
Scenario: A company gives 5% bonus if years of service > 5. Take salary and years of service, print bonus eligibility using ternary.
Input:
Enter salary: 50000
Enter years of service: 6
Output:
Bonus: 2500

```java
import java.util.Scanner;
public class BonusTernary {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter salary: ");
        double salary = sc.nextDouble();
        System.out.print(s:"Enter years of service: ");
        int years = sc.nextInt();
        double bonus = (years > 5) ? salary * 0.05 : 0;
        System.out.println("Bonus: " + (int)bonus);
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac BonusTernary.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java BonusTernary
Enter salary: 65000
Enter years of service: 8
Bonus: 3250
```

40. Discount on Purchase (Ternary)
Scenario: A shop gives 10% discount if purchase amount > 1000. Take purchase amount and print total cost using ternary.
Input:
Enter purchase amount: 1200
Output:
Total cost after discount: 1080

```java
import java.util.Scanner;
public class DiscountTernary {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter purchase amount: ");
        double amt = sc.nextDouble();
        double finalAmt = (amt > 1000) ? amt * 0.9 : amt;
        System.out.println("Total cost after discount: " + (int)finalAmt);
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac DiscountTernary.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java DiscountTernary
Enter purchase amount: 10000
Total cost after discount: 9000
```

41. Check Armstrong Number (3-Digit)
Scenario: Take a 3-digit number and check if it is an Armstrong number (sum of cubes of digits = number).
Input:
Enter number: 153
Output:
153 is an Armstrong number

```java
import java.util.Scanner;
public class ArmstrongCheck {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter number: ");
        int num = sc.nextInt();
        int temp = num, sum = 0;
        while(temp > 0) {
            int d = temp % 10;
            sum += d*d*d;
            temp /= 10;
        }
        if(sum == num) {
            System.out.println(num + " is an Armstrong number");
        } else {
            System.out.println(num + " is not an Armstrong number");
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac ArmstrongCheck.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java ArmstrongCheck
Enter number: 153
153 is an Armstrong number
```

42. Armstrong Numbers Between 100–500
Scenario: Print all Armstrong numbers between 100 and 500.
Output:
153
370
371
407

```java
public class ArmstrongRange {
    Run | Debug
    public static void main(String[] args) {
        for(int num=100; num<=500; num++) {
            int temp = num, sum = 0;
            while(temp > 0) {
                int d = temp % 10;
                sum += d*d*d;
                temp /= 10;
            }
            if(sum == num) {
                System.out.println(num);
            }
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac ArmstrongRange.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java ArmstrongRange
153
370
371
407
```

43. Sum of Digits of a Number
Scenario: Take a number as input and print the sum of its digits.
Input:
Enter number: 482
Output:
Sum of digits: 14

```java
import java.util.Scanner;
public class SumDigits {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter number: ");
        int num = sc.nextInt();
        int sum = 0;
        while(num > 0) {
            sum += num % 10;
            num /= 10;
        }
        System.out.println("Sum of digits: " + sum);
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac SumDigits.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java SumDigits
Enter number: 2831
Sum of digits: 14
```

44. Reverse 4-Digit Number and Palindrome Check
Scenario: Take a 4-digit number, reverse it, and check if it is a palindrome.
Input:
Enter 4-digit number: 1221
Output:
Reversed number: 1221
Palindrome: Yes

```java
import java.util.Scanner;
public class ReversePalindrome {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter 4-digit number: ");
        int num = sc.nextInt();
        int temp = num, rev = 0;
        while(temp > 0) {
            rev = rev * 10 + temp % 10;
            temp /= 10;
        }
        System.out.println("Reversed number: " + rev);
        System.out.println("Palindrome: " + (rev == num ? "Yes" : "No"));
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac ReversePalindrome.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java ReversePalindrome
Enter 4-digit number: 2442
Reversed number: 2442
Palindrome: Yes
PS C:\Users\baenu\Test\OOPJ Assignment 5> java ReversePalindrome
Enter 4-digit number: 1234
Reversed number: 4321
Palindrome: No
```

45. Sort Three Numbers in Ascending Order
Scenario: Take three numbers and print them in ascending order.
Input:
Enter numbers: 45, 12, 78
Output:
Ascending order: 12, 45, 78

```java
import java.util.Scanner;
public class SortThree {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter first number: ");
        int a = sc.nextInt();
        System.out.print(s:"Enter second number: ");
        int b = sc.nextInt();
        System.out.print(s:"Enter third number: ");
        int c = sc.nextInt();

        int temp;
        if(a > b) { temp = a; a = b; b = temp; }
        if(a > c) { temp = a; a = c; c = temp; }
        if(b > c) { temp = b; b = c; c = temp; }

        System.out.println("Ascending order: " + a + ", " + b + ", " + c);
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac SortThree.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java SortThree
Enter first number: 50
Enter second number: 15
Enter third number: 95
Ascending order: 15, 50, 95
```

46. Character Type Checker
Scenario: Take a character as input and print whether it is an alphabet, digit, or special character.
Input:
Enter character: %
Output:
Special Character

```java
import java.util.Scanner;
public class CharType {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter character: ");
        char ch = sc.next().charAt(index:0);

        if(Character.isLetter(ch)) {
            System.out.println(x:"Alphabet");
        } else if(Character.isDigit(ch)) {
            System.out.println(x:"Digit");
        } else {
            System.out.println(x:"Special Character");
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac CharType.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java CharType
Enter character: t
Alphabet
PS C:\Users\baenu\Test\OOPJ Assignment 5> java CharType
Enter character: -
Special Character
PS C:\Users\baenu\Test\OOPJ Assignment 5> java CharType
Enter character: 6
Digit
```

47. Even/Odd Status of Two Numbers

Scenario: Take two numbers and print if both are even, both odd, or mixed.

Input:

Enter first number: 12

Enter second number: 17

Output:

Numbers are mixed (one even, one odd)

```java
import java.util.Scanner;
public class EvenOddTwo {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter first number: ");
        int a = sc.nextInt();
        System.out.print(s:"Enter second number: ");
        int b = sc.nextInt();

        if(a % 2 == 0 && b % 2 == 0) {
            System.out.println(x:"Both numbers are even");
        } else if(a % 2 != 0 && b % 2 != 0) {
            System.out.println(x:"Both numbers are odd");
        } else {
            System.out.println(x:"Numbers are mixed (one even, one odd)");
        }
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac EvenOddTwo.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java EvenOddTwo
Enter first number: 10
Enter second number: 15
Numbers are mixed (one even, one odd)
PS C:\Users\baenu\Test\OOPJ Assignment 5> java EvenOddTwo
Enter first number: 8
Enter second number: 8
Both numbers are even
PS C:\Users\baenu\Test\OOPJ Assignment 5> java EvenOddTwo
Enter first number: 3
Enter second number: 15
Both numbers are odd
```

48. Grade with Plus/Minus

Scenario: Take marks and print grade with plus/minus (e.g., 85 → A, 78 → A−).

Input:

Enter marks: 78

Output:

Grade: A−

```java
import java.util.Scanner;
public class GradePlusMinus {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter marks: ");
        int marks = sc.nextInt();
        String grade;
        if(marks >= 85) grade = "A";
        else if(marks >= 70) grade = "B";
        else if(marks >= 55) grade = "C";
        else if(marks >= 40) grade = "D";
        else grade = "F";

        if(marks % 10 >= 7 && marks < 100 && marks >= 40) {
            grade += "+";
        } else if(marks % 10 <= 3 && marks >= 40) {
            grade += "-";
        }

        System.out.println("Grade: " + grade);
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac GradePlusMinus.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java GradePlusMinus
Enter marks: 85
Grade: A
```

49. Days in Month Considering Leap Year
Scenario: Take a year and month number, print days in that month considering leap years.
Input:
Enter year: 2024
Enter month number: 2
Output:
29 days

```java
import java.util.Scanner;
public class DaysInMonthLeap {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter year: ");
        int year = sc.nextInt();
        System.out.print("Enter month number: ");
        int month = sc.nextInt();

        int days;
        switch(month) {
            case 1: case 3: case 5: case 7: case 8: case 10: case 12:
                days = 31; break;
            case 4: case 6: case 9: case 11:
                days = 30; break;
            case 2:
                days = ((year % 400 == 0) || (year % 4 == 0 && year % 100 != 0)) ? 29 : 28;
                break;
            default: days = -1;
        }

        if(days == -1) System.out.println("Invalid month number");
        else System.out.println(days + " days");
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac DaysInMonthLeap.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java DaysInMonthLeap
Enter year: 2016
Enter month number: 2
29 days
PS C:\Users\baenu\Test\OOPJ Assignment 5> java DaysInMonthLeap
Enter year: 2018
Enter month number: 2
28 days
```

50. Divisibility by 2, 3, 5 with Custom Messages
Scenario: Take a number and check divisibility by 2, 3, and 5, printing custom messages for each.
Input:
Enter number: 30
Output:
Divisible by 2
Divisible by 3
Divisible by 5

```java
import java.util.Scanner;
public class DivisibilityCustom {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print(s:"Enter number: ");
        int num = sc.nextInt();

        if(num % 2 == 0) System.out.println(x:"Divisible by 2");
        else System.out.println(x:"Not divisible by 2");

        if(num % 3 == 0) System.out.println(x:"Divisible by 3");
        else System.out.println(x:"Not divisible by 3");

        if(num % 5 == 0) System.out.println(x:"Divisible by 5");
        else System.out.println(x:"Not divisible by 5");
    }
}
```

```
PS C:\Users\baenu\Test\OOPJ Assignment 5> javac DivisibilityCustom.java
PS C:\Users\baenu\Test\OOPJ Assignment 5> java DivisibilityCustom
Enter number: 60
Divisible by 2
Divisible by 3
Divisible by 5
PS C:\Users\baenu\Test\OOPJ Assignment 5> java DivisibilityCustom
Enter number: 40
Divisible by 2
Not divisible by 3
Divisible by 5
```