**C-DAC Mumbai**

**OOPJ Lab Assignment**

**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.   
  
Answer:-**

**import java.util.Scanner;**

**public class GreatestScore {**

**public static int greatscore(int test1, int test2) {**

**int result = test1> test2 ? test1 : test2;**

**return result;**

**}**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.println("Enter test 1 score: ");**

**int score1 = sc.nextInt();**

**System.out.println("Enter test 2 score: ");**

**int score2 = sc.nextInt();**

**System.out.println();**

**int result= greatscore(score1, score2);**

**if( result == score1) { System.out.println("Test 1 has higher"); }**

**else { System.out.println("Test 2 has higher"); }**

**}**

**}**

**OUtPUT:--**

**java GreatestScore**

**Enter test 1 score:75**

**Enter test 2 score:**

**86**

**Test 2 has higher**

**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.**

**Answer:-  
import java.util.Scanner;**

**public class HighestSalary {**

**public static int highestSalary(int sal1, int sal2, int sal3) {**

**int result = 0;**

**if( sal1 > sal2 && sal2 > sal3) {**

**System.out.println("Company 1 offers the highest salary.");**

**}**

**else if ( sal2> sal3 && sal2 > sal1){**

**System.out.println("Company 2 offers the highest salary.");**

**}**

**else {**

**System.out.println("Company 3 offers the highest salary.");**

**}**

**return result;**

**}**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.println("Enter salary for Company 1: ");**

**int sal1 = sc.nextInt();**

**System.out.println("Enter salary for Company 2: ");**

**int sal2 = sc.nextInt();**

**System.out.println();**

**System.out.println("Enter salary for Company 3: ");**

**int sal3 = sc.nextInt();**

**System.out.println();**

**highestSalary(sal1, sal2,sal3);**

**}**

**}**

**/\***

**OUtPUT:--**

**java HighestSalary**

**Enter salary for Company 1:**

**45000**

**Enter salary for Company 2:**

**52000**

**Enter salary for Company 3:**

**50000**

**Company 2 offers the highest salary.**

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**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  
  
Answer:-  
import java.util.Scanner;**

**public class Transaction {**

**public static void withdraw (int amount) {**

**System.out.println("Withdrawal transaction");**

**}**

**public static void deposite (int amount) {**

**System.out.println("Deposited transaction :");**

**}**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.println("Enter transaction amount: ");**

**int amount = sc.nextInt();**

**System.out.println("What do you want to Withdraw or Deposit: ");**

**String ope=sc.next();**

**System.out.println();**

**switch (ope) {**

**case "Withdraw":**

**withdraw(amount);**

**break;**

**case "Deposite":**

**deposite(amount);**

**break;**

**default :**

**System.out.println("no transaction :");**

**break;**

**}**

**}**

**}**

**/\***

**OUtPUT:--**

**Enter transaction amount:**

**2500**

**What do you want to Withdraw or Deposit:**

**Withdraw**

**Withdrawal transactionEnter salary for Company 1:**

**45000**

**Enter salary for Company 2:**

**52000**

**Enter salary for Company 3:**

**50000**

**Company 2 offers the highest salary.**

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**4. Even or Odd Locker Number Scenario:**

**Your school assigns lockers with numbers.**

**Take the locker number as input and print whether it is even or odd.**

**Input:**

**Enter locker number: 17**

**Output:**

**Odd locker number**

**Answer:-**

**import java.util.Scanner;**

**public class LockerNumber {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.println("Enter locker number: ");**

**int locker = sc.nextInt();**

**if(locker % 2 == 0){**

**System.out.println("Even locker number: ");**

**}**

**else {**

**System.out.println("odd locker number: ");**

**}**

**}**

**}**

**/\***

**OUtPUT:--**

**java LockerNumber**

**Enter locker number:**

**17**

**odd locker number:**

**\*/**

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**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  
  
Answer:**

**import java.util.Scanner;**

**public class GardenShape {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter length: ");**

**int length = sc.nextInt();**

**System.out.print("Enter breadth: ");**

**int breadth = sc.nextInt();**

**if (length == breadth) {**

**System.out.println("Square garden");**

**} else {**

**System.out.println("Rectangular garden");**

**}**

**}**

**}**

**/\***

**OUtPUT:--**

**java GardenShape**

**Enter length: 12**

**Enter breadth: 12**

**Square garden**

**\*/**

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class LeapYearChec {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter year: ");**

**int year = sc.nextInt();**

**if ((year % 400 == 0) || (year % 4 == 0 && year % 100 != 0)) {**

**System.out.println(year + " is a leap year");**

**} else {**

**System.out.println(year + " is not a leap year");**

**}**

**}**

**}**

**/\***

**OUtPUT:--**

**java LeapYearCheck**

**Enter year: 2024**

**2024 is a leap year**

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**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  
  
Answer:-**

**import java.util.Scanner;**

**public class ExamResult {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter marks: ");**

**int marks = sc.nextInt();**

**if (marks >= 35) {**

**System.out.println("Student has passed");**

**}**

**else {**

**System.out.println("Student has failed");**

**}**

**}**

**}**

**/\***

**OUtPUT:--**

**java ExamResult**

**Enter marks: 42**

**Student has passed**

**\*/**

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class ShopDiscount {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter total purchase amount: ");**

**double amount = sc.nextDouble();**

**if (amount > 1000) {**

**amount = amount - (amount \* 0.10);**

**}**

**System.out.println("Final cost after discount: " + amount);**

**}**

**}**

**/\***

**OUTPUT**

**java ShopDiscount**

**Enter total purchase amount: 1200**

**Final cost after discount: 1080.0**

**\*/**

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**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   
  
Answer:-**

**import java.util.Scanner;**

**public class SalaryBonus {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter total purchase amount: ");**

**double salary = sc.nextDouble();**

**System.out.print("Enter years of service: ");**

**int year = sc.nextInt();**

**double bonus = 0 ;**

**if (year > 5) {**

**bonus = salary \* 5 / 100;**

**}**

**System.out.println("Final cost after discount: " + bonus);**

**}**

**}**

**/\***

**OUTPUT**

**java SalaryBonus**

**Enter total purchase amount: 50000**

**Enter years of service: 6**

**Final cost after discount: 2500.0**

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**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.   
  
Answer:-**

**import java.util.Scanner;**

**public class ExamAttendance {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter total classes held: ");**

**int total = sc.nextInt();**

**System.out.print("Enter classes attended: ");**

**int attended = sc.nextInt();**

**double percentage = (attended \* 100.0) / total;**

**if (percentage >= 75) {**

**System.out.println("Student is allowed to sit for the exam.");**

**} else {**

**System.out.println("Student is not allowed to sit for the exam.");**

**}**

**}**

**}**

**/\***

**OUTPUT**

**java ExamAttendance**

**Enter total classes held: 100**

**Enter classes attended: 78**

**Student is allowed to sit for the exam.**

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**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  
  
Answer:-**

**import java.util.Scanner;**

**public class GradeCalculator {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter percentage marks: ");**

**int percentage = sc.nextInt();**

**String grade;**

**if (percentage >= 90)**

**grade = "A+";**

**else if (percentage >= 76)**

**grade = "A";**

**else if (percentage >= 66)**

**grade = "B+";**

**else if (percentage >= 51)**

**grade = "B";**

**else if (percentage >= 36)**

**grade = "C";**

**else**

**grade = "Fail";**

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

**}**

**}**

**/\***

**OUTPUT**

**java GradeCalculator**

**Enter percentage marks: 83**

**Grade: A.**

**\*/**

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class OldestYoungest {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter age of Friend 1: ");**

**int f1 = sc.nextInt();**

**System.out.print("Enter age of Friend 2: ");**

**int f2 = sc.nextInt();**

**System.out.print("Enter age of Friend 3: ");**

**int f3 = sc.nextInt();**

**int oldest, youngest;**

**String oldName, youngName;**

**if (f1 >= f2 && f1 >= f3) {**

**oldest = f1;**

**oldName = "Friend 1";**

**} else if (f2 >= f1 && f2 >= f3) {**

**oldest = f2;**

**oldName = "Friend 2";**

**} else {**

**oldest = f3;**

**oldName = "Friend 3";**

**}**

**if (f1 <= f2 && f1 <= f3) {**

**youngest = f1;**

**youngName = "Friend 1";**

**} else if (f2 <= f1 && f2 <= f3) {**

**youngest = f2;**

**youngName = "Friend 2";**

**} else {**

**youngest = f3;**

**youngName = "Friend 3";**

**}**

**System.out.println("Oldest: " + oldName);**

**System.out.println("Youngest: " + youngName);**

**}**

**}**

**/\***

**OUTPUT**

**java OldestYoungest**

**Enter age of Friend 1: 22**

**Enter age of Friend 2: 25**

**Enter age of Friend 3: 20**

**Oldest: Friend 2**

**Youngest: Friend 3**

**\*/**

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**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 due to medical cause**

**Answer:-**

**import java.util.Scanner;**

**public class ExamEligibility {**

**public static void checkEligibility(int held, int attended, char medical) {**

**double attendance = (attended \* 100.0) / held;**

**if (attendance >= 75) {**

**System.out.println("Student is allowed to sit for the exam");**

**} else if (medical == 'Y' || medical == 'y') {**

**System.out.println("Student is allowed to sit for the exam due to medical cause");**

**} else {**

**System.out.println("Student is NOT allowed to sit for the exam");**

**}**

**}**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Classes held: ");**

**int held = sc.nextInt();**

**System.out.print("Classes attended: ");**

**int attended = sc.nextInt();**

**System.out.print("Medical cause (Y/N): ");**

**char medical = sc.next().charAt(0);**

**checkEligibility(held, attended, medical);**

**}**

**}**

**/\***

**OUTPUT**

**Classes held: 100**

**Classes attended: 60**

**Medical cause (Y/N): Y**

**Student is allowed to sit for the exam due to medical cause**

**\*/**

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class ReverseNumber {**

**public static void reverseNumber(int num) {**

**int reversed = 0;**

**while (num > 0) {**

**int digit = num % 10;**

**reversed = reversed \* 10 + digit;**

**num = num / 10;**

**}**

**System.out.println("Reversed number: " + reversed);**

**}**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter 4-digit number: ");**

**int num = sc.nextInt();**

**reverseNumber(num);**

**}**

**}**

**/\***

**OUTPUT**

**Enter 4-digit number: 1234**

**Reversed number: 4321**

**\*/**

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class LuckyNumberCheck {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter 4-digit number: ");**

**int num = sc.nextInt();**

**int d1 = num / 1000;**

**int d2 = (num / 100) % 10;**

**int d3 = (num / 10) % 10;**

**int d4 = num % 10;**

**if ((d1 + d2) == (d3 + d4)) {**

**System.out.println("Lucky number");**

**} else {**

**System.out.println("Not a lucky number");**

**}**

**}**

**}**

**/\***

**OUTPUT**

**Enter 4-digit number: 3521**

**Not a lucky number**

**\*/**

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class VowelConsonantChecker {**

**public static void checkVowelOrConsonant(char ch) {**

**if (Character.isLetter(ch)) {**

**ch = Character.toLowerCase(ch);**

**if (ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u') {**

**System.out.println("Vowel");**

**} else {**

**System.out.println("Consonant");**

**}**

**} else {**

**System.out.println("Invalid input");**

**}**

**}**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

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

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

**checkVowelOrConsonant(ch);**

**}**

**}**

**/\***

**OUTPUT**

**Enter a character: e**

**Vowel**

**\*/**

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class DivisibilityCheckNested {**

**public static void checkDivisibility(int num) {**

**if (num % 2 == 0) {**

**System.out.println("Divisible by 2");**

**if (num % 3 == 0) {**

**System.out.println("Divisible by 3");**

**if (num % 5 == 0) {**

**System.out.println("Divisible by 5");**

**}**

**}**

**} else {**

**System.out.println("Not divisible by 2, 3, and 5 together");**

**}**

**}**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

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

**int num = sc.nextInt();**

**checkDivisibility(num);**

**}**

**}**

**/\***

**OUTPUT**

**Enter number: 30**

**Divisible by 2**

**Divisible by 3**

**Divisible by 5**

**\*/**

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class DayOfWeek {**

**public static void printDay(int day) {**

**if (day == 1) {**

**System.out.println("Day is Monday");**

**} else if (day == 2) {**

**System.out.println("Day is Tuesday");**

**} else if (day == 3) {**

**System.out.println("Day is Wednesday");**

**} else if (day == 4) {**

**System.out.println("Day is Thursday");**

**} else if (day == 5) {**

**System.out.println("Day is Friday");**

**} else if (day == 6) {**

**System.out.println("Day is Saturday");**

**} else if (day == 7) {**

**System.out.println("Day is Sunday");**

**} else {**

**System.out.println("Invalid day number!");**

**}**

**}**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter day number (1-7): ");**

**int day = sc.nextInt();**

**printDay(day);**

**}**

**}**

**/\***

**OUTPUT**

**Enter day number (1-7): 4**

**Day is Thursday**

**\*/**

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class DaysInMonthBasic {**

**public static void printDays(int month) {**

**if (month == 1 || month == 3 || month == 5 || month == 7 || month == 8 || month == 10 || month == 12) {**

**System.out.println("31 days");**

**} else if (month == 4 || month == 6 || month == 9 || month == 11) {**

**System.out.println("30 days");**

**} else if (month == 2) {**

**System.out.println("28 or 29 days");**

**} else {**

**System.out.println("Invalid month number!");**

**}**

**}**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter month number (1-12): ");**

**int month = sc.nextInt();**

**printDays(month);**

**}**

**}**

**/\***

**OUTPUT**

**Enter month number (1-12): 2**

**28 or 29 days**

**\*/**

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class BasicCalculator {**

**public static void calculate(double num1, double num2, char operator) {**

**if (operator == '+') {**

**System.out.println("Result: " + (num1 + num2));**

**} else if (operator == '-') {**

**System.out.println("Result: " + (num1 - num2));**

**} else if (operator == '\*') {**

**System.out.println("Result: " + (num1 \* num2));**

**} else if (operator == '/') {**

**if (num2 != 0) {**

**System.out.println("Result: " + (num1 / num2));**

**} else {**

**System.out.println("Error: Division by zero is not allowed.");**

**}**

**} else {**

**System.out.println("Invalid operator!");**

**}**

**}**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter first number: ");**

**double num1 = sc.nextDouble();**

**System.out.print("Enter second number: ");**

**double num2 = sc.nextDouble();**

**System.out.print("Enter operator (+, -, \*, /): ");**

**char operator = sc.next().charAt(0);**

**calculate(num1, num2, operator);**

**}**

**}**

**/\***

**OUTPUT**

**Enter first number: 10**

**Enter second number: 5**

**Enter operator (+, -, \*, /): \***

**Result: 50.0**

**\*/**

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class DayOfWeekTernary {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter day number (1-7): ");**

**int day = sc.nextInt();**

**String dayName = (day == 1) ? "Monday" :**

**(day == 2) ? "Tuesday" :**

**(day == 3) ? "Wednesday" :**

**(day == 4) ? "Thursday" :**

**(day == 5) ? "Friday" :**

**(day == 6) ? "Saturday" :**

**(day == 7) ? "Sunday" :**

**"Invalid day number";**

**System.out.println("Day is " + dayName);**

**}**

**}**

**/\***

**OUTPUT**

**Enter day number (1-7): 3**

**Day is Wednesday**

**\*/**

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class MonthName {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter month number (1-12): ");**

**int month = sc.nextInt();**

**String monthName;**

**if (month == 1) monthName = "January";**

**else if (month == 2) monthName = "February";**

**else if (month == 3) monthName = "March";**

**else if (month == 4) monthName = "April";**

**else if (month == 5) monthName = "May";**

**else if (month == 6) monthName = "June";**

**else if (month == 7) monthName = "July";**

**else if (month == 8) monthName = "August";**

**else if (month == 9) monthName = "September";**

**else if (month == 10) monthName = "October";**

**else if (month == 11) monthName = "November";**

**else if (month == 12) monthName = "December";**

**else monthName = "Invalid month number";**

**System.out.println("Month is " + monthName);**

**}**

**}**

**/\***

**OUTPUT**

**Enter month number (1-12): 8**

**Month is August**

**\*/**

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class CalculatorSwitch {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter first number: ");**

**double num1 = sc.nextDouble();**

**System.out.print("Enter second number: ");**

**double num2 = sc.nextDouble();**

**System.out.print("Enter operator (+, -, \*, /): ");**

**char operator = sc.next().charAt(0);**

**double result;**

**switch (operator) {**

**case '+':**

**result = num1 + num2;**

**System.out.println("Result: " + result);**

**break;**

**case '-':**

**result = num1 - num2;**

**System.out.println("Result: " + result);**

**break;**

**case '\*':**

**result = num1 \* num2;**

**System.out.println("Result: " + result);**

**break;**

**case '/':**

**if (num2 != 0) {**

**result = num1 / num2;**

**System.out.println("Result: " + result);**

**} else {**

**System.out.println("Error: Division by zero is not allowed.");**

**}**

**break;**

**default:**

**System.out.println("Invalid operator!");**

**}**

**}**

**}**

**/\***

**OUTPUT**

**Enter first number: 15**

**Enter second number: 3**

**Enter operator (+, -, \*, /): /**

**Result: 5.0**

**\*/**

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class GradeSwitch {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter marks (0–100): ");**

**int marks = sc.nextInt();**

**String grade;**

**if (marks < 0 || marks > 100) {**

**grade = "Invalid marks!";**

**} else {**

**switch (marks / 10) {**

**case 10:**

**case 9:**

**case 8:**

**grade = "A";**

**break;**

**case 7:**

**grade = "B";**

**break;**

**case 6:**

**if (marks >= 55) {**

**grade = "C";**

**} else {**

**grade = "D";**

**}**

**break;**

**case 5:**

**if (marks >= 55) {**

**grade = "C";**

**} else {**

**grade = "D";**

**}**

**break;**

**case 4:**

**if (marks >= 45) {**

**grade = "D";**

**} else {**

**grade = "E";**

**}**

**break;**

**case 3:**

**case 2:**

**grade = "E";**

**break;**

**case 1:**

**case 0:**

**grade = "F";**

**break;**

**default:**

**grade = "Invalid";**

**}**

**}**

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

**}**

**}**

**/\***

**OUTPUT**

**Enter marks (0–100): 78**

**Grade: B**

**\*/**

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**25. Message Based on Number (1–5) Scenario:**

**Take a number (1–5) and print a message according to the case.**

**Input:**

**Enter a number: 3**

**Output:**

**You selected option 3**

**Answer:-**

**import java.util.Scanner;**

**public class MessageSwitch {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter a number (1–5): ");**

**int num = sc.nextInt();**

**switch (num) {**

**case 1:**

**System.out.println("You selected option 1");**

**break;**

**case 2:**

**System.out.println("You selected option 2");**

**break;**

**case 3:**

**System.out.println("You selected option 3");**

**break;**

**case 4:**

**System.out.println("You selected option 4");**

**break;**

**case 5:**

**System.out.println("You selected option 5");**

**break;**

**default:**

**System.out.println("Invalid option! Please enter 1–5.");**

**}**

**}**

**}**

**/\***

**OUTPUT**

**Enter a number (1–5): 3**

**You selected option 3**

**\*/**

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class SeasonCheck {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter month number (1–12): ");**

**int month = sc.nextInt();**

**if (month == 12 || month == 1 || month == 2) {**

**System.out.println("Season is Winter");**

**} else if (month >= 3 && month <= 5) {**

**System.out.println("Season is Summer");**

**} else if (month >= 6 && month <= 8) {**

**System.out.println("Season is Monsoon");**

**} else if (month >= 9 && month <= 11) {**

**System.out.println("Season is Autumn");**

**} else {**

**System.out.println("Invalid month number! Please enter 1–12.");**

**}**

**}**

**}**

**/\***

**OUTPUT**

**Enter month number (1–12): 12**

**Season is Winter**

**\*/**

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class MessageByCharacter {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter a character (A–E): ");**

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

**switch (ch) {**

**case 'A':**

**System.out.println("You selected option A");**

**break;**

**case 'B':**

**System.out.println("You selected option B");**

**break;**

**case 'C':**

**System.out.println("You selected option C");**

**break;**

**case 'D':**

**System.out.println("You selected option D");**

**break;**

**case 'E':**

**System.out.println("You selected option E");**

**break;**

**default:**

**System.out.println("Invalid input! Please enter A–E.");**

**}**

**}**

**}**

**/\***

**OUTPUT**

**Enter a character (A–E): B**

**You selected option B**

**\*/**

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class TrafficSignal {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter traffic light color (Red/Yellow/Green): ");**

**String color = sc.next().toLowerCase();**

**switch (color) {**

**case "red":**

**System.out.println("Stop");**

**break;**

**case "yellow":**

**System.out.println("Get Ready");**

**break;**

**case "green":**

**System.out.println("Go");**

**break;**

**default:**

**System.out.println("Invalid color! Please enter Red, Yellow, or Green.");**

**}**

**}**

**}**

**/\***

**OUTPUT**

**Enter traffic light color (Red/Yellow/Green): Green**

**Go**

**\*/**

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**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.**

**Answer:-**

**import java.util.Scanner;**

**public class DayTypeSelection {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter day type (1–Workday, 2–Weekend): ");**

**int dayType = sc.nextInt();**

**switch (dayType) {**

**case 1:**

**System.out.println("It’s a workday. Time to work!");**

**break;**

**case 2:**

**System.out.println("It’s weekend. No work today.");**

**break;**

**default:**

**System.out.println("Invalid input! Please enter 1 or 2.");**

**}**

**}**

**}**

**/\***

**OUTPUT**

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

**It’s weekend. No work today.**

**\*/**

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**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, 3-Multiplication, 4-Division): 1**

**Enter first number: 20**

**Enter second number: 30**

**Output:**

**Result: 50**

**Answer:-**

**import java.util.Scanner;**

**public class SimpleCalculator {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Select operation (1-Addition, 2-Subtraction, 3-Multiplication, 4-Division): ");**

**int choice = sc.nextInt();**

**System.out.print("Enter first number: ");**

**double num1 = sc.nextDouble();**

**System.out.print("Enter second number: ");**

**double num2 = sc.nextDouble();**

**double result;**

**switch (choice) {**

**case 1:**

**result = num1 + num2;**

**System.out.println("Result: " + result);**

**break;**

**case 2:**

**result = num1 - num2;**

**System.out.println("Result: " + result);**

**break;**

**case 3:**

**result = num1 \* num2;**

**System.out.println("Result: " + result);**

**break;**

**case 4:**

**if (num2 != 0) {**

**result = num1 / num2;**

**System.out.println("Result: " + result);**

**} else {**

**System.out.println("Error: Division by zero is not allowed.");**

**}**

**break;**

**default:**

**System.out.println("Invalid operation! Please select 1-4.");**

**}**

**}**

**}**

**/\***

**OUTPUT**

**Select operation (1-Addition, 2-Subtraction, 3-Multiplication, 4-Division): 1**

**Enter first number: 20**

**Enter second number: 30**

**Result: 50.0**

**\*/**

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**31. Greatest of Two Numbers (Ternary) Scenario:**

**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**

**Answer:-**

**import java.util.Scanner;**

**public class GreatestTernary {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter first number: ");**

**int num1 = sc.nextInt();**

**System.out.print("Enter second number: ");**

**int num2 = sc.nextInt();**

**int greatest = (num1 > num2) ? num1 : num2;**

**System.out.println("Greatest number: " + greatest);**

**}**

**}**

**/\***

**OUTPUT**

**Enter first number: 45**

**Enter second number: 30**

**Greatest number: 45**

**\*/**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class NumberSignTernary {**

**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) ? "Number is Positive" : (num < 0) ? "Number is Negative" : "Number is Zero";**

**System.out.println(result);**

**}**

**}**

**/\***

**OUTPUT**

**Enter a number: -12**

**Number is Negative**

**\*/**

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class EvenOddTernary {**

**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 % 2 == 0) ? "Number is Even" : "Number is Odd";**

**System.out.println(result);**

**}**

**}**

**/\***

**OUTPUT**

**Enter a number: 17**

**Number is Odd**

**\*/**

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class VotingEligibilityTernary {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter age: ");**

**int age = sc.nextInt();**

**String result = (age >= 18) ? "Eligible to vote" : "Not Eligible to vote";**

**System.out.println(result);**

**}**

**}**

**/\***

**OUTPUT**

**Enter age: 20**

**Eligible to vote**

**\*/**

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class PassFailTernary {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter marks: ");**

**int marks = sc.nextInt();**

**String result = (marks >= 35) ? "Pass" : "Fail";**

**System.out.println(result);**

**}**

**}**

**/\***

**OUTPUT**

**Enter marks: 28**

**Fail**

**\*/**

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class SmallestOfThree {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter first number: ");**

**int num1 = sc.nextInt();**

**System.out.print("Enter second number: ");**

**int num2 = sc.nextInt();**

**System.out.print("Enter third number: ");**

**int num3 = sc.nextInt();**

**int smallest = (num1 < num2) ? ((num1 < num3) ? num1 : num3) : ((num2 < num3) ? num2 : num3);**

**System.out.println("Smallest number: " + smallest);**

**}**

**}**

**/\***

**OUTPUT**

**Enter first number: 12**

**Enter second number: 8**

**Enter third number: 19**

**Smallest number: 8**

**\*/**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class LeapYearTernary {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter year: ");**

**int year = sc.nextInt();**

**String result = (year % 4 == 0 && year % 100 != 0) || (year % 400 == 0) ? "Leap Year" : "Not a Leap Year";**

**System.out.println(result);**

**}**

**}**

**/\***

**OUTPUT**

**Enter year: 2024**

**Leap Year**

**\*/**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class VowelConsonantTernary {**

**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);**

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

**System.out.println(result);**

**}**

**}**

**/\***

**OUTPUT**

**Enter a character: i**

**Vowel**

**\*/**

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class BonusEligibilityTernary {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter salary: ");**

**double salary = sc.nextDouble();**

**System.out.print("Enter years of service: ");**

**int years = sc.nextInt();**

**double bonus = (years > 5) ? (salary \* 0.05) : 0;**

**System.out.println("Bonus: " + bonus);**

**}**

**}**

**/\***

**OUTPUT**

**Enter salary: 50000**

**Enter years of service: 6**

**Bonus: 2500.0**

**\*/**

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class PurchaseDiscountTernary {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter purchase amount: ");**

**double amount = sc.nextDouble();**

**double totalCost = (amount > 1000) ? (amount \* 0.9) : amount;**

**System.out.println("Total cost after discount: " + totalCost);**

**}**

**}**

**/\***

**OUTPUT**

**Enter purchase amount: 1200**

**Total cost after discount: 1080.0**

**\*/**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class ArmstrongNumber {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter a 3-digit number: ");**

**int num = sc.nextInt();**

**int originalNum = num;**

**int sum = 0;**

**while (num != 0) {**

**int digit = num % 10;**

**sum += digit \* digit \* digit;**

**num /= 10;**

**}**

**if (sum == originalNum) {**

**System.out.println(originalNum + " is an Armstrong number");**

**} else {**

**System.out.println(originalNum + " is not an Armstrong number");**

**}**

**}**

**}**

**/\***

**OUTPUT**

**Enter a 3-digit number: 153**

**153 is an Armstrong number**

**\*/**

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**42. Armstrong Numbers Between 100–500 Scenario:**

**Print all Armstrong numbers between 100 and 500.**

**Output:**

**153**

**370**

**371**

**407**

**Answer:-**

**public class ArmstrongRange {**

**public static void main(String[] args) {**

**for (int num = 100; num <= 500; num++) {**

**int sum = 0;**

**int temp = num;**

**while (temp != 0) {**

**int digit = temp % 10;**

**sum += digit \* digit \* digit;**

**temp /= 10;**

**}**

**if (sum == num) {**

**System.out.println(num);**

**}**

**}**

**}**

**}**

**/\***

**OUTPUT**

**153**

**370**

**371**

**407**

**\*/**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class SumOfDigits {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

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

**int num = sc.nextInt();**

**int sum = 0;**

**int temp = num;**

**while (temp != 0) {**

**int digit = temp % 10;**

**sum += digit;**

**temp /= 10;**

**}**

**System.out.println("Sum of digits: " + sum);**

**}**

**}**

**/\***

**OUTPUT**

**Enter a number: 482**

**Sum of digits: 14**

**\*/**

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class ReversePalindrome {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter a 4-digit number: ");**

**int num = sc.nextInt();**

**int temp = num;**

**int reversed = 0;**

**while (temp != 0) {**

**int digit = temp % 10;**

**reversed = reversed \* 10 + digit;**

**temp /= 10;**

**}**

**System.out.println("Reversed number: " + reversed);**

**if (num == reversed) {**

**System.out.println("Palindrome: Yes");**

**} else {**

**System.out.println("Palindrome: No");**

**}**

**}**

**}**

**/\***

**OUTPUT**

**Enter a 4-digit number: 1221**

**Reversed number: 1221**

**Palindrome: Yes**

**\*/**

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class SortThreeNumbers {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter first number: ");**

**int num1 = sc.nextInt();**

**System.out.print("Enter second number: ");**

**int num2 = sc.nextInt();**

**System.out.print("Enter third number: ");**

**int num3 = sc.nextInt();**

**int temp;**

**if (num1 > num2) {**

**temp = num1;**

**num1 = num2;**

**num2 = temp;**

**}**

**if (num1 > num3) {**

**temp = num1;**

**num1 = num3;**

**num3 = temp;**

**}**

**if (num2 > num3) {**

**temp = num2;**

**num2 = num3;**

**num3 = temp;**

**}**

**System.out.println("Ascending order: " + num1 + ", " + num2 + ", " + num3);**

**}**

**}**

**/\***

**OUTPUT**

**Enter first number: 45**

**Enter second number: 12**

**Enter third number: 78**

**Ascending order: 12, 45, 78**

**\*/**

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class CharacterTypeChecker {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

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

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

**if ((ch >= 'A' && ch <= 'Z') || (ch >= 'a' && ch <= 'z')) {**

**System.out.println("Alphabet");**

**} else if (ch >= '0' && ch <= '9') {**

**System.out.println("Digit");**

**} else {**

**System.out.println("Special Character");**

**}**

**}**

**}**

**/\***

**OUTPUT**

**Enter a character: %**

**Special Character**

**\*/**

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**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)**

**Answer:-**

**import java.util.Scanner;**

**public class EvenOddTwoNumbers {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter first number: ");**

**int num1 = sc.nextInt();**

**System.out.print("Enter second number: ");**

**int num2 = sc.nextInt();**

**if (num1 % 2 == 0 && num2 % 2 == 0) {**

**System.out.println("Both numbers are even");**

**} else if (num1 % 2 != 0 && num2 % 2 != 0) {**

**System.out.println("Both numbers are odd");**

**} else {**

**System.out.println("Numbers are mixed (one even, one odd)");**

**}**

**}**

**}**

**/\***

**OUTPUT**

**Enter first number: 12**

**Enter second number: 17**

**Numbers are mixed (one even, one odd)**

**\*/**

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**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−**

**Answer:-**

**import java.util.Scanner;**

**public class GradePlusMinus {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter marks: ");**

**int marks = sc.nextInt();**

**String grade = "";**

**if (marks >= 85 && marks <= 100) {**

**grade = "A";**

**} else if (marks >= 70 && marks <= 84) {**

**grade = "A-";**

**} else if (marks >= 55 && marks <= 69) {**

**grade = "B";**

**} else if (marks >= 40 && marks <= 54) {**

**grade = "C";**

**} else if (marks >= 0 && marks <= 39) {**

**grade = "F";**

**} else {**

**grade = "Invalid marks";**

**}**

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

**}**

**}**

**/\***

**OUTPUT**

**Enter marks: 78**

**Grade: A-**

**\*/**

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class DaysInMonthLeap {**

**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;**

**if (month == 2) {**

**if ((year % 4 == 0 && year % 100 != 0) || (year % 400 == 0)) {**

**days = 29;**

**} else {**

**days = 28;**

**}**

**} else if (month == 4 || month == 6 || month == 9 || month == 11) {**

**days = 30;**

**} else if (month >= 1 && month <= 12) {**

**days = 31;**

**} else {**

**days = -1;**

**}**

**if (days != -1) {**

**System.out.println(days + " days");**

**} else {**

**System.out.println("Invalid month number");**

**}**

**}**

**}**

**/\***

**OUTPUT**

**Enter year: 2024**

**Enter month number: 2**

**29 days**

**\*/**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

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**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**

**Answer:-**

**import java.util.Scanner;**

**public class DivisibilityCheckCustom {**

**public static void main(String[] args) {**

**Scanner sc = new Scanner(System.in);**

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

**int num = sc.nextInt();**

**if (num % 2 == 0) {**

**System.out.println("Divisible by 2");**

**}**

**if (num % 3 == 0) {**

**System.out.println("Divisible by 3");**

**}**

**if (num % 5 == 0) {**

**System.out.println("Divisible by 5");**

**}**

**if (num % 2 != 0 && num % 3 != 0 && num % 5 != 0) {**

**System.out.println("Not divisible by 2, 3, or 5");**

**}**

**}**

**}**

**/\***

**OUTPUT**

**Enter number: 30**

**Divisible by 2**

**Divisible by 3**

**Divisible by 5**

**\*/**