

## Problem 1 String Analysis

```
2
3 public class StringAnalysis{
4     public static void main(String[] args) {
5         Scanner sc = new Scanner(System.in);
6         System.out.print("Enter a string: ");
7         String str = sc.nextLine();
8         sc.close();
9
10        int vowels = 0, consonants = 0, digits = 0, specialChars = 0;
11
12        for (int i = 0; i < str.length(); i++) {
13            char ch = str.charAt(i);
14
15            if (Character.isLetter(ch)) {
16                if ("aeiouAEIOU".indexOf(ch) != -1)
17                    vowels++;
18                else
19                    consonants++;
20            } else if (Character.isDigit(ch)) {
21                digits++;
22            } else {
23                specialChars++;
24            }
25        }
26
27        System.out.println("Vowels: " + vowels);
28        System.out.println("Consonants: " + consonants);
29    }
30 }
```

input

Enter a string: Ananya\_Goel\_

Vowels: 5

Consonants: 5

Digits: 0

Special Characters: 2

...Program finished with exit code 0

## Problem 2 Matrix Operations

```
2
3 public class SimpleMatrixOperations {
4     public static void main(String[] args) {
5         Scanner sc = new Scanner(System.in);
6
7         System.out.print("Enter rows and columns: ");
8         int rows = sc.nextInt();
9         int cols = sc.nextInt();
10
11         int[][] a = new int[rows][cols];
12         int[][] b = new int[rows][cols];
13         int[][] sum = new int[rows][cols];
14         int[][] diff = new int[rows][cols];
15         int[][] prod = new int[rows][cols];
16
17         // ... (rest of the code) ...
18     }
19 }
```

input

Enter first matrix:

4 5

6 7

Enter second matrix:

7 6

1 2

Addition and Subtraction:

11 11

7 9

Subtraction:

-3 -1

5 5

Multiplication:

33 34

49 50

### Problem 3 Basic Banking System

```
BankSystem.java
1 import java.util.Scanner;
2
3 class BankAccount {
4     private String name;
5     private String accountNumber;
6     private double balance;
7
8     public BankAccount(String name, String accountNumber, double balance) {
9         this.name = name;
10        this.accountNumber = accountNumber;
11        this.balance = balance;
12    }
13
Download
Current File
input
Enter Name: Ananya Goel
Enter Account Number: 743870127FS
Enter Initial Balance: 5000
1. Deposit
2. Withdraw
3. Account Details
4. Exit
Choose an option: 1
Enter deposit amount: 7000
Deposited: 7000.0
1. Deposit
2. Withdraw
3. Account Details
4. Exit
Choose an option: 4
Thank you for using the banking system!
```