**Write a program to Print Sum of Series 1+x+x2+x3+......+xn in java**

**import java.util.Scanner;**

**public class SeriesSum {**

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

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

**System.out.print("Enter the value of x: ");**

**double x = scanner.nextDouble();**

**System.out.print("Enter the value of n: ");**

**int n = scanner.nextInt();**

**double sum = 0**

**for (int i = 0; i <= n; i++) {**

**sum += Math.pow(x, i);**

**}**

**System.out.println("Sum of the series is: " + sum);**

**}**

**}**

**java Program to Make a Simple Calculator Using switch...case and Scanner class.**

**import java.util.Scanner;**

**public class SimpleCalculator {**

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

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

**System.out.println("Simple Calculator");**

**System.out.println("Choose an operation:");**

**System.out.println("1. Addition (+)");**

**System.out.println("2. Subtraction (-)");**

**System.out.println("3. Multiplication (\*)");**

**System.out.println("4. Division (/)");**

**System.out.print("Enter your choice (1/2/3/4): ");**

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

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

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

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

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

**double result = 0;**

**switch (choice) {**

**case 1:**

**result = num1 + num2;**

**break;**

**case 2:**

**result = num1 - num2;**

**break;**

**case 3:**

**result = num1 \* num2;**

**break;**

**case 4:**

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

**result = num1 / num2;**

**} else {**

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

**return;**

**}**

**break;**

**default:**

**System.out.println("Invalid choice. Please select a valid operation (1/2/3/4).");**

**return;**

**}**

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

**}**

**}**

**Write a program to find factorial of a number with recursion**

**import java.util.Scanner;**

**public class Factorial {**

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

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

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

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

**if (num < 0) {**

**System.out.println("Factorial is not defined for negative numbers.");**

**} else {**

**long factorial =Recursive(num);**

**System.out.println("Factorial of " + num + " is " + factorial);**

**}**

**}**

**// Recursive function to calculate factorial**

**static long Recursive(int n) {**

**if (n == 0 || n == 1) {**

**return 1;**

**}**

**return n \* Recursive(n – 1);**

**}**

**}**

**Write a program to add two matrices of order 3X3**

**public class Matrix {**

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

**// Define the dimensions of the matrices**

**int rows = 3;**

**int cols = 3;**

**// Initialize two 3x3 matrices**

**int[][] matrix1 = {**

**{1, 2, 3},**

**{4, 5, 6},**

**{7, 8, 9}**

**};**

**int[][] matrix2 = {**

**{9, 8, 7},**

**{6, 5, 4},**

**{3, 2, 1}**

**};**

**// Initialize the result matrix to store the sum**

**int[][] resultMatrix = new int[rows][cols];**

**// Perform matrix addition**

**for (int i = 0; i < rows; i++) {**

**for (int j = 0; j < cols; j++) {**

**resultMatrix[i][j] = matrix1[i][j] + matrix2[i][j];**

**}**

**}**

**// Display the result matrix**

**System.out.println("Matrix 1:");**

**displayMatrix(matrix1, rows, cols);**

**System.out.println("Matrix 2:");**

**displayMatrix(matrix2, rows, cols);**

**System.out.println("Resultant Matrix (Sum of the two matrices):");**

**displayMatrix(resultMatrix, rows, cols);**

**}**

**// Helper method to display a matrix**

**static void displayMatrix(int[][] matrix, int rows, int cols) {**

**for (int i = 0; i < rows; i++) {**

**for (int j = 0; j < cols; j++) {**

**System.out.print(matrix[i][j] + " ");**

**}**

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

**}**

**}**

**}**

**Java IO program to take input through keyboard at runtime.**

**import java.util.Scanner;**

**public class KeyboardInputExample {**

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

**// Create a Scanner object for keyboard input**

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

**System.out.print("Enter your name: ");**

**String name = scanner.nextLine();**

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

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

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

**double favoriteNumber = scanner.nextDouble();**

**scanner.nextLine(); // Consume the newline character**

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

**String sentence = scanner.nextLine();**

**// Display the input values**

**System.out.println("Name: " + name);**

**System.out.println("Age: " + age);**

**System.out.println("Favorite Number: " + favoriteNumber);**

**System.out.println("Sentence: " + sentence);**

**// Close the scanner to free up system resources**

**scanner.close();**

**}**

**}**

**Write a program to Search an Element in an Array in java.**

**import java.util.Scanner;**

**public class ArraySearch {**

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

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

**// Declare an array**

**int[] arr = {12, 34, 56, 78, 90, 23, 45};**

**System.out.print("Enter the element to search: ");**

**int target = scanner.nextInt();**

**boolean found = false;**

**// Iterate through the array to search for the element**

**for (int i = 0; i < arr.length; i++) {**

**if (arr[i] == target) {**

**System.out.println("Element found at index " + i);**

**found = true;**

**break; // Exit the loop once the element is found**

**}**

**}**

**if (!found) {**

**System.out.println("Element not found in the array.");**

**}**

**}**

**}**

**Count Vowels and Consonants in a String**

**import java.util.Scanner;**

**public class count {**

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

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

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

**String input = scanner.nextLine();**

**scanner.close();**

**int vowels = 0;**

**int consonants = 0;**

**// Convert the input string to lowercase to handle both upper and lower case characters.**

**input = input.toLowerCase();**

**for (int i = 0; i < input.length(); i++) {**

**char ch = input.charAt(i);**

**// Check if the character is a letter.**

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

**// Check if the character is a vowel.**

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

**vowels++;**

**} else {**

**consonants++;**

**}**

**}**

**}**

**System.out.println("Number of vowels: " + vowels);**

**System.out.println("Number of consonants: " + consonants);**

**}**

**}**

**Count the Number of Duplicate Words in a String**

**public class DuplicateWord {**

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

**String string = "Big black bug bit a big black dog on his big black nose";**

**int count;**

**//Converts the string into lowercase**

**string = string.toLowerCase();**

**//Split the string into words using built-in function**

**String words[] = string.split(" ");**

**System.out.println("Duplicate words in a given string : ");**

**for(int i = 0; i < words.length; i++) {**

**count = 1;**

**for(int j = i+1; j < words.length; j++) {**

**if(words[i].equals(words[j])) {**

**count++;**

**//Set words[j] to 0 to avoid printing visited word**

**words[j] = "0";**

**}**

**}**

**//Displays the duplicate word if count is greater than 1**

**if(count > 1 && words[i] != "0")**

**System.out.println(words[i]);**

**}**

**}**

**}**

**Count Number of Words in Given String**

**public class Word {**

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

**String string = "Big black bug bit a big black dog on his big black nose";**

**int count=0;**

**//Converts the string into lowercase**

**string = string.toLowerCase();**

**//Split the string into words using built-in function**

**String words[] = string.split(" ");**

**for(int i=0;i<words.length;i++)**

**{**

**System.out.println(words[i]);**

**count++;**

**}**

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

**}**

**}**

**Count the Number of Occurrences of Substring in a String**

**public class OccurrencesOfSubstring {**

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

**String str = "JavaExamplesJavaCodeJavaProgram";**

**String strFind = "Java";**

**int count = 0, fromIndex = 0;**

**while ((fromIndex = str.indexOf(strFind, fromIndex)) != -1 ){**

**// System.out.println("Found at index: " + fromIndex);**

**count++;**

**fromIndex++;**

**}**

**System.out.println("Total occurrences: " + count);**

**}**

**}**

**Count the Occurrences of Each Character in String**

**public class CountOccuranceOfChar1**

**{**

**static final int MAX\_CHAR = 256;**

**static void getOccuringChar(String str)**

**{**

**//creating an array of size 256 (ASCII\_SIZE)**

**int count[] = new int[MAX\_CHAR];**

**//finds the length of the string**

**int len = str.length();**

**//initialize count array index**

**for (int i = 0; i < len; i++)**

**count[str.charAt(i)]++;**

**//create an array of given String size**

**char ch[] = new char[str.length()];**

**for (int i = 0; i < len; i++)**

**{**

**ch[i] = str.charAt(i);**

**int find = 0;**

**for (int j = 0; j <= i; j++)**

**{**

**//if any matches found**

**if (str.charAt(i) == ch[j])**

**find++;**

**}**

**if (find == 1)**

**//prints occurrence of the character**

**System.out.println("The occurrence of "+ str.charAt(i)+ " is: " + count[str.charAt(i)]);**

**}**

**}**

**//driver Code**

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

**{**

**String str = "asjcbsjvnskgjdkfjhkdfkfjghkfj"; //lung disease**

**//function calling**

**getOccuringChar(str);**

**}**

**}**