Q1) Write a program to input n numbers on command line argument and calculate max. of them.

Ans 1)

import java.io.\*;

import java.util.Scanner;

public class main {

public static void main(String[] args) {

Scanner scn = new Scanner(System.in);

System.out.println("Enter the number of values you would like to input:");

int n= scn.nextInt();

int max = 0;

System.out.println("Now Enter the Values");

for(int i=1; i <= n ; i++)

{

int number = scn.nextInt();

if(number > max){

max = number;

}

}

System.out.println("Maximum number is: " + max);

}

}

Q2) Write a program to calculate a Factorial of a number.

Ans 2)

import java.io.\*;

import java.util.Scanner;

public class main {

public static void main(String[] args) {

Scanner scn = new Scanner(System.in);

int n= scn.nextInt();

int f = 1;

for(int i=2; i <= n ; i++)

{

f = f\*i;

}

System.out.println(f);

}

}

Ans 3)

import java.io.\*;

import java.util.Scanner;

public class main {

public static void main(String[] args) {

Scanner scn = new Scanner(System.in);

int n= scn.nextInt();

int fib1 = 0;

int fib2 = 1;

int sum = 0;

for(int i=1; i <= n ; i++)

{

System.out.println(fib1);

sum = fib1 + fib2;

fib1 = fib2;

fib2 = sum;

}

}

}

Ans 4)

import java.io.\*;

import java.util.Scanner;

public class main {

public static void main(String[] args) {

Scanner scn = new Scanner(System.in);

for(int i = 1; i<= 5; i++){

int n = scn.nextInt();

if(n >= 90){

System.out.println("Grade: Ex");

} else if(90 > n && n >= 80){

System.out.println("Grade: A");

} else if(80 > n && n >= 70){

System.out.println("Grade: B");

} else if(70 > n && n >= 60){

System.out.println("Grade: C");

} else {

System.out.println("Grade: F");

}

}

}

}

Ans 5)

import java.io.\*;

import java.util.Scanner;

public class main {

public static void main(String[] args) {

Scanner scn = new Scanner(System.in);

System.out.println("Enter a string:");

String input = scn.nextLine();

int uppercaseCount = 0, lowercaseCount = 0, digitCount = 0, otherCount = 0;

for (char ch : input.toCharArray()) {

if (ch >= 'A' && ch <= 'Z') {

uppercaseCount++;

} else if (ch >= 'a' && ch <= 'z') {

lowercaseCount++;

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

digitCount++;

} else {

otherCount++;

}

}

System.out.println("Uppercase letters: " + uppercaseCount);

System.out.println("Lowercase letters: " + lowercaseCount);

System.out.println("Digits: " + digitCount);

System.out.println("Other characters: " + otherCount);

}

}

Ans 6)

import java.io.\*;

import java.util.Scanner;

public class main {

public static void main(String[] args) {

Scanner scn = new Scanner(System.in);

int r1 = scn.nextInt();

int c1 = scn.nextInt();

int[][] one = new int[r1][c1];

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

for(int j= 0; j< one[0].length; j++){

one[i][j] = scn.nextInt();

}

}

int r2 = scn.nextInt();

int c2 = scn.nextInt();

int[][] two = new int[r2][c2];

for(int i = 0; i< r2; i++){

for(int j= 0; j< c2; j++){

two[i][j] = scn.nextInt();

}

}

if(c1 != r2) {

System.out.println("Invalid Input");

return;

}

int[][] prd = new int[r1][c2];

for(int i = 0; i < r1; i++){

for(int j = 0; j < c2; j++){

for(int k = 0; k < c1; k++){

prd[i][j] += one[i][k] \* two[k][j];

}

}

}

for(int i = 0; i < r1; i++){

for(int j = 0; j < c2; j++){

System.out.print(prd[i][j]);

}

System.out.println();

}

}

}

Ans 7)

import java.io.\*;

import java.util.Scanner;

public class main {

public static void main(String[] args) {

Scanner scn = new Scanner(System.in);

int n = scn.nextInt();

for(int i = 1; i<= 10; i++){

System.out.println(n + "X" + i + "=" + n\*i);

}

}

}

Ans 8)

import java.io.\*;

import java.util.Scanner;

class Student {

String Name;

String RollNo;

int TotalMarks;

Student(String Name, String RollNo, int TotalMarks){

this.Name = Name;

this.RollNo = RollNo;

this.TotalMarks = TotalMarks;

}

}

public class main {

public static void main(String[] args) {

Scanner scn = new Scanner(System.in);

String Name = scn.next();

String RollNo = scn.next();

int TotalMarks = scn.nextInt();

Student student = new Student(Name, RollNo, TotalMarks);

System.out.println("Name of Student is: " + Name);

System.out.println("Roll Number of Student is: " + RollNo);

System.out.println("Total Marks of Student is: " + TotalMarks);

}

}

Ans 9)

import java.io.\*;

import java.util.Scanner;

public class main {

public static int binary(int n){

int rb = 0;

int p1 = 1;

while(n > 0){

int b = n%2;

n = n/2;

rb = b\*p1;

p1= p1\*10;

}

return rb;

}

public static int Octal(int n){

int ro = 0;

int p2 = 1;

while(n > 0){

int o = n%8;

n = n/8;

ro = o\*p2;

p2= p2\*10;

}

return ro;

}

public static int Hexadecimal(int n){

int rh = 0;

int p3 = 1;

while(n > 0){

int h = n%16;

n = n/16;

rh = h\*p3;

p3= p3\*10;

}

return rh;

}

public static void main(String[] args) {

Scanner scn = new Scanner(System.in);

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

int n = scn.nextInt();

int oct = Octal(n);

int bin = binary(n);

int hex= Hexadecimal(n);

System.out.println("Given number : " + n);

System.out.println("Binary equivalent : " + bin);

System.out.println("Octal equivalent : " + oct);

System.out.println("Hexadecimal equivalent : " + hex);

}

}

Ans 10)

import java.util.Scanner;

public class Main {

public static void main(String[] args) {

Scanner scn = new Scanner(System.in);

char[][] nameOfStudents = new char[10][50];

for (int i = 0; i < 10; i++) {

System.out.print("Enter name of student " + (i + 1) + ": ");

String name = scn.next();

for (int j = 0; j < name.length(); j++) {

nameOfStudents[i][j] = name.charAt(j);

}

for (int j = name.length(); j < 50; j++) {

nameOfStudents[i][j] = '\0';

}

}

qsort(nameOfStudents);

System.out.println("\nSorted names of students:");

for (int i = 0; i < 10; i++) {

System.out.println(new String(nameOfStudents[i]).trim());

}

}

public static void qsort(char[][] arr) {

quickSort(arr, 0, arr.length - 1);

}

private static void quickSort(char[][] arr, int low, int high) {

if (low < high) {

int pi = partition(arr, low, high);

quickSort(arr, low, pi - 1);

quickSort(arr, pi + 1, high);

}

}

private static int partition(char[][] arr, int low, int high) {

char[] pivot = arr[high];

int i = (low - 1);

for (int j = low; j < high; j++) {

if (new String(arr[j]).compareTo(new String(pivot)) < 0) {

i++;

char[] temp = arr[i];

arr[i] = arr[j];

arr[j] = temp;

}

}

char[] temp = arr[i + 1];

arr[i + 1] = arr[high];

arr[high] = temp;

return i + 1;

}

}

Ans 11)

import java.io.\*;

import java.util.Scanner;

class Employee {

private String firstName;

private String lastName;

private double monthlySalary;

public Employee(String firstName, String lastName, double monthlySalary) {

this.firstName = firstName;

this.lastName = lastName;

if (monthlySalary < 0) {

this.monthlySalary = 0;

} else {

this.monthlySalary = monthlySalary;

}

}

public void setSalary(double monthlySalary) {

if (monthlySalary >= 0) {

this.monthlySalary = monthlySalary;

}

}

public void displayEmployee() {

System.out.println("Employee: " + firstName + " " + lastName);

System.out.println("Monthly Salary: $" + monthlySalary);

System.out.println("Yearly Salary: $" + (monthlySalary \* 12));

}

public void applyRaise(double percentage) {

if (percentage > 0) {

monthlySalary += monthlySalary \* (percentage / 100);

}

}

}

public class Main {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

System.out.println("Enter details for Employee 1:");

System.out.print("First Name: ");

String firstName1 = scanner.nextLine();

System.out.print("Last Name: ");

String lastName1 = scanner.nextLine();

System.out.print("Monthly Salary: ");

double salary1 = scanner.nextDouble();

Employee emp1 = new Employee(firstName1, lastName1, salary1);

scanner.nextLine(); // Consume newline

System.out.println("\nEnter details for Employee 2:");

System.out.print("First Name: ");

String firstName2 = scanner.nextLine();

System.out.print("Last Name: ");

String lastName2 = scanner.nextLine();

System.out.print("Monthly Salary: ");

double salary2 = scanner.nextDouble();

Employee emp2 = new Employee(firstName2, lastName2, salary2);

System.out.println("\nBefore raise:");

emp1.displayEmployee();

emp2.displayEmployee();

emp1.applyRaise(10);

emp2.applyRaise(10);

System.out.println("\nAfter 10% raise:");

emp1.displayEmployee();

emp2.displayEmployee();

scanner.close();

}

}

Ans 12)

import java.io.\*;

import java.util.Scanner;

public class ReverseString {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

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

String input = scanner.nextLine();

String reversedString = "";

for (int i = input.length() - 1; i >= 0; i--) {

reversedString += input.charAt(i);

}

System.out.println("Reversed string: " + reversedString);

}

}

Ans 13)

import java.io.\*;

import java.util.Scanner;

public class DuplicateStrings {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

System.out.print("Enter the number of strings: ");

int n = scanner.nextInt();

scanner.nextLine();

String[] strings = new String[n];

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

System.out.print("Enter string " + (i + 1) + ": ");

strings[i] = scanner.nextLine();

}

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

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

if (strings[i] == strings[j]) {

System.out.println("Duplicate string: " + strings[i]);

break;

}

}

}

}

}

Ans 14)

import java.io.\*;

import java.util.Scanner;

public class PalindromeCheck {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

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

String input = scanner.nextLine();

String reversedString = "";

for (int i = input.length() - 1; i >= 0; i--) {

reversedString += input.charAt(i);

}

if (input.equals(reversedString)) {

System.out.println("The string is a palindrome.");

} else {

System.out.println("The string is not a palindrome.");

}

}

}

Ans 15)

import java.io.\*;

import java.util.Scanner;

public class AlphabetCount {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

System.out.println("Input: ");

String input = scanner.nextLine();

input = input.toLowerCase();

int[] counts = new int[26];

for (char c : input.toCharArray()) {

if (c >= 'a' && c <= 'z') {

counts[c - 'a']++;

}

}

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

if (counts[i] > 0) {

char letter = (char) (i + 'A');

System.out.println(letter + " : " + counts[i]);

}

}

}

}