QUESTION 1;

import java.util.Scanner;

public class ArrayMinMaxFinder {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

System.out.print("Enter the size of the array: ");

int size = scanner.nextInt();

int[] arr = new int[size];

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

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

arr[i] = scanner.nextInt();

}

int max = arr[0];

int min = arr[0];

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

{

if (arr[i] > max) {

max = arr[i];

}

if (arr[i] < min) {

min = arr[i];

}

}

System.out.println(max);

System.out.println(min);

scanner.close();

} import java.util.Scanner;

public class avg

{

public static void main(String[] args)

{

Scanner scanner = new Scanner(System.in);

System.out.print("Enter the size of the array: ");

int size = scanner.nextInt();

int[] arr = new int[size];

System.out.println("elements of the array:");

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

arr[i] = scanner.nextInt();

}

int sum = 0;

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

sum += arr[i];

}

double average = (double) sum / size;

System.out.println( average);

scanner.close();

}

}}

QUESTION 1;

QUESTION 2;

import java.util.Scanner;

public class SecondLargestElementFinder {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

System.out.print("Enter the size of the array: ");

int size = scanner.nextInt();

int[] arr = new int[size];

System.out.println("Enter the elements of the array:");

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

arr[i] = scanner.nextInt();

}

int secondLargest = findSecondLargest(arr);

System.out.println("Second largest element in the array: " + secondLargest);

scanner.close();

}

public static int findSecondLargest(int[] arr) {

int n = arr.length;

if (n < 2) {

throw new IllegalArgumentException("Array must have at least two elements");

}

int largest = Math.max(arr[0], arr[1]);

int secondLargest = Math.min(arr[0], arr[1]);

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

if (arr[i] > largest) {

secondLargest = largest;

largest = arr[i];

} else if (arr[i] > secondLargest && arr[i] != largest) {

secondLargest = arr[i];

}

}

return secondLargest;

}

}

QUESTION3;

import java.util.Scanner;

public class MatrixAddition {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

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

int rows = scanner.nextInt();

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

int columns = scanner.nextInt();

int[][] matrix1 = new int[rows][columns];

System.out.println("Enter elements for Matrix 1:");

readMatrixElements(scanner, matrix1);

int[][] matrix2 = new int[rows][columns];

System.out.println("Enter elements for Matrix 2:");

readMatrixElements(scanner, matrix2);

int[][] sumMatrix = new int[rows][columns];

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

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

sumMatrix[i][j] = matrix1[i][j] + matrix2[i][j];

}

}

System.out.println("Sum of the matrices:");

printMatrix(sumMatrix);

scanner.close();

}

public static void readMatrixElements(Scanner scanner, int[][] matrix) {

int rows = matrix.length;

int columns = matrix[0].length;

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

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

matrix[i][j] = scanner.nextInt();

}

}

}

public static void printMatrix(int[][] matrix) {

int rows = matrix.length;

int columns = matrix[0].length;

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

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

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

}

System.out.println();

}

}

}

QUESTION 4

import java.util.Scanner;

public class CubeCalculator {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

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

int number = scanner.nextInt();

int cube = number \* number \* number;

System.out.println("The cube of " + number + " is: " + cube);

scanner.close();

}

}

QUESTION 5;

import java.util.Scanner;

public class CubeCalculator {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

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

int number = scanner.nextInt();

int cube = number \* number \* number;

System.out.println("The cube of " + number + " is: " + cube);

scanner.close();

}

}

QUESTION 6;

import java.util.Scanner;

public class LeapYearChecker {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

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

int year = scanner.nextInt();

boolean isLeapYear = isLeapYear(year);

if (isLeapYear) {

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

} else {

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

}

scanner.close();

}

public static boolean isLeapYear(int year) {

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

return true;

} else {

return false;

}

}

}

QUESTION 7;

import java.util.Scanner;

public class MultiplicationTable {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

System.out.print("Enter a number to generate its multiplication table: ");

int number = scanner.nextInt();

System.out.println("Multiplication table for " + number + ":");

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

int result = number \* i;

System.out.println(number + " \* " + i + " = " + result);

}

scanner.close();

}

}

QUESTION8;

import java.util.Scanner;

public class SumOfNaturalNumbers {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

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

int n = scanner.nextInt();

int sum = n \* (n + 1) / 2;

System.out.println("Sum of the first " + n + " natural numbers: " + sum);

scanner.close();

}

}