**LEVEL 1 PRACTICE PROBLEM OF ARRAYS**

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**1. Check Voting Eligibility for 10 Students**

// Program 1: Check Voting Eligibility for 10 Students

import java.util.Scanner;

public class VotingEligibility {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

int[] ages = new int[10];

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

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

ages[i] = scanner.nextInt();

}

for (int age : ages) {

if (age < 0) {

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

} else if (age >= 18) {

System.out.println("The student with the age " + age + " can vote.");

} else {

System.out.println("The student with the age " + age + " cannot vote.");

}

}

}

}

**2. Check Number Type and Compare First and Last**

// Program 2: Check Number Type and Compare First and Last

import java.util.Scanner;

public class NumberCheck {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

int[] numbers = new int[5];

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

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

numbers[i] = scanner.nextInt();

}

for (int number : numbers) {

if (number > 0) {

if (number % 2 == 0) {

System.out.println(number + " is a positive even number.");

} else {

System.out.println(number + " is a positive odd number.");

}

} else if (number < 0) {

System.out.println(number + " is a negative number.");

} else {

System.out.println("The number is zero.");

}

}

if (numbers[0] == numbers[4]) {

System.out.println("First and last numbers are equal.");

} else if (numbers[0] > numbers[4]) {

System.out.println("First number is greater than the last number.");

} else {

System.out.println("First number is less than the last number.");

}

}

}

**3. Multiplication Table of a Number**

// Program 3: Multiplication Table of a Number

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: ");

int number = scanner.nextInt();

int[] table = new int[10];

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

table[i] = number \* (i + 1);

}

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

System.out.println(number + " \* " + (i + 1) + " = " + table[i]);

}

}

}

**4. Store Numbers Until 0 or Negative or 10 Entries**

// Program 4: Store Numbers Until 0/Negative or Max 10 Entries

import java.util.Scanner;

public class NumberStorage {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

double[] numbers = new double[10];

double total = 0.0;

int index = 0;

while (true) {

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

double number = scanner.nextDouble();

if (number <= 0 || index == 10) {

break;

}

numbers[index] = number;

index++;

}

System.out.println("Numbers entered:");

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

System.out.println(numbers[i]);

total += numbers[i];

}

System.out.println("Total sum = " + total);

}

}

**5. Multiplication Table from 6 to 9**

// Program 5: Multiplication Table from 6 to 9

import java.util.Scanner;

public class MultiTable6To9 {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

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

int number = scanner.nextInt();

int[] multiplicationResult = new int[4];

for (int i = 0; i < 4; i++) {

multiplicationResult[i] = number \* (6 + i);

}

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

System.out.println(number + " \* " + (6 + i) + " = " + multiplicationResult[i]);

}

}

}

**6. Mean Height of Football Team**

// Program 6: Mean Height of Football Team

import java.util.Scanner;

public class MeanHeight {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

double[] heights = new double[11];

double sum = 0;

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

System.out.print("Enter height of player " + (i + 1) + ": ");

heights[i] = scanner.nextDouble();

sum += heights[i];

}

double mean = sum / heights.length;

System.out.println("Mean height = " + mean);

}

}

**7. Save Odd and Even Numbers into Arrays**

// Program 7: Save Odd and Even Numbers into Arrays

import java.util.Scanner;

public class OddEvenArray {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

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

int number = scanner.nextInt();

if (number <= 0) {

System.out.println("Invalid input. Not a natural number.");

return;

}

int[] odd = new int[number / 2 + 1];

int[] even = new int[number / 2 + 1];

int oddIndex = 0, evenIndex = 0;

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

if (i % 2 == 0) {

even[evenIndex++] = i;

} else {

odd[oddIndex++] = i;

}

}

System.out.println("Even numbers:");

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

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

}

System.out.println("\nOdd numbers:");

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

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

}

}

}

**8. Find Factors of a Number**

// Program 8: Find Factors of a Number

import java.util.Scanner;

import java.util.Arrays;

public class FactorFinder {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

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

int number = scanner.nextInt();

int maxFactor = 10;

int[] factors = new int[maxFactor];

int index = 0;

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

if (number % i == 0) {

if (index == maxFactor) {

maxFactor \*= 2;

factors = Arrays.copyOf(factors, maxFactor);

}

factors[index++] = i;

}

}

System.out.println("Factors of " + number + " are:");

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

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

}

}

}

**9. Copy 2D Array into 1D Array**

// Program 9: Copy 2D Array into 1D Array

import java.util.Scanner;

public class Array2DTo1D {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

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

int rows = scanner.nextInt();

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

int cols = scanner.nextInt();

int[][] matrix = new int[rows][cols];

int[] array = new int[rows \* cols];

int index = 0;

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

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

System.out.print("Enter element at (" + i + "," + j + "): ");

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

array[index++] = matrix[i][j];

}

}

System.out.println("1D Array:");

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

System.out.print("Position " + i + " = " + array[i] + "\n");

}

}

}

**10. FizzBuzz Program with Array**

// Program 10: FizzBuzz using Array

import java.util.Scanner;

public class FizzBuzz {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

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

int number = scanner.nextInt();

if (number <= 0) {

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

return;

}

String[] result = new String[number + 1];

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

if (i % 3 == 0 && i % 5 == 0 && i != 0) {

result[i] = "FizzBuzz";

} else if (i % 3 == 0 && i != 0) {

result[i] = "Fizz";

} else if (i % 5 == 0 && i != 0) {

result[i] = "Buzz";

} else {

result[i] = Integer.toString(i);

}

}

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

System.out.println("Position " + i + " = " + result[i]);

}

}

}