1. Aarav's Weekly Pocket Money Adventure

Story:

Aarav is a cheerful seventh-grade student who looks forward to school every day not just for learning, but for the treats he gets during his lunch break. Each day, his parents give him a small amount of pocket money. Some days it's just enough for a samosa, other days he gets enough for a samosa and a chocolate milk. He started writing down the amount he receives each day in a notebook, hoping to understand his weekly budget better.

At the end of the week, Aarav decides to do two things:

1. Find out how much pocket money he received in total during the week.

2. Identify which day he got the highest amount of pocket money.

He needs your help to analyze this data using an array!

Problem:

Write a program that takes input as an array money[] containing 7 integers, each representing the pocket money Aarav received from Monday to Sunday.

- Calculate and print the total amount received in the week.

- Also, print the maximum amount received on any single day.

Sample Input: [10, 20, 15, 30, 25, 10, 20]

Sample Output:

Total Pocket Money: 130

Maximum Pocket Money in a Day: 30

2. Roll Number Game Day

Story:

It was the annual "Maths Carnival" in school. Ms. Neha, the math teacher, came up with a unique game. She asked all students to form two groups for a math challenge. But instead of forming random groups, she decided to form teams based on their roll numbers.

Here's her idea:

- Students with even roll numbers go to Team Alpha.
- Students with odd roll numbers go to Team Beta.

However, there were over 30 students in class, and sorting them manually was difficult. Ms. Neha turned to her programming club students for help. Can you write a program that reads an array of roll numbers and separates them into even and odd groups?

Problem:

Write a program that takes an array rollNumbers[] as input and separates them into two arrays: one containing all even roll numbers and another containing all odd roll numbers.

Sample Input: [1, 4, 5, 6, 7, 10]

Sample Output:

Even Roll Numbers: [4, 6, 10]

Odd Roll Numbers: [1, 5, 7]

3. Siya's Report Card Tracker

Story:

Siya is a sincere student who takes her studies seriously. She maintains a personal record of all her test

scores in a diary. Every time she gives a test, she writes her marks next to the date. Now, she wants to evaluate herself she's not just interested in her total marks, but how often she improved from her last test.

For example, if she scored 60 in the first test and 65 in the next, that's an improvement. But if she drops to 62 in the third, that's not. Siya wants to know: how many times did her score improve compared to the previous test?

Problem:

Given an array marks[] that represents Siya's scores in the order she gave her tests, write a program to count how many times her marks increased compared to the previous test.

Sample Input: [60, 65, 62, 70, 75]

Sample Output:

Number of Improvements: 3

4. Vihaan and His Lucky Number

Story:

Vihaan is a little superstitious. He believes that the number 4 brings him good luck. He often looks for the number 4 on clocks, books, house numbers, and even buses. One day, he decides to note down all the random numbers he encounters in a day from his notebook pages to the lift numbers and bus numbers he saw.

At the end of the day, Vihaan wants to check: Did he encounter his lucky number today? If yes, at what position in the list?

Problem:

Given an array numbers[] and a number lucky, write a program to:

- Check whether lucky exists in the array.

- If it does, return its index (first occurrence).

- If it doesn't, return -1.

Sample Input: numbers = [2, 7, 9, 4, 6], lucky = 4

Sample Output:

Lucky number 4 found at index 3

5. Tanvi's Attendance Record

Story:

Tanvi is reviewing her attendance for the last week of school before the exams. Her teacher gives her a small strip with 1s and 0s:

- 1 means she was present

- 0 means she was absent

She wants to calculate how many days she missed, because she has to submit a short apology note for each day she was absent. Can you help her find the total number of absent days?

Problem:

Write a program that takes an array attendance[] of 1s and 0s, where 1 = present and 0 = absent. Count and print the total number of absences.

Sample Input: [1, 0, 1, 1, 0, 1, 0]

Sample Output:

Total Absent Days: 3