Assignment on Array

Problem 1: Student Information System

You are developing a student management system. Each student has a name, age, and a grade. You need to store and display this information.

Problem Statement

Create a structure to store the name, age, and grade of a student. Write a program to input the details of a student and print them.

Input

The first line contains the student's name (a string).
The second line contains the student's age (an integer).
The third line contains the student's grade (a character).

Input	Output
Alice Johnson 20 A	Student Information: Name: Alice Johnson Age: 20 Grade: A
Bob Smith 22 B	Student Information: Name: Bob Smith Age: 22 Grade: B
Awesh Islam 23 B	Student Information: Name: Awesh Islam Age: 23 Grade: B

Problem 2: Date Difference Calculator

Awesh is planning a special event and needs to calculate the number of days between two dates. He has a list of events and wants to know the time remaining for each event by calculating the difference between today's date and the event date. You need to help Awesh by writing a program that calculates the difference between two dates.

Create a structure to represent a date with day, month, and year. Write a program that inputs two dates and calculates the number of days between them. Assume that all months have 30 days for simplicity and that there are no leap years.

Input	Output
15 8 2024 1 1 2025	139
10 3 2024 25 3 2024	15
31 12 2023 1 1 2024	1
1 1 2024 1 1 2025	365

Problem 3: Complex Number Multiplier

Awesh is working on a project involving complex numbers. He needs to calculate the product of two complex numbers for his calculations. You need to help Awesh by writing a program that multiplies two complex numbers.

Problem Statement

Create a structure to represent a complex number with real and imaginary parts. Write a program that inputs two complex numbers and computes their product.

Input	Output
3 4 1 2	-5 + 10i
1 2 3 4	-7 + 22i
0 1 1 0	0 + 1i
1 1 1 1	0 + 2i

Problem 4: Distance Calculator

Awesh is working on a project involving geographical locations. He needs to calculate the distance between two points on a 2D plane. You need to help Awesh by writing a program that computes the distance between two points given their coordinates.

Create a structure to represent a point in 2D space with x & y coordinates. Write a program that inputs the coordinates of two points and calculates the Euclidean distance between them.

Input	Output
1 2 4 6	5.00
0 0 3 4	5.00
2 2 5 5	4.24
-1 -1 1 1	2.83