OOP - Lab # 01

1. Number Analyzer

Write a program that takes 5 integers as input and counts:

- How many are positive numbers
- How many are negative numbers
- How many are even numbers
- How many are odd numbers
- The program should use an array to store the numbers and loops to analyze them

2. Multiplication Table Generator

Write a program that generates multiplication tables from 1 to 10 using nested loops. The output should display:

Table of 1:
1 × 1 = 1
1 × 2 = 2
...
Table of 2:
2 × 1 = 2
2 × 2 = 4
...
(and so on up to 10)

3. Array Search and Statistics

Write a program that:

- Creates an array of 10 random numbers between 1-100
- Finds and displays the maximum and minimum values
- Calculates and displays the average
- Asks user to input a number to search for in the array
- Displays whether the number was found and at which position(s)

4. Student Grade Calculator

Write a program that:

- Takes marks of 5 subjects for a student
- Stores them in an array
- Calculates total marks and percentage
- Determines the grade based on:
    - A: 90% and above
    - B: 75-89%
    - C: 50-74%
    - F: Below 50%
- Use a while loop to allow calculating grades for multiple students until user chooses to exit

5. Array Operations Menu

Create a menu-driven program that performs various operations on an array:

1. Input array elements
2. Display array
3. Reverse the array
4. Find sum of all elements
5. Find largest and smallest element
6. Exit

The program should use a do-while loop to keep showing the menu until user chooses to exit.