Practice Problems for CSE115 Lab Quiz-02

Functions:

1. Write a function to calculate the factorial of a number using recursion. (Medium)

2. Write a function that takes an array of integers and its size as parameters and returns the sum of the elements. (Easy)

3. Write a function that swaps two integers using pointers. (Medium)

4. Write a function that takes a string as input and returns its length without using the built-in *strlen* function. (Medium)

5. Write a function that takes two integers and returns their greatest common divisor (GCD) using the Euclidean algorithm. (Medium)

Pointers:

6. Write a program that dynamically allocates memory for an array of integers and initializes it with user input. (Medium)

7. Write a function that takes a pointer to an integer and increments its value by 1. (Easy)

8. Write a function that takes a pointer to a character array (string) and converts it to uppercase. (Medium)

9. Write a program that demonstrates pointer arithmetic by creating an array and printing its elements using pointers. (Medium)

10. Write a function that takes a pointer to an array and its size, and returns the average of the elements. (Medium)

1D Arrays:

11. Write a program that reverses a 1D array of integers. (Medium)

12. Write a function that sorts a 1D array of integers using the bubble sort algorithm. (Medium)

13. Write a program that finds the maximum and minimum elements in a 1D array. (Medium)

14. Write a function that removes duplicates from a 1D array and returns the new size of the array. (Medium)

15. Write a program that merges two sorted 1D arrays into a single sorted array. (Medium)

2D Arrays:

16. Write a program that initializes a 2D array and prints its elements. (Easy)

17. Write a function that transposes a given 2D array. (Medium)

18. Write a program that finds the sum of each row in a 2D array. (Medium)

19. Write a function that takes a 2D array and its dimensions as parameters and returns the largest element in the array. (Medium)

20. Write a program that multiplies two 2D arrays and prints the result. (Medium)