ASSIGNMENT 6_2

1. what is the difference between global and local scope of a variable?

Parameter	Local Variables	Global Variables
Definition	Defined inside a function or block.	Defined outside of all functions or blocks.
Scope	Accessible only within the function/block where it's defined.	Accessible throughout the entire program.
Lifetime	Exists only during the function's execution.	Remains in memory for the duration of the program.
Accessibility	Cannot be accessed outside its function.	Can be accessed and modified by any function in the program.
Keyword for Modification	No special keyword is required.	Use the **global** keyword to modify it inside a function.
Memory Storage	Stored in the stack.	Stored in the data segment of memory.
Risk of Unintended Modification	Low, as it's confined to its function.	Higher, as any function can modify it.

2.What is recursive function?

A **recursive function** is a function that calls itself in order to solve a problem. It breaks down a problem into smaller, more manageable sub-problems of the same type, eventually reaching a base case that can be solved without further recursion.

Key Characteristics of Recursive Functions

1. **Base Case**: This is a condition under which the function stops calling itself. It prevents infinite recursion and eventually allows the function to return a value.
2. **Recursive Case**: This part of the function contains the logic that calls the function itself with modified arguments, gradually moving toward the base case.