DSL A-02

Questions:

1. What is Static and dynamic memory allocation?

Ans:

Static memory allocation:

Static memory is allocated for declared variables by the compiler. The address can be found using the address of operator and can be assigned to a pointer. The memory is allocated during Compile time.

Dynamic memory allocation:

Memory allocation done at the time of execution (run time) is known as dynamic memory allocation. functions calloc() and malloc() support allocating dynamic memory. In the Dynamic allocation of memory space is allowed by using those functions when the value is returned by functions and assigned to pointer variables.

e.g. Dynamic memory allocation is generally used for linked list.

The Static memory allocations is generally used for array.

Q.2. Explain the difference between list and array in Python.

Ans: List:

A list in python is a collection of items which can contain elements of multiple data types, which may be either numeric, character, logical values etc. It is an ordered collection of data supporting negative indexing.

Array:

An array is a vector containing homogenous elements i.e. belonging to the same data type. Elements are allocated with contiguous memory locations allowing easy modification. In python we have to use the array module to declare array.

List	Array
Can consist of elements belonging to different data types	Only consist of elements belonging to the same data type.
No need to explicitly import a module for declaration.	Need to explicitly import a module for declaration
Can be nested to contain different type of elements.	Must contain either no nested elements of same size.