

Ch-1 [B]

**ADVANCED CONCEPTS OF C
AND
INTRODUCTION TO DATA STRUCTURES**

INTRODUCTION TO DS

- ✘ The data structures represent the relationship between data element.
- ✘ The data structures the programmer can easily process the data.

TYPES OF DS

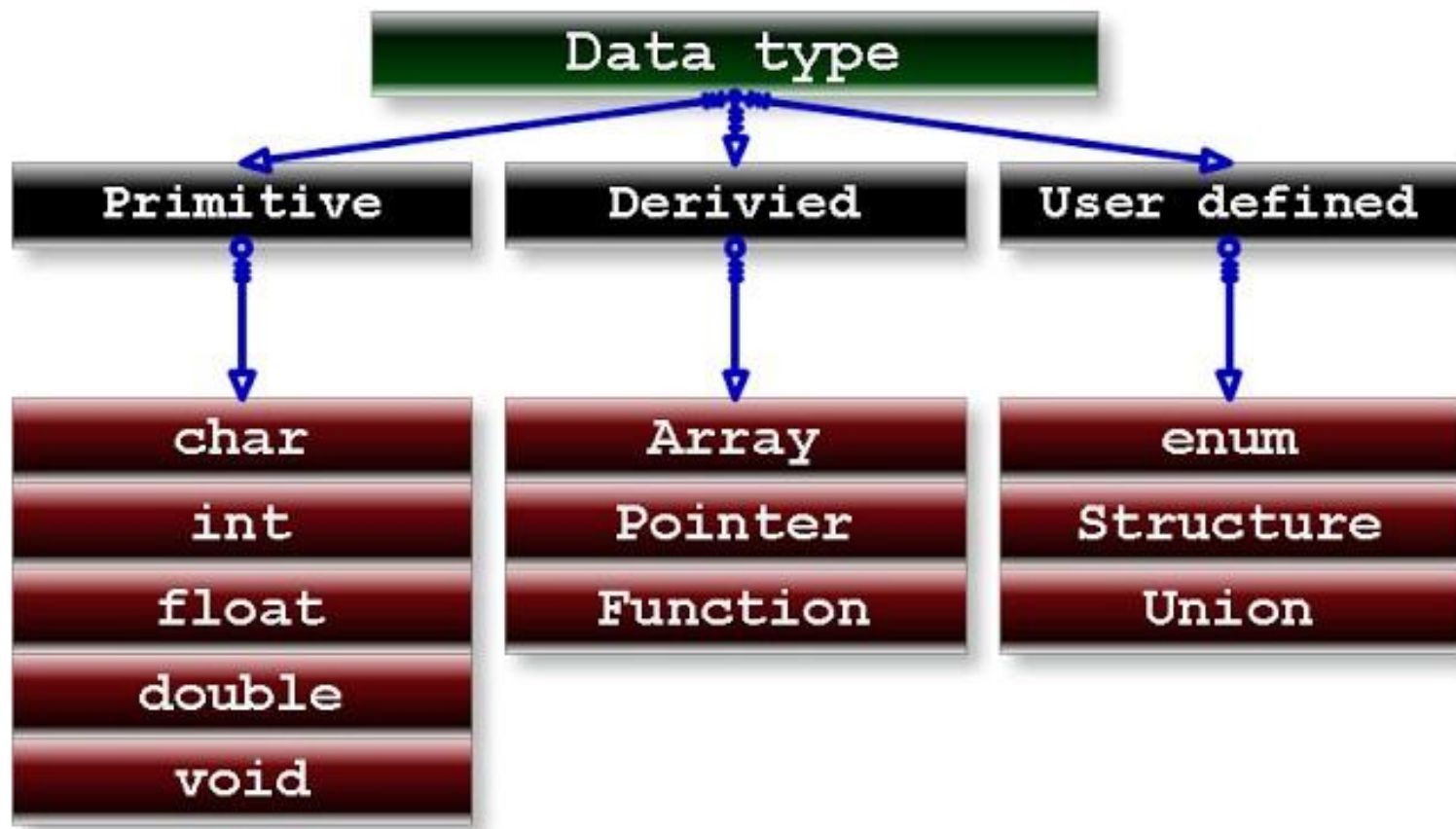
- ✗ Linear DS
- ✗ Non-Linear DS

INTRODUCTION TO DATA STRUCTURES

The data structures can also be classified on the basis of the following characteristics:

Characteristic	Description
Linear	In Linear data structures, the data items are arranged in a linear sequence. Example: Array
Non-Linear	In Non-Linear data structures, the data items are not in sequence. Example: Tree, Graph
Homogeneous	In homogeneous data structures, all the elements are of same type. Example: Array
Non-Homogeneous	In Non-Homogeneous data structure, the elements may or may not be of the same type. Example: Structures
Static	Static data structures are those whose sizes and structures associated memory locations are fixed, at compile time. Example: Array
Dynamic	Dynamic structures are those which expands or shrinks depending upon the program need and its execution. Also, their associated memory locations changes. Example: Linked List created using pointers

DATATYPES OF DS



DATA TYPES USED IN DS

- ✗ **char:** The most basic data type in C. It stores a single character and requires a single byte of memory in almost all compilers.
- ✗ **int:** As the name suggests, an int variable is used to store an integer.
- ✗ **float:** It is used to store decimal numbers (numbers with floating point value) with single precision.
- ✗ **double:** It is used to store decimal numbers (numbers with floating point value) with double precision

DATA TYPE	SIZE (IN BYTE)
char	1
short int	2
int	2
long int	4
float	4
double	8
long double	10
void	MEANING LESS
enum	2