

C Language

Chapter # 9

Elements of C language

Lecture: 10

Today's Lecture

- ▶ What is Data Type?
- ▶ Categories of Data type.
- ▶ Different Data Types in C language.

Data Type

- ▶ The Data type specifies the type of data that can be stored in a variable. It also defines a set of operations on the data.
- ▶ Every data type has a range of values and requires different amount of memory.
- ▶ The compiler allocates memory space for each variable or constant according to its data type.

Categories of Data Type

1. **Standard Data type:** A data type that is predefined in the language is called standard data type. Some examples are int, float, char etc.
2. **User-defined Data type:** C also allows the user to define his own data types known as user-defined data types.

Different data types in C language

Sr. No	Data type	Purpose
1	int	To store Numeric values
2	float	To store Real values
3	char	To store Character values

1. int Data type

- ▶ Integer data is the numeric value with no decimal point or fraction. int data type is used to store integer values.

Example:

10,15,-20,-18

Types of int data type

Type	Size(bytes)	Range
int	2 bytes	-32,768 to 32767
unsigned int	2 bytes	0 to 65535
long	4 bytes	-2,147,483,648 to 2,147,483,647
unsigned long	4 bytes	0 to 4,294,967,295

2. float Data type

Floating data is the numeric value with decimal point or fraction. float data type is used to store real values.

Example:

10.5, 3.5, -5.7, -8.2

Types of float Data type

Type	Size(bytes)	Range	Precision
float	4 bytes	3.4×10^{-38} to $3.4 \times 10^{+38}$	6 decimal places
double	8 bytes	1.7×10^{-308} to $1.7 \times 10^{+308}$	15 decimal places
long double	10 bytes	1.7×10^{-4932} to $1.7 \times 10^{+4932}$	19 decimal places



The End

Read this topic from your books and ask question if any confusion.

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