

Previous class videos:

Day-1 <https://youtu.be/3rSQMvl6Ovs>
Day-2 <https://youtu.be/AI2W2f78wEc>
Day-3 <https://youtu.be/0bD3hU1wM9I>
Day-4 <https://youtu.be/bi1gAJJ18W8>
Day-5 <https://youtu.be/NZkLZa2w2Dc>
Day-6 <https://youtu.be/1m09CCC1gsc>
Day-7 <https://youtu.be/KNfAXhQde3c>
Day-8 <https://youtu.be/LoqMBO45iaY>
Day-9 <https://youtu.be/VeZTpqANezQ>

DATA TYPES

Data type determines the type of value we are going to store in our computer. To store anything in our computer, we should have to allocate the memory. This memory allocation is depended on the data type we are using.

Data type determines the properties such as

1. No of bytes
2. Range
3. Type of value

In C language we are having 3 **basic** data types

- 1. Int – To store non-decimal numbers**
- 2. Float – To store decimal numbers**
- 3. Char – To stores alphabets, numbers and special char**

Total data types are divided into 3 types.

1. Primitive data types

2. Derived data types

3. User defined data types

PRIMITIVE DATA TYPES:

These are the regular data types we are using in our c programs.

| Data type | Bytes | Conversion Character / format specifier | Storage Range |
|---|--------------|--|--|
| int / signed int / short int | 2 | %d | -32768 to +32767 |
| unsigned int | 2 | %u | 0 to 65535 |
| long int | 4 | %ld | -2147483648 to 2147483647 |
| unsigned long int | 4 | %lu | 0 to 4294967295 |
| float | 4 | %f | $3.4 * 10^{-38}$ to $3.4 * 10^{+38}$ |
| double | 8 | %lf | $1.7 * 10^{-308}$ to $1.7 * 10^{+308}$ |
| long double | 10 | %Lf | $3.4 * 10^{-4932}$ to $1.1 * 10^{+4932}$ |
| char | 1 | %c | 1 character Signed char [-128 to +127] Unsigned char [0 to 255] |
| char[10] (STRING) | 10 | %s | 9 char + 1 null char |

| | | | |
|-------------------------------------|--|--|----------------|
| void [empty data type] | | | nothing |
|-------------------------------------|--|--|----------------|

DERIVED DATA TYPES:

They are derived from primitive data types.

- 1. Array [non-primitive]**
- 2. Pointer**
- 3. Function**

USER DEFINED DATA TYPES:

These are the data types created by the user.

1. structure
2. union
3. enum

