WELCOME TO SEMINAR

ON TOPIC: BASIC DATATYPES(Built in types)

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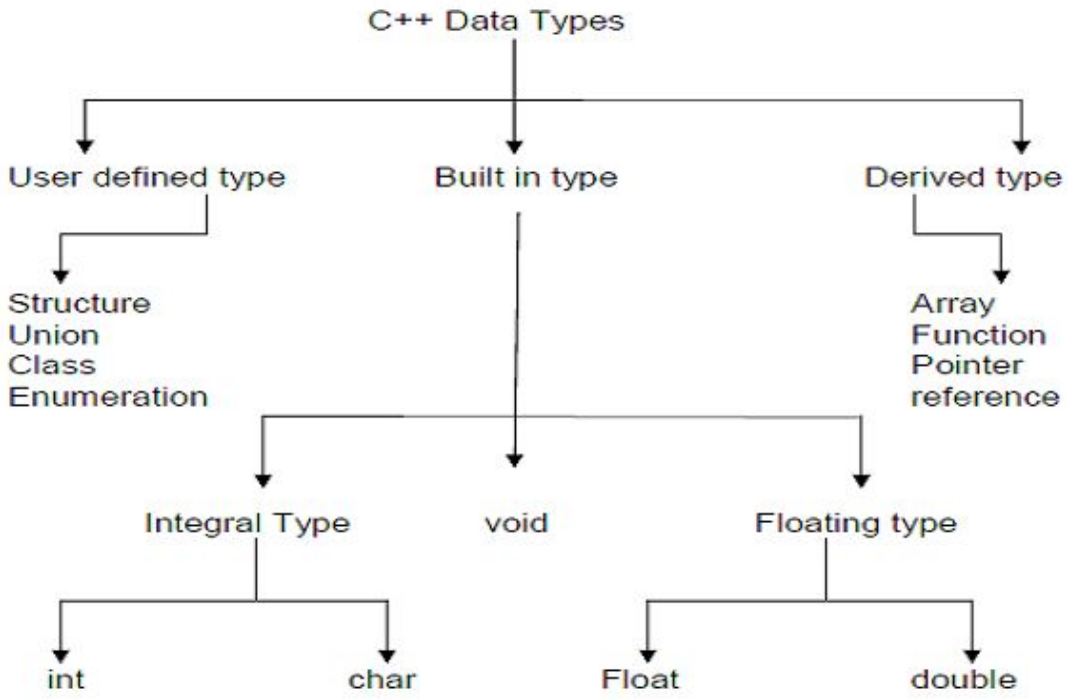
There are 3 types of Data types in C++…



C++ datatypes

- Built in Datatypes.
- User defined datatypes
- Derived datatypes

Definition of built in types

- The term Built-in itself tells us that these categories of data types are defined by the programming language at prior.
- *Built-in Data types are those data types that can be directly used by the programmer to declare and store different variables in a program.*
- They are also called Primary or Primitive Data Types.

Classifications

Built-in-datatypes are of 3 types:

- Integral type
  - Int
  - Char
- Void
- Floating type
  - Float
  - Double

Description on built-in-datatypes

- Built-in data types are the most basic data-types in C++.
- The term built-in means that they are **pre-defined** in C++ and can be used directly in a program.
- **char, int, float and double** are the most common built-in data types.
- Apart from these, we also have **void ,bool and wchar_t** data types.

Int, char, float, double, boolean, void ,wide character - are the most basic and common built-in data types in every programming language. Other than these if you want to work with complex data categories, you will have to define them yourself.

Types and examples of built in datatypes.(integer datatype-int)

- This Built-in data type represents an integer number. It does not support any decimal or fractional number. Integer numbers can contain Positive as well as Negative numbers.
- Ex:- 29, -50, 1947, 50384
- Syntax: int variable_name;
- Example: int a;

Character datatype-char

- This data type accepts character values from the user. These characters include single letter, digit, symbol, special characters, etc enclosed within single quotes. Ex:- ‘A’, ‘$’, ‘g’, ‘5’
- Syntax: char variable_name;
- Example:char a;

Float datatype-float

- Float data type represents numbers that are in decimal format. They are commonly called floating-point numbers. Ex:- 25.56, 785.383, -3674.7358, -10
- Syntax: float variable_name;
- Example: float a;

Double datatype- double

- It is a variant of the Floating-point data type which is also used to represent fractional and decimal numbers. Ex:- 260000.7334
- Syntax:- double variable_name;
- Example: double a;

Boolean Datatype-bool

- This data type consists of only 2 values: True or False. It is a logical type of built-in data type. The default value of Boolean data type is False.
- Ex:- True,false,0,1,2,3
- Syntax: bool variable_name;
- Ex:- bool x = 0; // false

  bool y = 100; // true

Void datatype: void

- This data type is widely used in C and C++ languages. It indicates that it has no value/empty. This data type is mainly used as a return type for functions that do not return a value to the caller function.
- Syntax:- void function_name(void)
- Example:- void print()

Wide character datatype: wchar_t

- Wide char is similar to char data type, except that wide char take up twice the space and can take on much larger values as a result.
- char can take 256 values which corresponds to entries in the ASCII table. On the other hand, wide char can take on 65536 values which corresponds to UNICODE values.
- Just like the keyword for character constants is char, the keyword for wide character is wchar_t.
- Syntax: wchar_t variable_name;
- Example: wchar_t w ;

The discussed datatypes can be classified further into following types:

- Long
- Short
- Signed
- Unsigned

For example:

1. short int
2. long int
3. signed int
4. unsigned int
5. signed char
6. unsigned char
7. unsigned short int
8. signed short int

Sizes of each datatype:

Sno	Datatypes	Sizes(in bytes)
1	void	0
2	char	1
3	bool	1
4	int	2
5	wchar_t	2
6	float	4
7	double	8

Ranges of each datatype:

Type	Bytes	Range
char	1	–128 to 127
unsigned char	1	0 to 255
signed char	1	– 128 to 127
int	2	– 32768 to 32767
unsigned int	2	0 to 65535
signed int	2	– 31768 to 32767
short int	2	– 31768 to 32767
unsigned short int	2	0 to 65535
signed short int	2	–32768 to 32767
long int	4	–2147483648 to 2147483647
signed long int	4	–2147483648 to 2147483647
unsigned long int	4	0 to 4294967295
float	4	3.4E–38 to 3.4E+38
double	8	1.7E–308 to 1.7E+308
long double	10	3.4E–4932 to 1.1E+4932

IT'S TIME FOR PROGRAMMING EXAMPLE.....


THANK YOU
Very Much!