***C++ BASCIS Introduction***

C++ is standardized by the [International Organization for Standardization](https://en.wikipedia.org/wiki/International_Organization_for_Standardization) (ISO), with the latest standard version ratified and published by ISO in December 2020 as [*ISO/IEC 14882:2020*](https://en.wikipedia.org/wiki/C%2B%2B#Standardization) (informally known as [C++20](https://en.wikipedia.org/wiki/C%2B%2B20)).[[12]](https://en.wikipedia.org/wiki/C%2B%2B#cite_note-isocpp2020-12) The C++ programming language was initially standardized in 1998 as *ISO/IEC 14882:1998*, which was then amended by the [C++03](https://en.wikipedia.org/wiki/C%2B%2B03), [C++11](https://en.wikipedia.org/wiki/C%2B%2B11), [C++14](https://en.wikipedia.org/wiki/C%2B%2B14), and [C++17](https://en.wikipedia.org/wiki/C%2B%2B17) standards. The current [C++20](https://en.wikipedia.org/wiki/C%2B%2B20) standard supersedes these with new features and an enlarged [standard library](https://en.wikipedia.org/wiki/C%2B%2B#Standard_library). Before the initial standardization in 1998, C++ was developed by Danish computer scientist [Bjarne Stroustrup](https://en.wikipedia.org/wiki/Bjarne_Stroustrup" \o "High-level programming language) at [Bell Labs](https://en.wikipedia.org/wiki/Bell_Labs) since 1979 as an extension of the [C language](https://en.wikipedia.org/wiki/C_(programming_language)); he wanted an efficient and flexible language similar to C that also provided [high-level features](https://en.wikipedia.org/wiki/High-level_programming_language) for program organization.[[13]](https://en.wikipedia.org/wiki/C%2B%2B#cite_note-13) Since 2012, C++ has been on a three-year release schedule[[14]](https://en.wikipedia.org/wiki/C%2B%2B" \l "cite_note-14) with [C++23](https://en.wikipedia.org/wiki/C%2B%2B23) as the next planned standard.[[15]](https://en.wikipedia.org/wiki/C%2B%2B#cite_note-15)

The C++ language has two main components: a direct mapping of hardware features provided primarily by the C subset, and zero-overhead abstractions based on those mappings. Stroustrup describes C++.

**Introduction to C++ / History of C++ Programming**

1979 or 1980

Bjarne Stroustrup

Invented in AT & T BELL’s LAB

C With Classes

1983 it was given name C++.

**Properties of C++**

1. C++ is user friendly Language
2. C++ is popular language among professional Programmers.
3. C++ is case sensitive language. (int add, ADD, Add, aDD)
4. C++ is flexiable language.
5. C++ is portable language.
6. C++ is high level language.
7. C++ is structured language.
8. C++ is OOP (Object Oriented Programming)

***Header File In C++:***

#include<iostream>

Header file for giving input and printing out put

Preprocessor directives

Int main () {

The execution of code begins from main function

Cout ≪ “Hello world “ ≪ endl ;

Used to display output in quotation marks

Return 0;

Exit of a function

} curly braces indicate the start and the end of a function

***Structure of main function in C/C++***

**STRUCTURE 01**

**int** **main**(int **argc**, char **argv**[] )

{

**return** 0;

}

**STRUCTURE 02**

int main()

{

return 0;

}

**STRUCTURE 03**

main()

{

return 0;

}

**STRUCTURE 04**

**void** main()

{

}

**STRUCTURE 05**

void main(**void**)

{

}

**EXPLANATION:**

**main()**

1. main is function name and reserve word.
2. it carries the main program of C/C++.
3. Indication of main is main().
4. **Default return type of main is integer.**
5. Main is called by Operating System (OS) and it always returns value to OS.
6. Main is parent shell of every C/C++ program.
7. Main is also called driver program of C/C++ i.e. program cannot run without main function.
8. Any function is called by main either directly or indirectly.

|  |  |  |
| --- | --- | --- |
| **STRUCTURE 02**  int main()  {  return 0;  } | **STRUCTURE 03**  main()  {  return 0;  } | **BOTH are 100% same without any error.** |

**{**is called open compound statement. It tells compiler that C/C++ codes starts from here.

**}** is called close compound statement. It tells compiler that C/C++ codes ends here.

**return**

1. Return is reserve word.
2. This command is used to return some value form function.
3. ***return 0*** has a special meaning for OS. 0 informs that program has terminated successfully with normal process.
4. Other values tell that program is terminated due to some error.

**void**

1. void is a reserve word and function name.
2. it tell do not return anything.
3. void function is just like a procedure.

int main()

{

return 0;

}

char main()

{

return ‘a’;

}

int main(void)

{

return 0;

}

**STRUCTURE 01**

**int** **main**(int **argc**, char **argv**[] )

{

**return** 0;

}

Argc and Argv are called Command Line Arguments.

argc stands for ARGument Count.

argv stands for ARGument Value.

***Cin Statement In C++:-***

*Cin - means as input stream in C++.It Gets data From user.*

The  [cin object](https://www.geeksforgeeks.org/basic-input-output-c/) in C++ is an object of class [iostream](https://www.geeksforgeeks.org/c-stream-classes-structure/). It is used to accept the input from the standard input device i.e. keyboard. It is associated with the standard C input stream stdin. The [extraction operator(>>)](https://www.geeksforgeeks.org/manipulators-in-c-with-examples/) is used along with the object cin for reading inputs.