

— rules for prog
translator that

code

go

rel

C++ Programming

Goal:

- Competitive Programming
- improve understanding about
behind the stage APP running
- interview preparation.

Int

Error

progra

Key terms in programming language.

1. Program / Source code / code - instructions written by humans
2. Machine code - Machine understandable instruction
3. Statement - type of instruction
4. Syntax - rules for programming
5. Compiler - translator that converts source code to Machine code in one go
6. Interpreter - Also a translator [source code to Machine code] but line by line. takes one line of source code and gives equivalent machine code.
7. Execution - Running a program / source code
8. Syntax errors - Error due to mistake in Syntax [rules of programming]
9. Logical error - Error in logic used by the programmer [does not produce error in execution]
10. Runtime errors - Error that occurs during the run time [execution]
11. Bug - Any error is referred as bug
12. Debugging - eliminating bugs in program is debugging.

C++ Programming :- (Definition)

bjarne Stroustrup
Danish

- middle-level
- multi-paradigm
- statically typed
- general purpose

// → Special Purpose & general purpose.

Special purpose programming language is designed to be used in one-specific application development.

ex:- HTML (only for webpage) SQL (only for database)
While general purpose language is used for more than one application development.

// → low level / middle level / high level

Level of abstraction is almost nil ~~for~~ / or very low for low level language. Complexity in programming is high.
eg ASM

	low	middle	high
level of complexity	high	average	low
level of abstraction	low	Medium	high.
exan	Assembly	C, C++	Python

// → Statically typed / dynamically typed.

every object has to be type defined.

int x = 10; ✓

C,
C++

object type is defined during compilation / Runtime

x = 10 Python

multi - paradigm

can be used for different sets of coding

```
void func ( )  
{
```

```
    cout << a+b;
```

```
}
```

general procedure,

```
class animal {
```

```
public:
```

```
    virtual void speak() {
```

```
    }
```

```
};
```

Object oriented.

C98, C03, C11, C13, C17, 20, 23

C++ is the C++ that we are going to follow.

Tools needed:-

* text editor [code editor].

* compiler

* debugger

* command prompt.

tools used

→ STMcube IDE

→ C++ build setting

Modified for C++ 17 version.

Terms:- console application. // Sample C++ Program.

#include <iostream> // Preprocessor directive for inclusion.

before compiler, pre-processor will add the iostream file to

```
int main ( )  
{
```

```
    std::cout << "hi" << std::endl;
```

```
    return 0;
```

// Start of program main() is always the first function called by the

operating system, it returns a value

→ std::cout is a printing program that takes input "hi". and std::endl (new line)

// main() returns 0 indicating success
non-zero indicates failure.