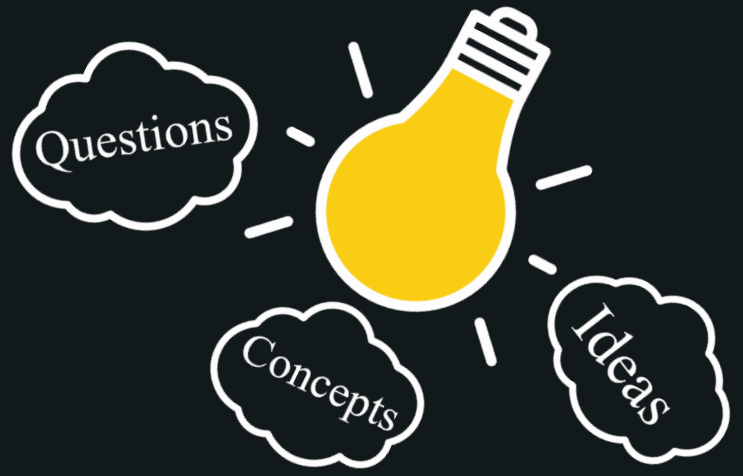

Programming

C++ Programming

VEDINESH

Programming

VEDINESH

Everywhere !!!

What is Programming?

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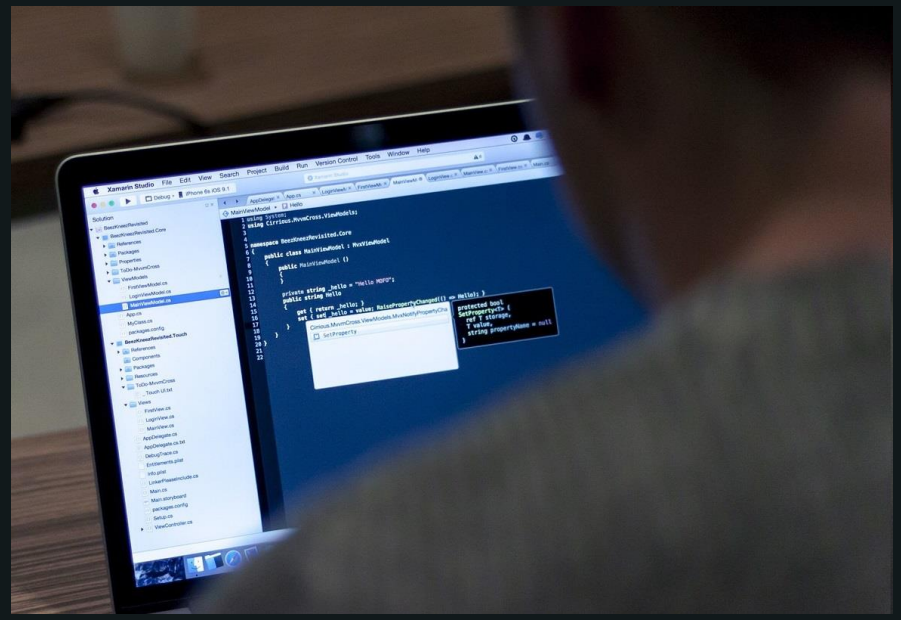
Programming :- It is the process of creating a set of instructions that tell a computer how to perform a task.



What are set of Instructions ?

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Take some water

Set it to boil

Add coffee to it

Wait for few minutes

Programming :- It is the process of creating a set of related instructions that tell a computer how to perform a task.

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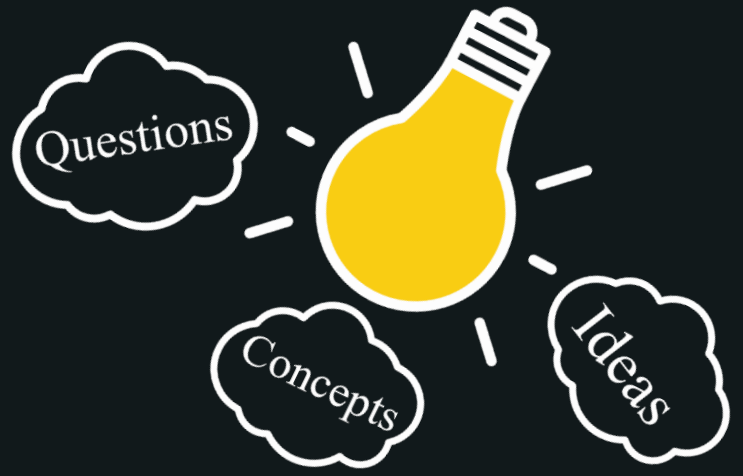
Mindmap



Why C++ ?

C++ Programming

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Reason

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C++ is a object oriented programming language.

Clear structure to program	Reusability of code
Allow working in team.	Reduce time and cost of dev.

All the major operating systems such as Windows, Linux, Android, Ubuntu, iOS, etc. are written in a combination of C and C++. (Databases like MySql , MongoDB etc)

C++ is closer to the hardware level and is a comparatively low-level language.

Why C/C++ close to hardware ?

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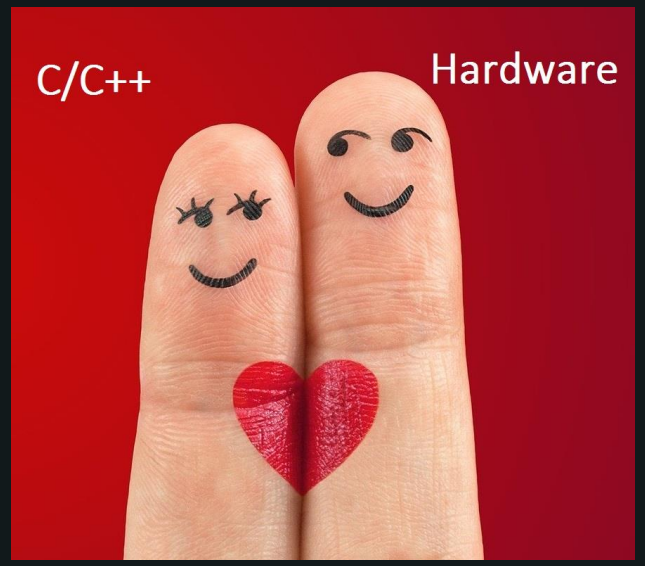
Java Code --> Java Virtual Machine --> OS --> Hardware

C/C++ ------ > Machine Code (OS) -------> Hardware



Reason

VEDINESH

Digital image processing, computer vision, game development, AR/VR etc. use C++ due to its high speed.

- Pubg
- Tekken
- Fortnite

Reason

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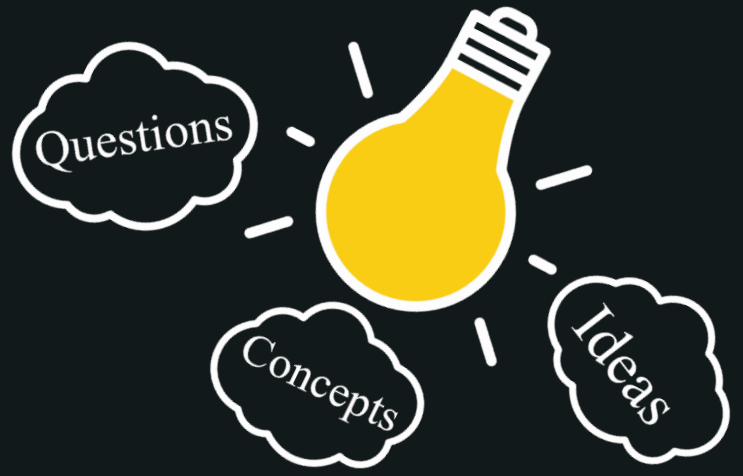
Average base pay of $100, 000 per year (US data).

There is a large online community of C++ users and experts (Help is not far)



What is C++ ?

C++ Programming

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What is C++ ?

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C++ is Extension of C programming language.
(C + Object Oriented Programming)

C++ is a high level language & was developed for general purpose programming .

C ++ is a compiled language.

Bjarne Stroustrup
Bell Labs circa 1980

Why called High Level Language?

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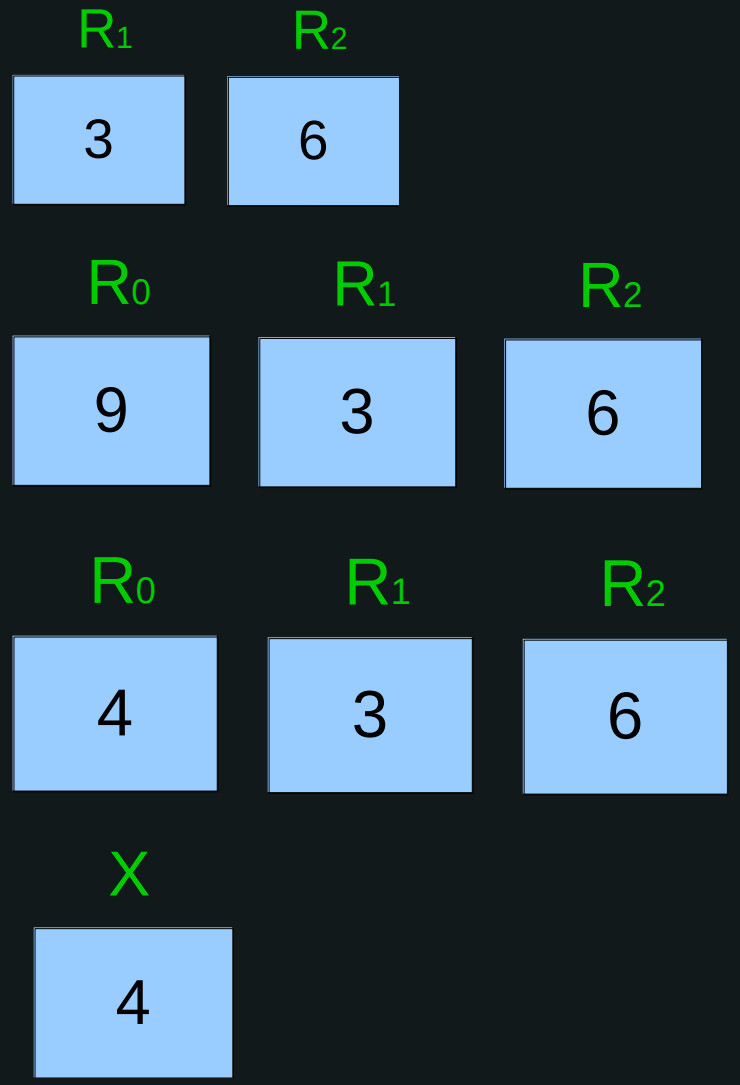
x = 3 + 6 - 5

Pseudo Assemply Code:

loadFromMem (R_1 , 3)
loadFromMem (R_2, 6)

add R_0, R_1, R_2
Sub R_0, R_0, 5

StoreToMem (R_0, 'x')



HLL (C ++) :-
Data Type
Methods/ Function

```
#include<iostream.h>
int x = 0;

x = 3+6-5 ;
cout << x ;
```

Compiled / Interpreted Language ?

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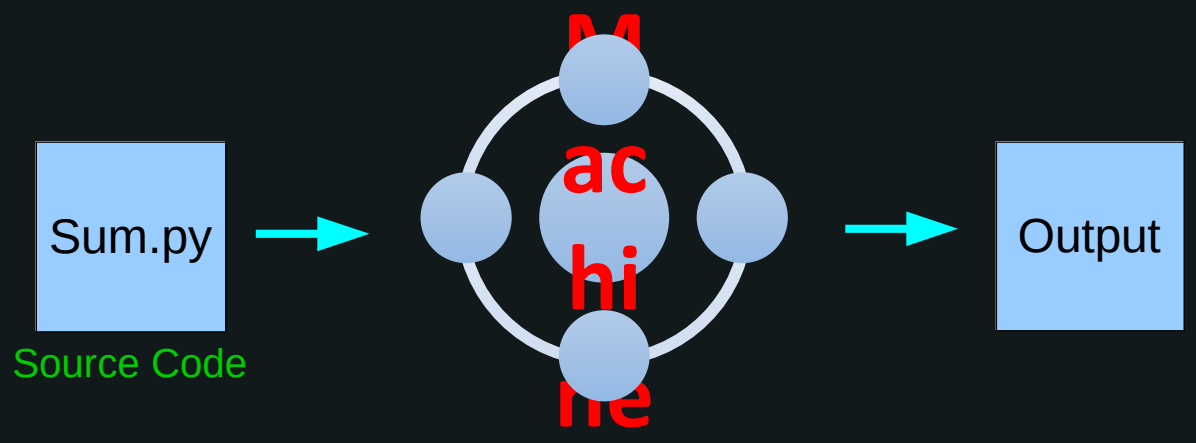
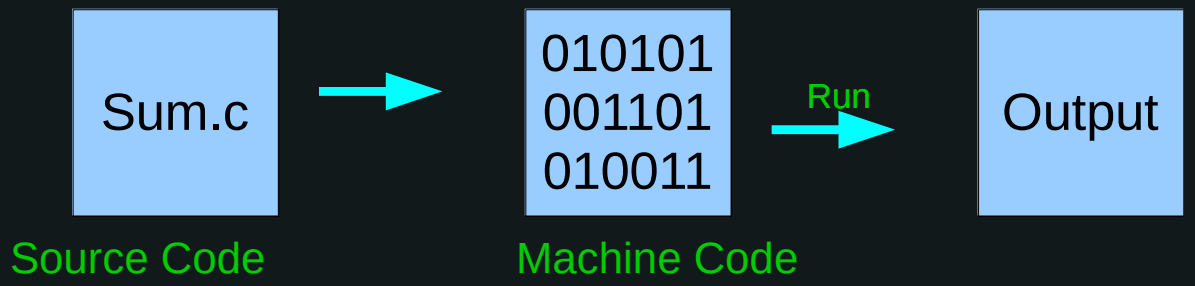


Interpreter will run through a program line by line and execute each command, it is bit slower.



Compiler will convert whole code directly into machine code that the processor can execute, it is faster.

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Mindmap

Compiler And IDE

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code

```
#include<iostream>
using namespace std;

int main( )
    {
        Return 0;
    }
```

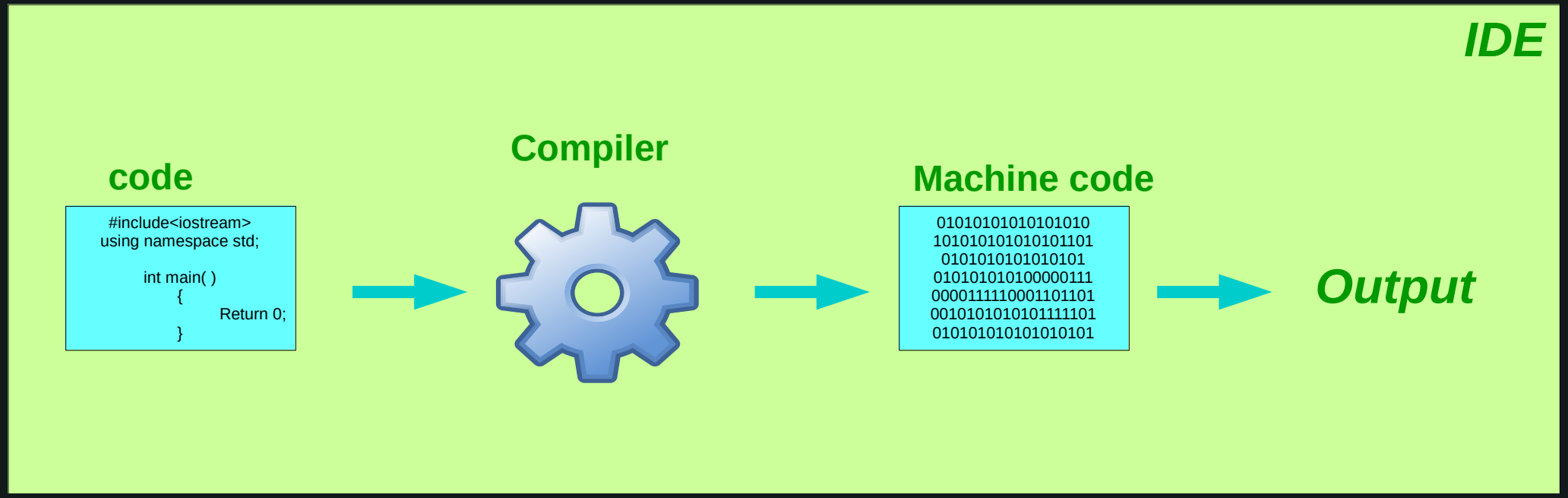
Compiler

Machine code

```
01010101010101010
1010101010101101
0101010101010101
0101010100000111
0000111110001101101
0010101010101111101
0101010101010101
```

Computer

Compiler And IDE



Integrated Development Environment = Code Editor + GCC + Debugger + View Output

GCC = GNU Compiler Collection, Free Software Foundation.