

<https://www.youtube.com/watch?v=18c3MTX0PK0>

1)

C++ is a native language. Unlike Java or Python which interprets language and doesn't generate actual machine instruction and virtual machine is needed to interpret instruction on any machine. C++ generates actual machine instruction and runs directly on machine. It doesn't mean that C++ is always faster because if we write bad code then it might perform slow that Java or Python etc.

https://www.youtube.com/watch?v=SfGuIVzE_Os

5)

```
Std::cout << "Hello world" << std::endl;
```

<< is operator and represents function.

It can be modified as

```
Std::cout.print("Hello world").print(std::endl);
```

Std::endl is newline not a carriage return.

Std::cin.get(); is to get a character.

Compilation to execution is same as in C like pre-processing, all source file compilation, assembler and then linking. Be it a static library, dynamically linked library (.dll), executable file (.exe), or object file (.obj).

<https://www.youtube.com/watch?v=3tlqpEmWMLI>

6)

After pre-processing, compiler processes English like text using tokenizing, pausing, sorting etc. Then it results in abstract syntax tree.

Before compiler, preprocessor processes #include, macros etc. and generates source files for compiler to work on.

Compiler generates assembly file and gives it to assembler.

<https://www.youtube.com/watch?v=H4s55GgAg0I>

7)

After assembler generates object file, linker combines all generated object files into single one.

If we declare function as static, it will remain into that translation unit and no other source file will be able to link it.

If we declare a function without static in header file, then while linking translation unit will get multiple definitions of same function from multiple source files.

https://www.youtube.com/watch?v=zB9RI8_wExo

8)

Int has 32bits->4 bytes. MSB is used for sign bit. So, int data type can store values from 2^{-31} to 2^{31} .

Char, short, long, long long, bool are other data types.

Char text =65 or char text='A' prints A, but short text=65 will print 65.

Bool occupies 1 byte of memory even though it uses 1 bit but lowest addressable memory in 8bit/1byte.

Sizeof(data type) gives size of variable/data type.

<https://www.youtube.com/watch?v=9RJTQmKOYPI>

9)

Pragma is an instruction to compiler for various reasons such as include this file, disable optimization etc.

#include takes <> file from standard location whereas "" takes from exact given location.

<https://www.youtube.com/watch?v=qEgCT87KOfc>

12)

Bool result = x == 5; gives Boolean result. We can confirm through disassembly.

Return 0 is true. Rest false.

If(0) is false. Rest true.

Nullptr is keyword in C++ which replaces NULL.

```
Const char* ptr = nullptr.
```