Python $\longrightarrow$ C++

Java

Ruby

C#

$\rightarrow$ Constructs of C++ $\longrightarrow$
$\Bigg\{$ Variables
loops
conditionals
func" $\Bigg\}$

$\rightarrow$ Compilation process in C++

$\rightarrow$ Memory & pointers $\longrightarrow$ basics
$\rightarrow$ references
$\rightarrow$ smart pointers

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Pre-requisite

→ hands on exp with any 1 prog
lang

→ knowledge of basic programming
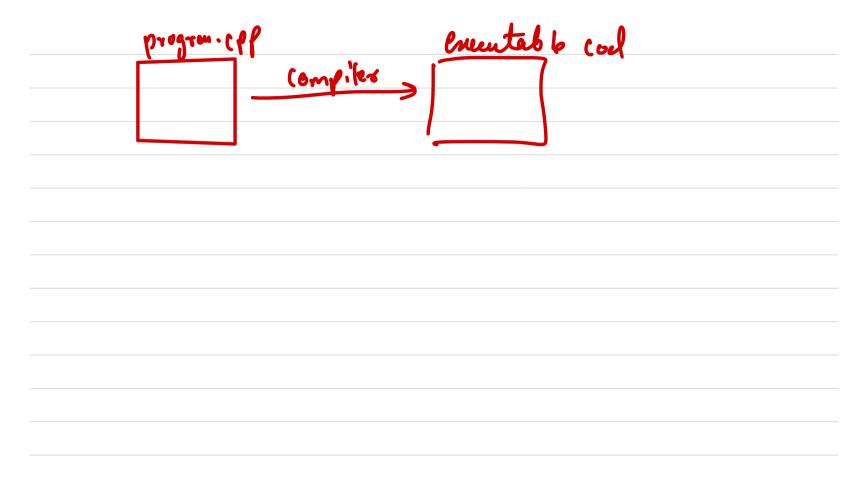construct

→ Problem Solving

Difference in Python & C++

Python → Interpreted

→ platform independent

→ rich open source libraries

→ It is a bit slow

→ Syntactically very easy to learn

C++ → compiled

→ not platform independent

→ but a very strong __STL__

→ quite fast.

→ Syntax is a bit more tricky thn python /only.

program.py

program → not in a running state

Source code

↓ not directly read by machine

execute

compilation step

python compiler → syntax checking

Program → compile → Byte code → → interpreter → machine code

.pyc or
.pyo

intermediate code

pvm

pvm → python virtual machine

program.cpp

Executable code

Compiler →

How to write a C++ code

typical
- ☰ header
- ☰ namespace
- = func^n
- = class/struct
- • main func^n

→ .cpp

LGCD - Codechef

$$lcm(a,b) = 2 \, gcd(a,b)$$

$$lcm(a,b) \times gcd(a,b) = a*b$$

$$\rightarrow \quad a*b = 2 \, gcd(a,b) * grd(a,b)$$

$$a = m * grd(a,b) \quad \text{—} \quad ①$$

$$b = n * grd(a,b) \quad \text{—} \quad ②$$

$m \rightarrow$ constant

$$\frac{6, 15}{} \rightarrow 3$$

$$6 = 2 \cdot 3$$
$$15 = 5 \cdot 3$$

multiply ① & ②

$$ab = mn \ \gcd(a,b) \ \gcd(a,b)$$

$$\boxed{m \times n = 2}$$

$$\longrightarrow m=1 \quad , n=2 \quad \Big\}$$

$$\longrightarrow m=2 \quad , n=1 \quad \Big\}$$

$$\text{Divide} = \text{①} \; / \; \text{②}$$

$$\frac{a}{b} = \frac{m}{n}$$

$$\frac{a}{b} = 2 \qquad\qquad or \qquad \frac{a}{b} = \frac{1}{2}$$

$$\boxed{a = 2b} \qquad or \qquad \boxed{b = 2a}$$

Hash Map
↓
Dict
↓
unordered-map

1, 2, 4, 4

(1,2)
(2,4)
(2,4) } ③

no.	freq
1	1
2	1
4	2