

"समय न लगाएँ इसमें कि क्या करना है,  
वरना समय ये तय करेगा कि आपका क्या करना है।"



# Beyond the Basics

## DSA LAUNCH PAD WITH CPP



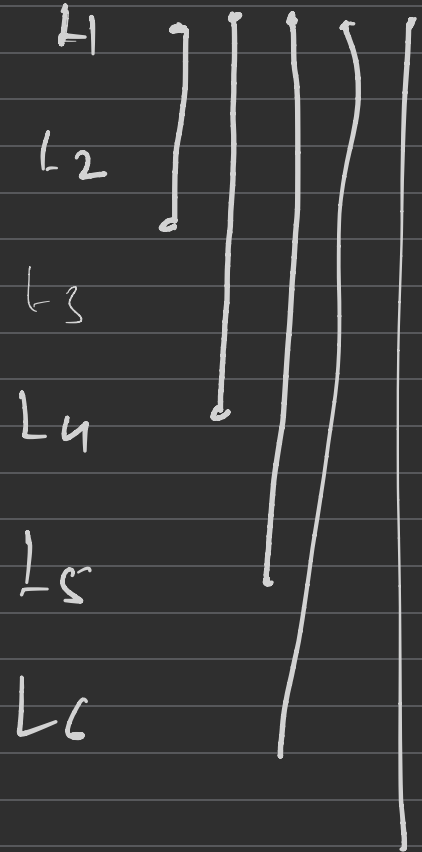
# Welcome & Vision

*Why you started this course.*

*"I don't just want you to learn coding....."*

*Don't Mug up – You are Engineer*

*Change Studying methods*



# Course Roadmap

Roadmap

CPP → ODPs → STL →

DSA

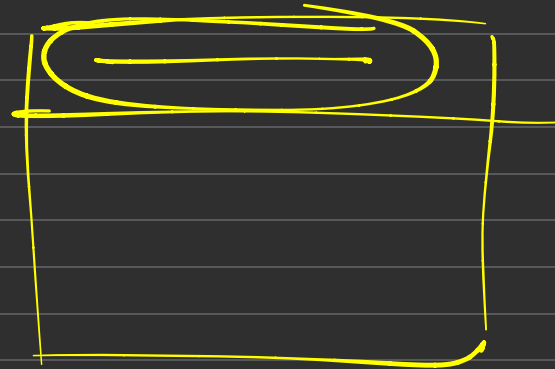
A  
I  
Pattern

120%

HomeWork Problems

Class Code

Notes



Where they'll stand after completing the course.

- Present (solo)
- GP / Profit

7-8

80 (10%)

10

1 1/2

How to Revise

My Expectation and Your Expectations

# Let's Start the CPP 🏆

## What is Programming ?

Programming means giving instructions to a computer to do something for us.

## What is C++ Programming ?

# PROGRAMMING LANGUAGES AND THEIR USES

## PYTHON

- 1) Data Science ✓
- 2) Machine Learning ✓
- 3) Web Development ✓
- 4) Automation ✓
- 5) Game Development ✓
- 6) Data analysis ✓
- 7) Data visualization ✓
- 8) Artificial intelligence ✓

## JAVA

- 1) Android Apps ✓
- 2) Server-Side Apps ✓
- 3) Enterprise Apps ✓
- 4) Web Based Apps ✓
- 5) Big data ✓
- 6) Game Development ✓
- 7) Internet of things ✓
- 8) Cloud computing ✓

## C++

- 1) Games Development ✓
- 2) GUI Apps ✓
- 3) OS ✓
- 4) Database Systems ✓
- 5) Embedded ✓
- 6) Networking ✓
- 7) Virtual Reality ✓
- 8) Computer Vision ✓

## JAVASCRIPT

- 1) Server-side Dev
- 2) Web Dev and Apps
- 3) Mobile Apps
- 4) Machine Learning
- 5) IoT
- 6) Automation
- 7) Embedded system
- 8) Chatbot Development

## SWIFT

- 1) IOS App Dev
- 2) Deep Learning
- 3) IOT
- 4) Server-side Dev
- 5) Open-source Dev
- 6) MacOS App Dev
- 7) Machine Learning
- 8) Automation

## C#

- 1) Games Development
- 2) Web Dev and Apps
- 3) IOT
- 4) Backend Services
- 5) Windows App Dev
- 6) Robotics
- 7) Cloud computing
- 8) Database program

# Structure of C++ Programming

Contain

Mem
Ans
Var H

```
#include <iostream>
```

Header

```
using namespace std;
```

Namespace

```
int main(){
```

Function

```
    return 0;
```

Return

```
}
```

Execute  
start of  
program

int x  
int 1

```
void sum()  
{  
    cin >>  
    cin >>  
}
```

```
cout <<  
cout <<
```

Error  
variable  
undeclared

```
main()  
{  
    int x = 10
```

```
    printf(x)  
    sum()  
}
```

```
scanf)
```

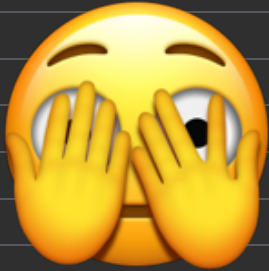
10

```
    cin >>  
    cout <<
```



## Writing First “Hello World” Program

*How to Print ?*



We have printf().... Then What is this cout << 🤔

cout → Used to print (output) something on the screen.

```
cout << "Print the Message";  
  1    2
```

What the heck << is .....

<< → Is called as Insertion Operator, also called as left shift operator.

It is mainly used with cout to send data to the output (screen).

## What is namespace

Namespace is like a special container that holds a group of names - like variables, functions, or classes - to avoid confusion when we have the same name used in different parts of the program.

```
#include <iostream>

using namespace std;

int main(){

    return 0;

}
```

## *Behind the Scenes*

*What exactly happens when we compile the code and run the code.*

*Stuff you never taught by anyone*



Human language

.cpp

(Source Code)



Expanded Source Code

.i



Compiler



Asembler

.s or .asm



Object File

.o

(Linker)



Executable File

.out or .exe

2 in 1 {

# *Variables & Data Types*

*What is Variable*

*How to give names to the variables*



## Taking Input from User

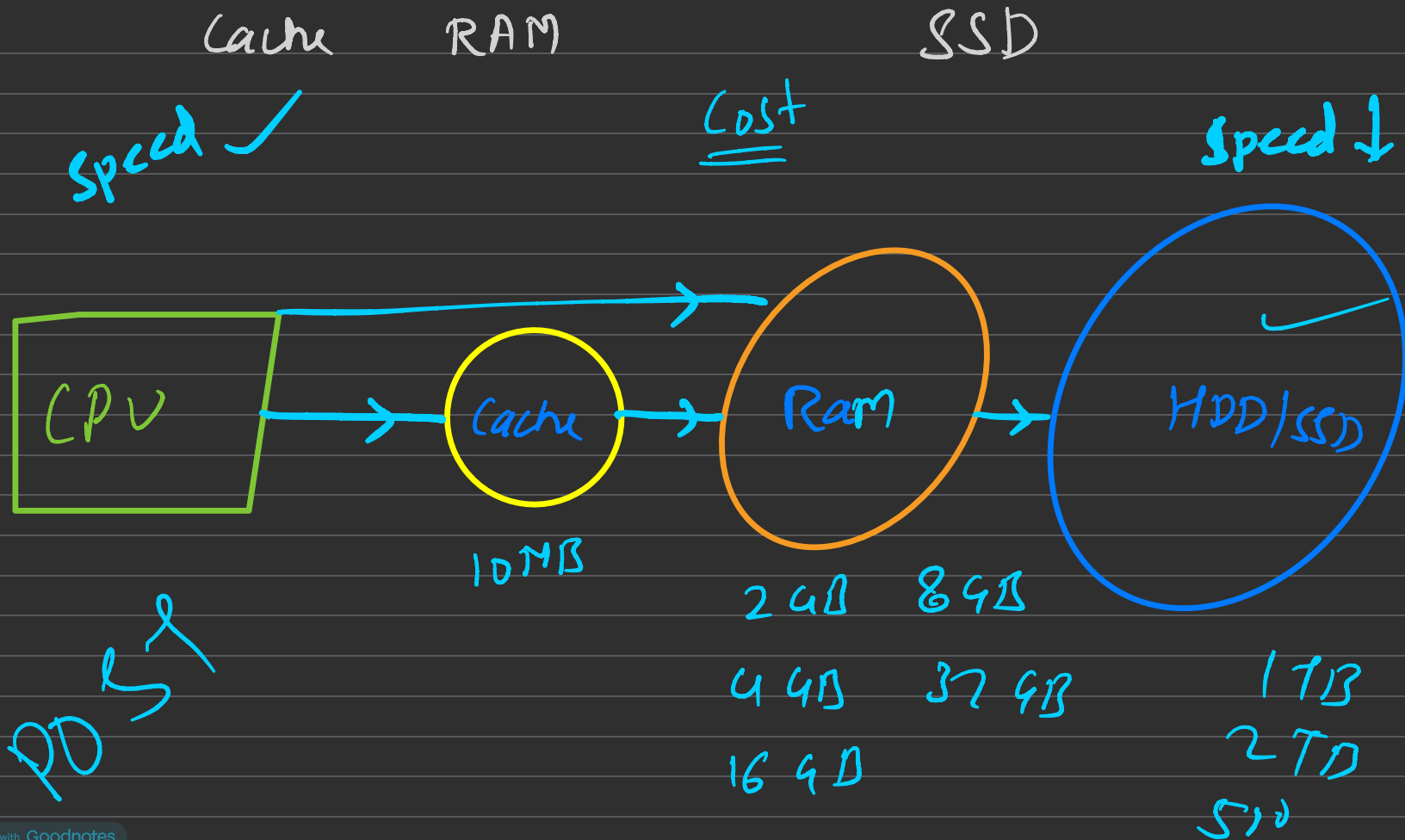
`cin` → Used to take input – something from user.

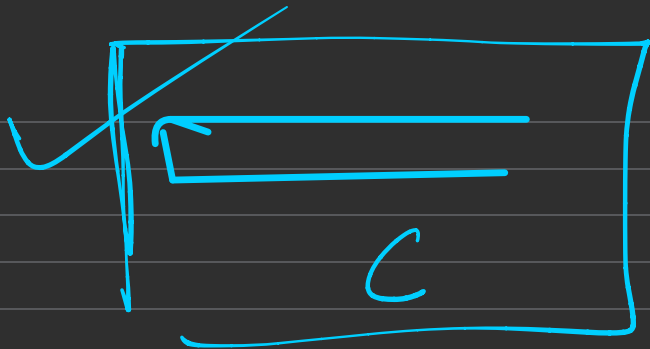
What the heck `>>` is .....

`>>` → Is called as Extraction Operator, also called as right shift operator.

It is mainly used with `cin` to take input from the user.







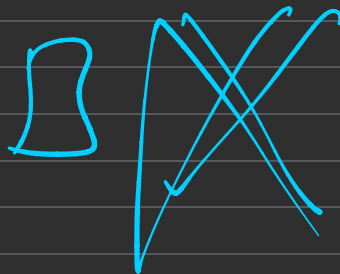
E



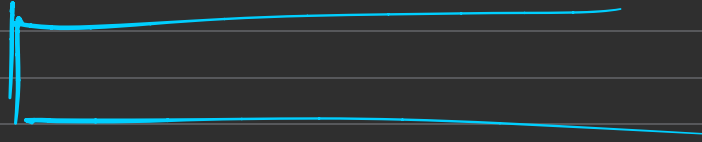
D

floppy disk

A



CD



C Drive → By default

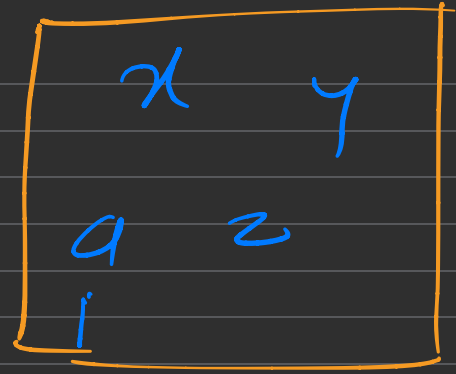
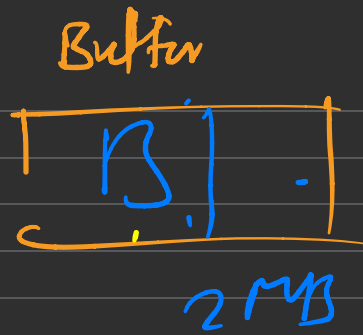
- install → C

- O.S → C

E

D

F



MM (Ram)

int  $x = 10 = 4B$

$a \rightarrow 5 MB$

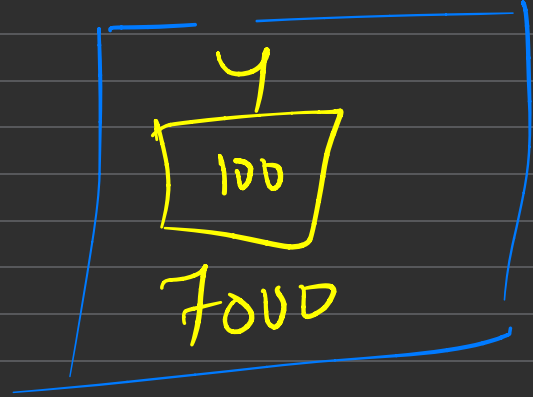
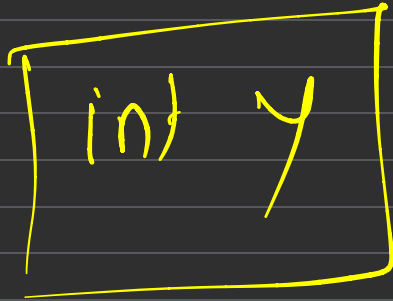
$B \rightarrow 8 MB$

temp = a

a = b

b = temp

garbage  
value



Ram

2/

Probk	diff	Exp
<u>                    </u>	M	<div></div>