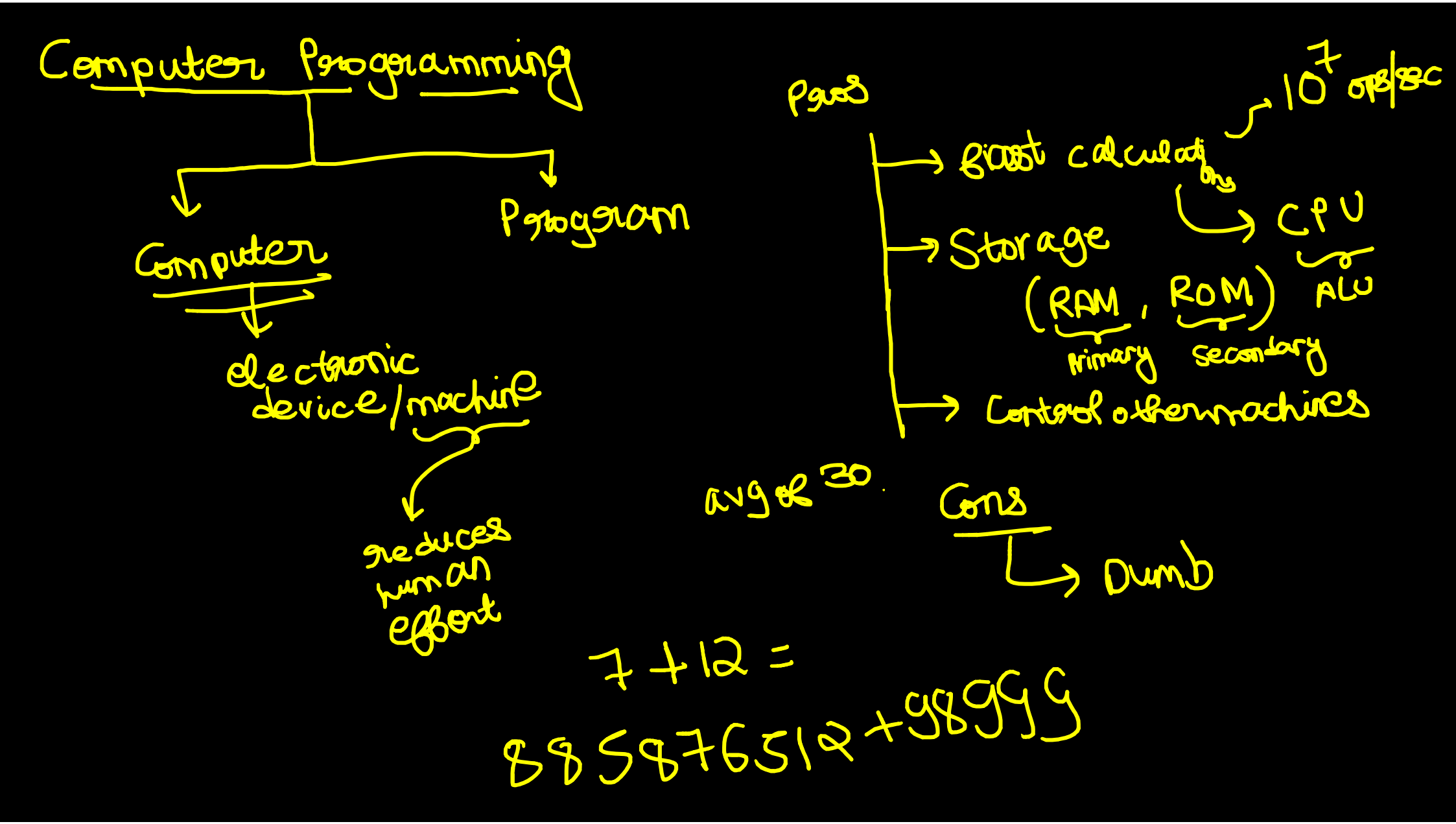
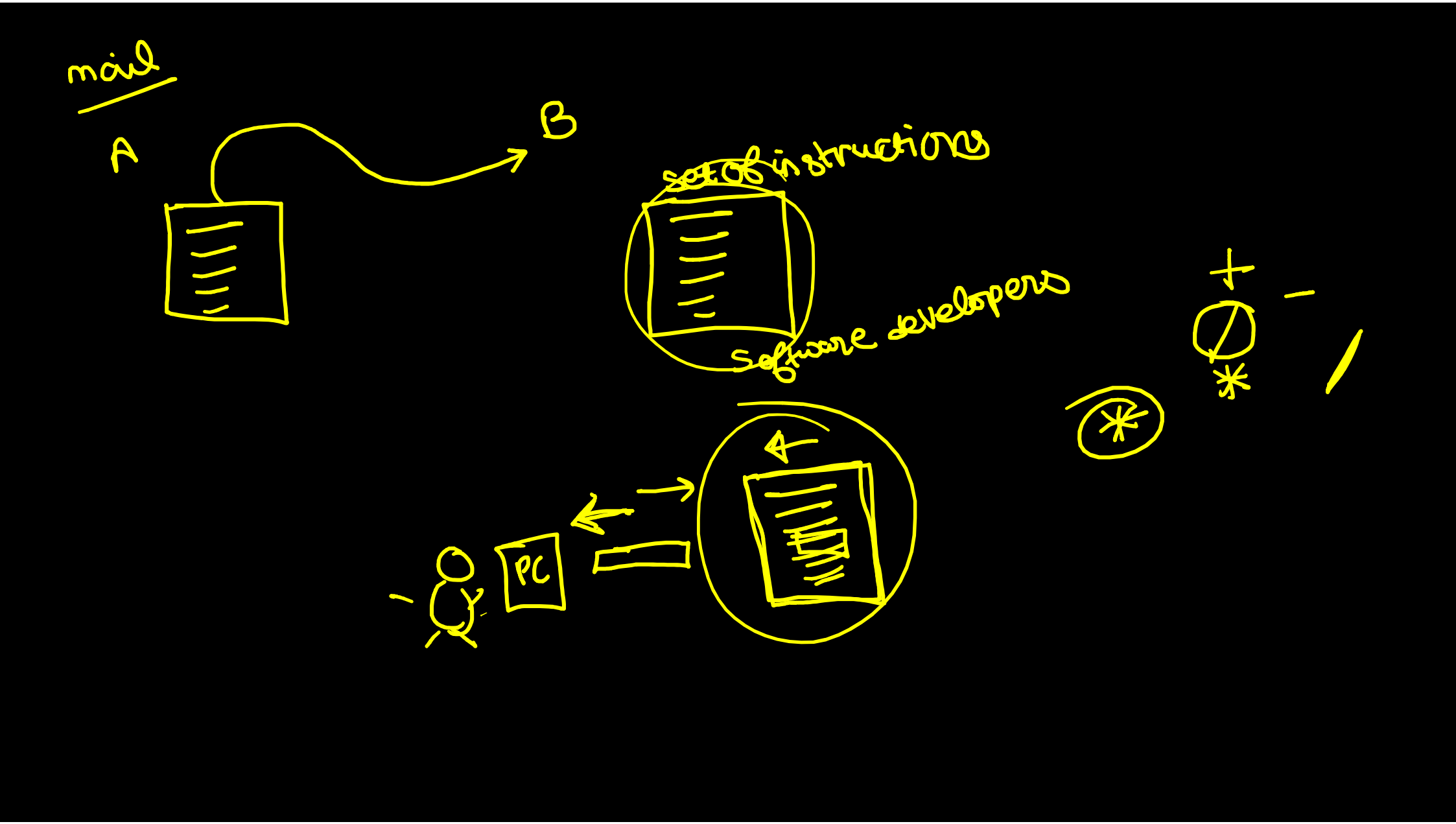

Computer Programming
Computer
Program
electronic device/machine
reduces human effort
Pros
Boost calculations
10^7 ops/sec
CPU
ALU
Storage
(RAM, ROM)
primary
secondary
Control other machines
avg of 30.
Cons
Dumb
7 + 12 =
8858765129 + 98999


mail
A
B
set of instructions
software developers
PC

set of instructions which tells the computer what to do

Algorithm

avg of 30 nos

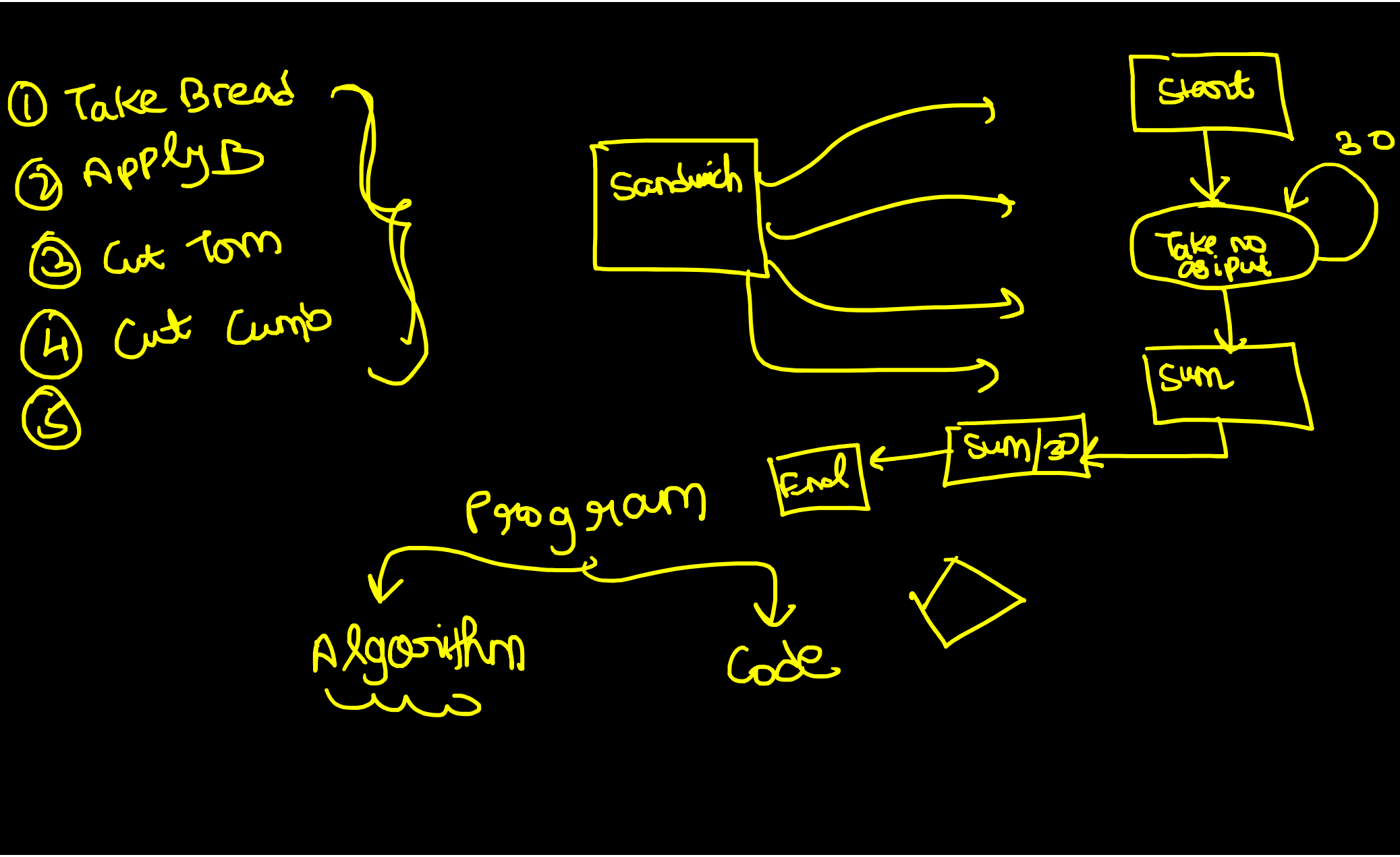
{sum = 90 + 78 + 35+

sum/30 }

logic

Sandwich

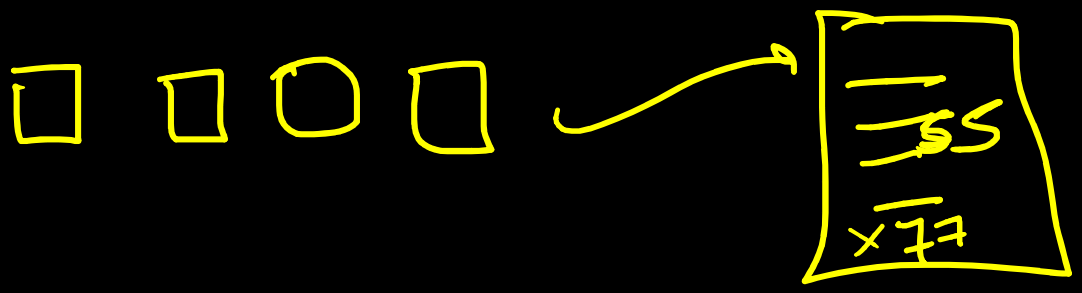
V.I


1 Take Bread
2 Apply B
3 Cut Tom
4 Cut Cumb
5
Sandwich
Start
30
Take no as input
Sum
Sum/30
End
Program
Algorithm
Code

Java

1. Secure (OOP)
2. Fast
3. Platform Independent

Components of Computer Program



55

77

Variables

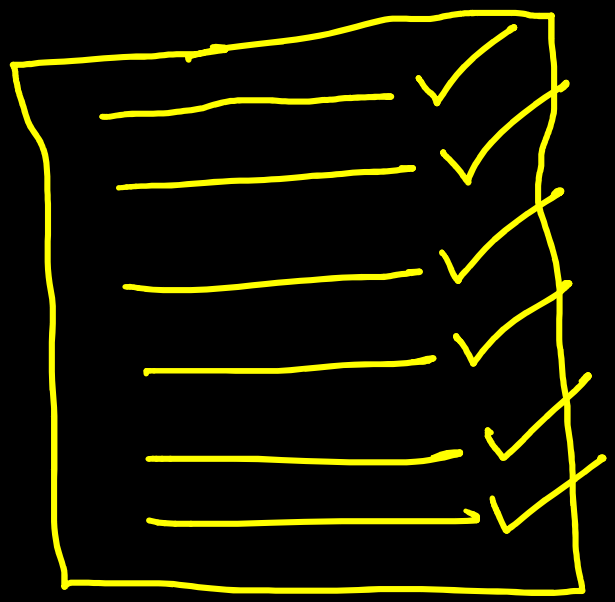
$$f(x) = x^2 + 2x + 5$$

$x = 5$

① Variables —contain→ data

$x = 5$

② Algorithm



Sequential Execution

supermarket

80% → 10 apples

20% → 4 apples

20%

→ condit

1 → 2 → 3 → 4

80%

③ Control Flow / Control Blocks

→ Conditionals

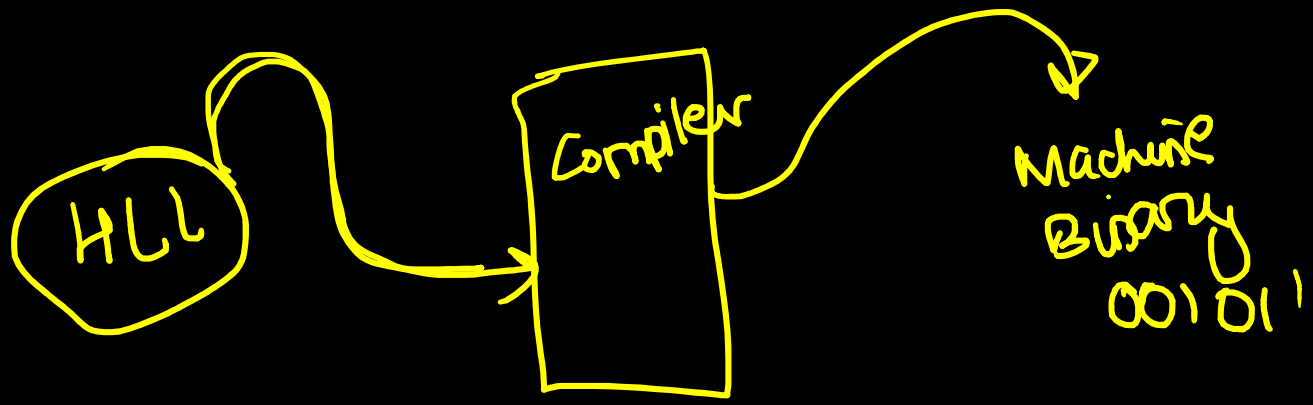
→ Loops

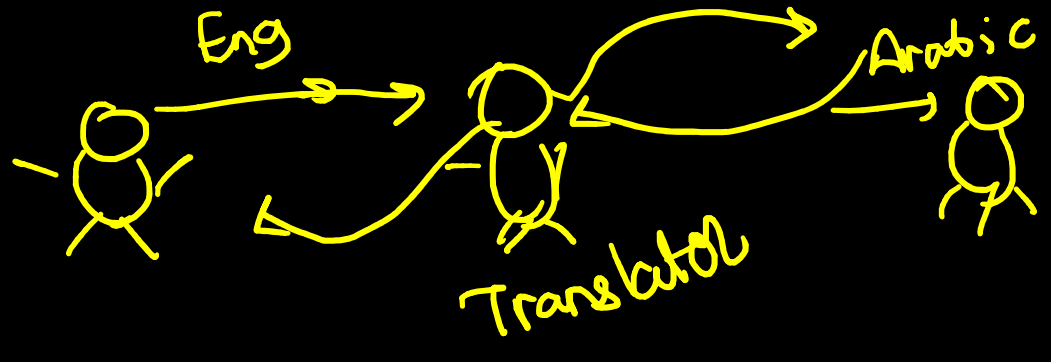
→ 20 times

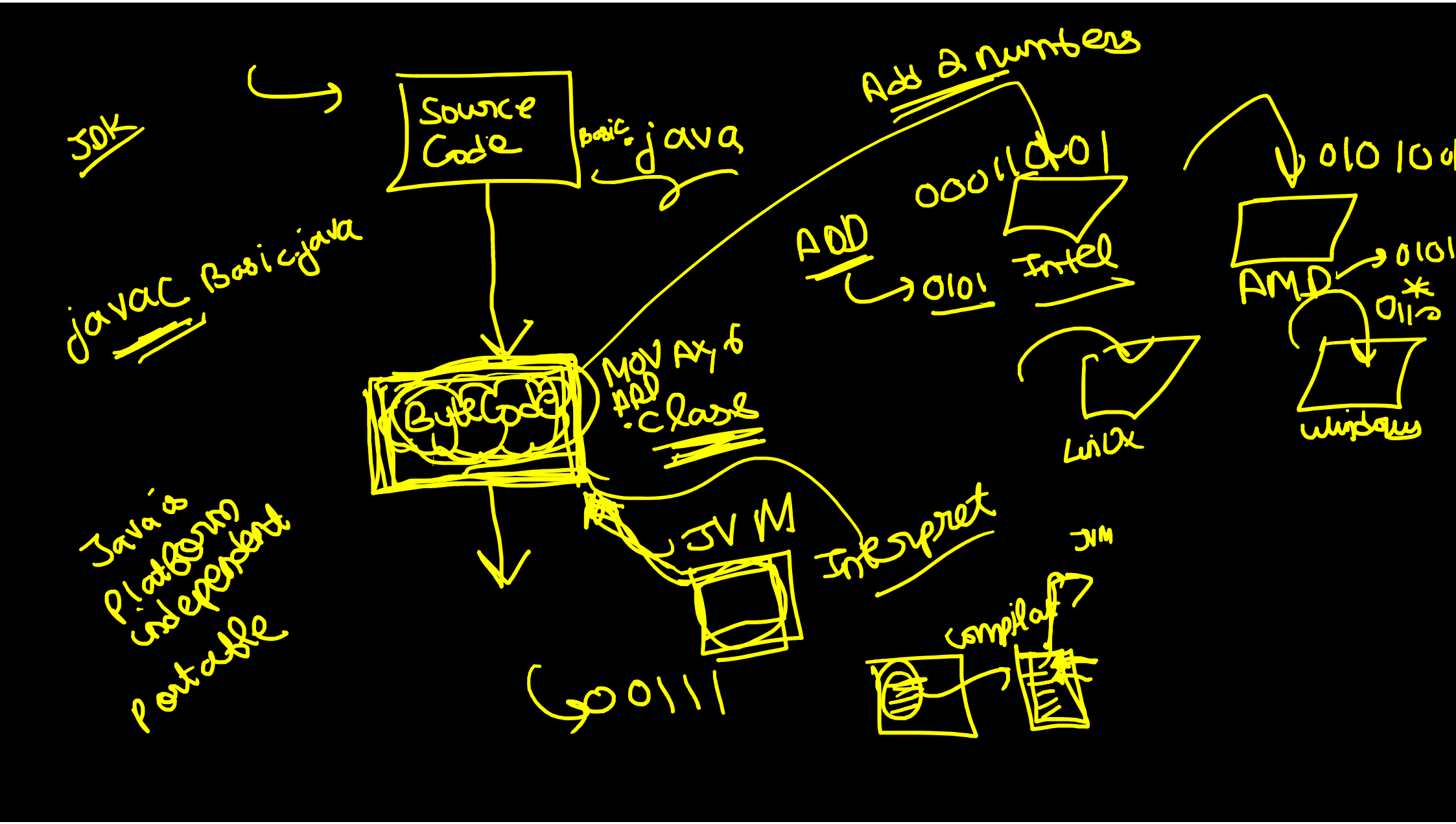
HLL → High Level Languages

00110111
Binary Code

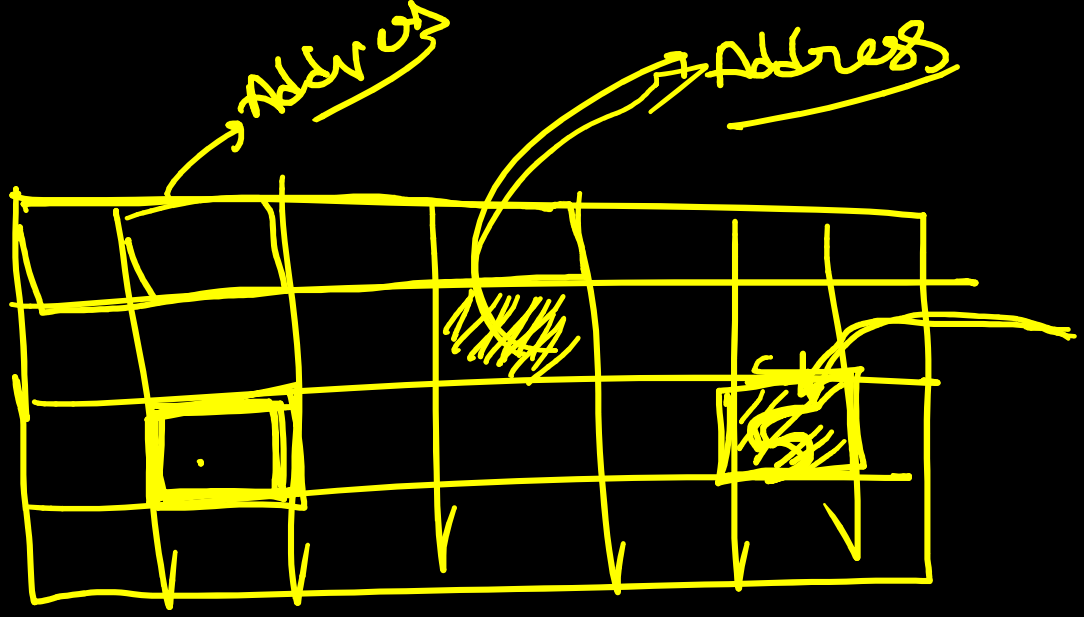
Java,
C++,
Python,
Go






JDK
Source Code
Basic.java
javac Basic.java
ByteCode
MOV AX, 6
ADD
Class
JVM
Interpret
Java is Platform Independent Portable
Add 2 numbers
ADD
0101
Intel
Linux
AMD
Windows
compiler
JVM

RAM



@ = 5

a

Binary Digit

bits

5bits

0 1 1 1 1

- [ ] [ ]

4 inches

8 inches

4bb 8bits → Byte

KB
MB
GB

Integers → 4 Byts

Characters → 2 Byts

Integers
Decimal
Characters

byte → 8bits

short → 2 Bytes

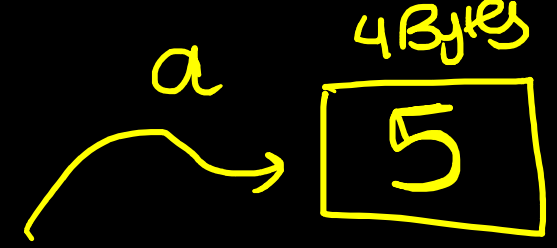
int → 4 Bytes

long → 8 Bytes

Declaration and Initialisation

```
int a = 5;
```

int → datatype, a → variable, 5 → value



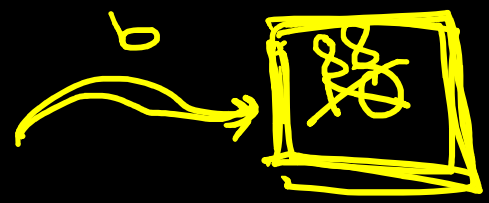

```
int b;
b = 47;
```

Declaration + Initialisation

```
int b;
```

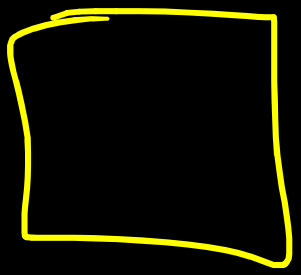
Declaration

```
b = 10;
```




```
b = 88;
```

int a;

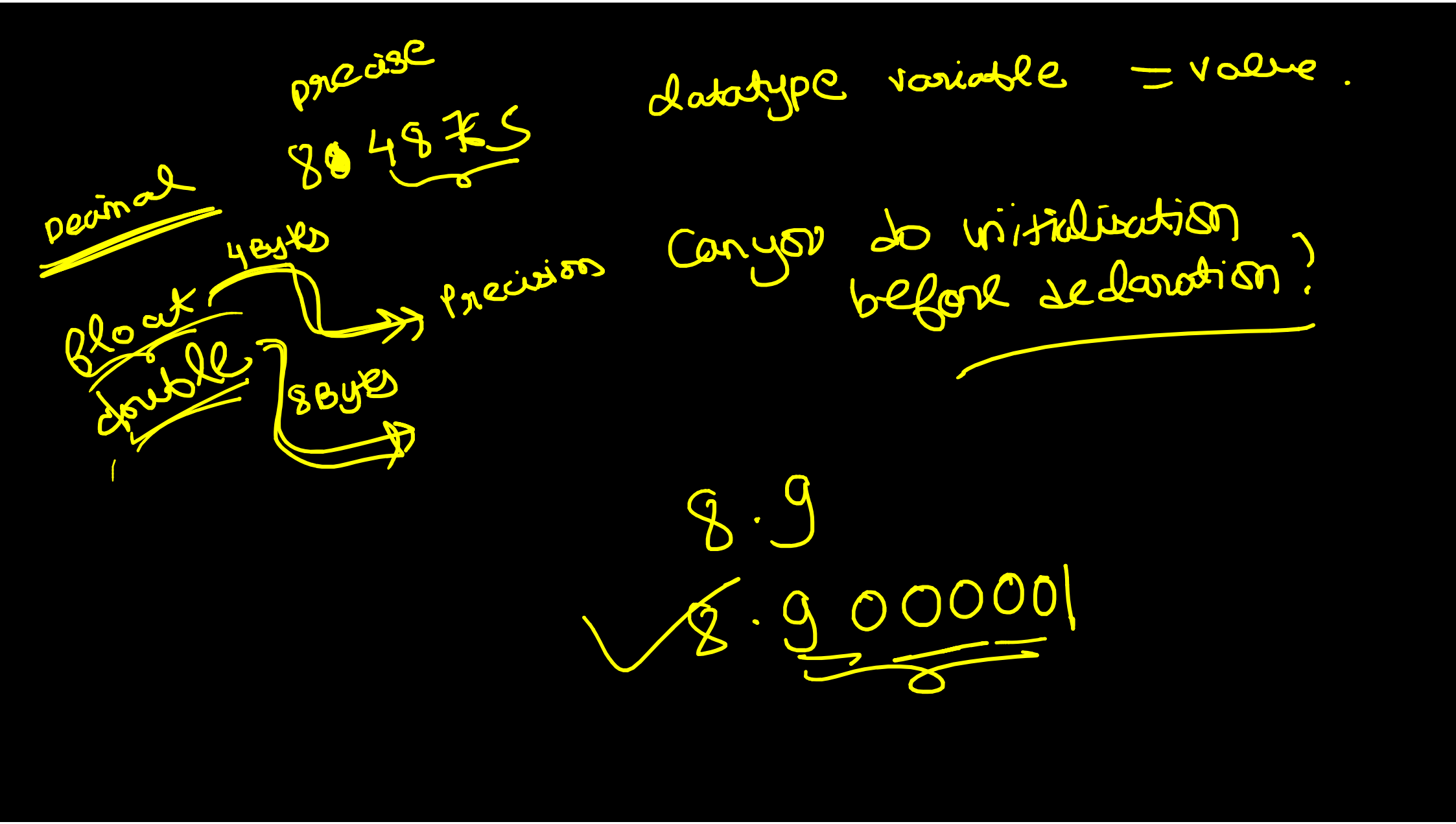


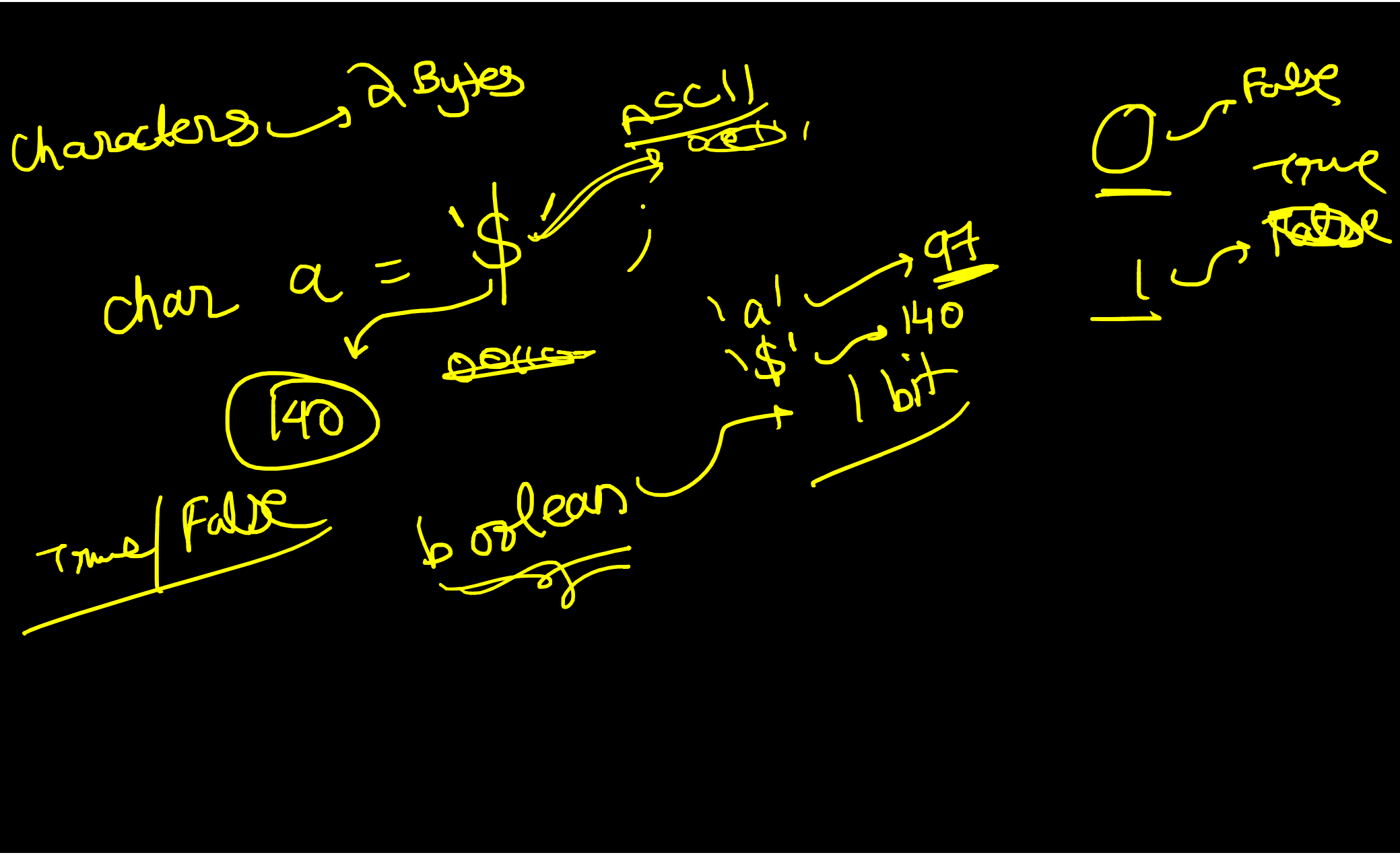
-2^{31} to $2^{31}-1$

long

int a = 5;

int a;
a = 5;


precise
80 48 KS
datatype variable = value.
decimal
float
4bytes
precision
double
8bytes
Can you do initialisation before declaration?
8.9
8.900001


Characters → 2 Bytes
ASCII
char a = '$';
140
True / False
boolean
'a' → 97
'$' → 140
1 bit
0 → False
1 → True