

Flowcharts

- * Agenda → understand the process flow of how computers understand instruction
- explore what are variables
- Basic understanding around flowcharts

Because computers understand 0 & 1 ✓

→ We will give instructions for performing various tasks ✓✓

URL → type → click → adjust → cyon

Q How to make tea ?? ✓

1 cup ✗

4 cups

→ mix milk
add sugar
add tea
add water
Tea is done

for how many cups we want
to add how much sugar/milk/tea
We don't know, how long to boil

2
n cups

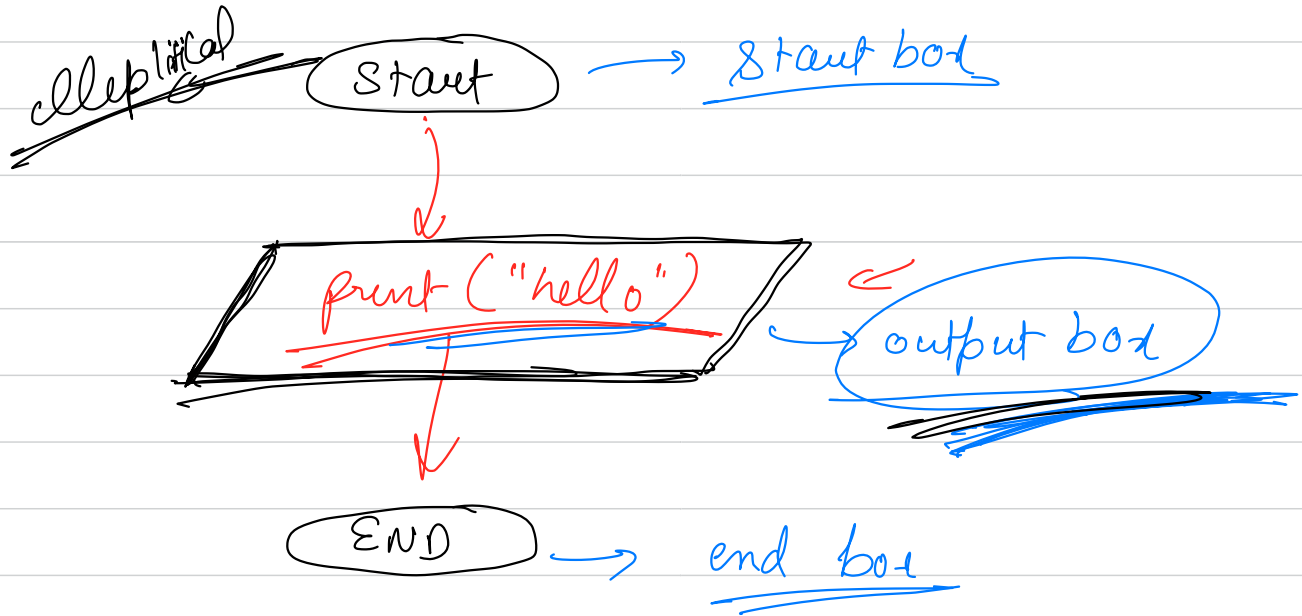
Our instructions should be generic and should
consider all the given constraints ✓
→ general solution

Programmer tells the steps of the recipe (Algorithm)
& computer performs the steps

Algorithm \rightarrow A process or set of rules ^{and constraints} to be followed in calculations or any problem solving by a computer.

lets make a structure of what computers think if we want to print a word.

flow



flowcharts shows the flow of instruction inside a computer. These are pictorial representation of how computers will be reading set of instructions

Start box → It tells that computer is ready & will
execute your instructions start

End box → System has no more instructions to execute
& process will terminate. END

Output box → whenever something needs to be displayed

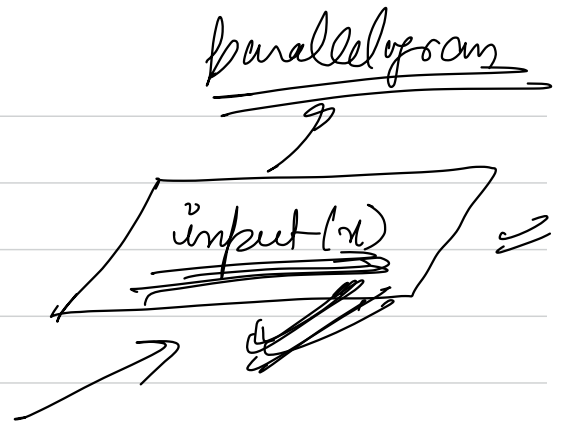
print() → we use this print statement to signify

display / output

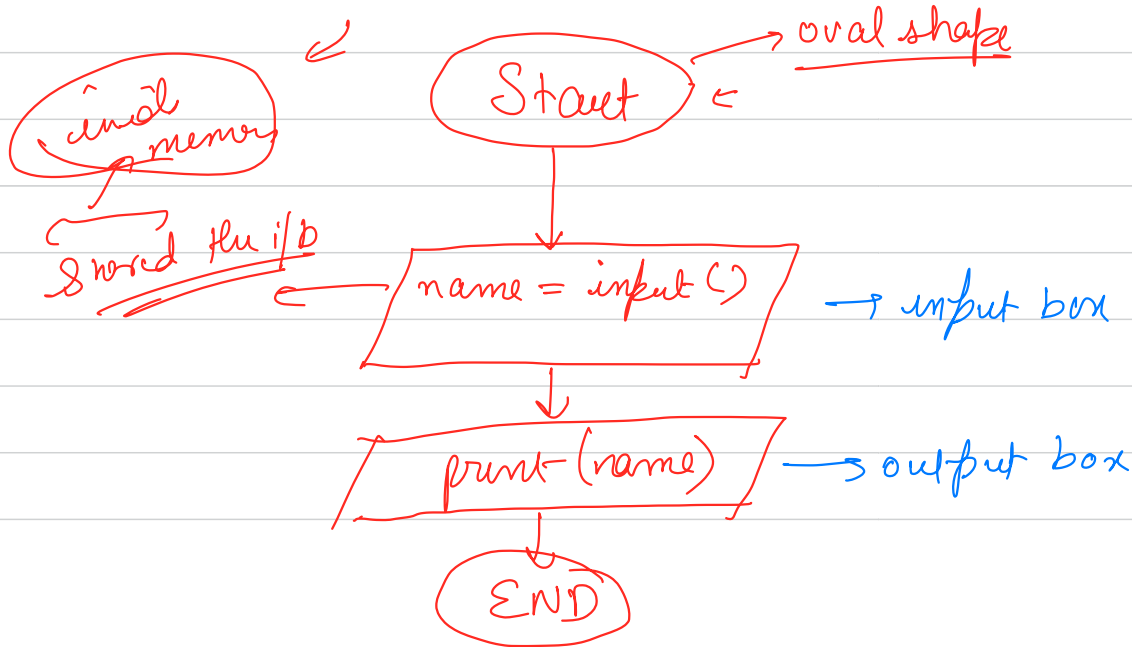
Symbolism

input()

Input box → to take inputs
✓



Q.7 Draw a flowchart, to print a name which will be given input to you by a user.

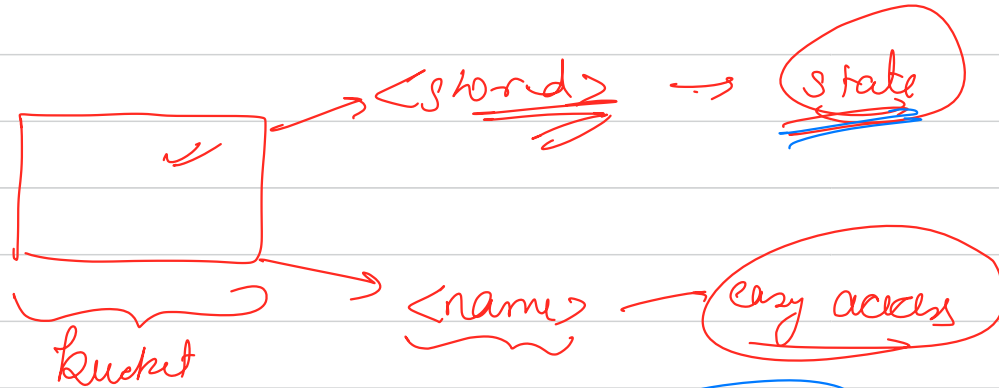


a square
b rectangle
c parallelogram
d ray

You are allocated some memory (RAM). Inside this memory we store all the relevant information required for our program.

name = "Sanket"

Variables → These are symbols which functions as a placeholder for different quantities - in memory



variable

Let $x = 10$

$x = 16$

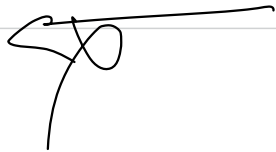
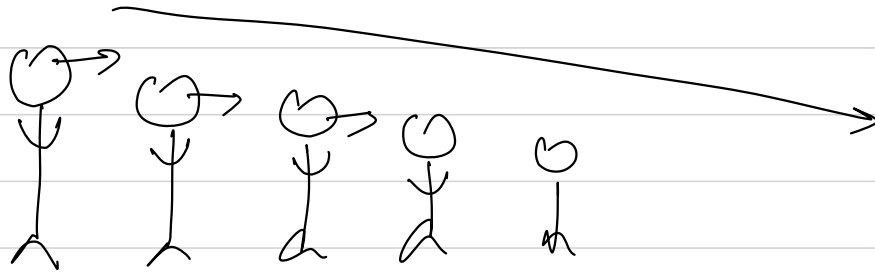
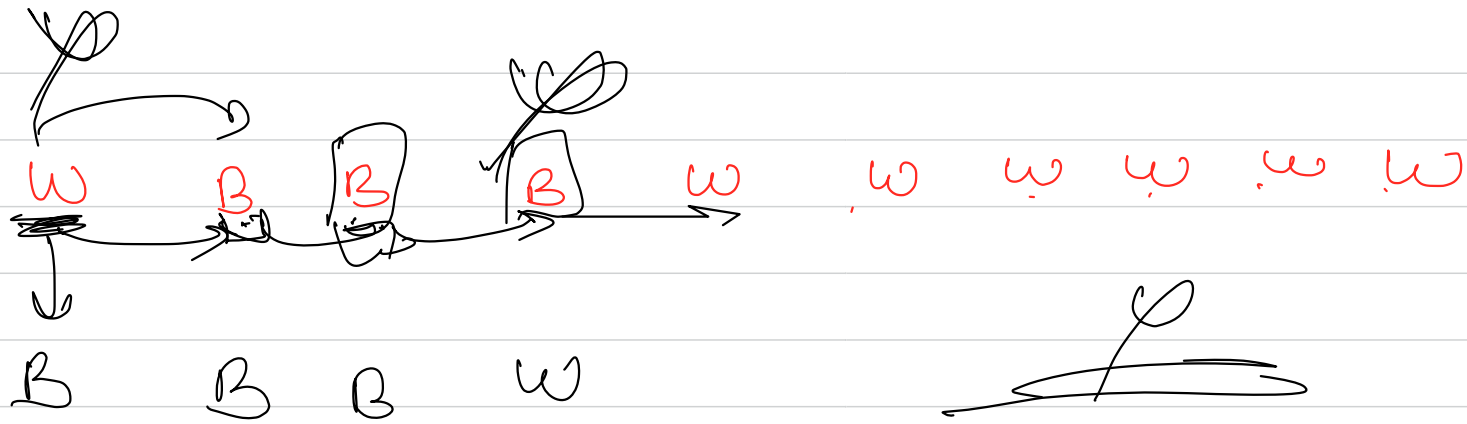
label
← name → = new-value

→ for using variables in print command we don't use " "

→ for printing and storing any texts use " "

Puzzle → There are 10 people who have been captured & they will be killed soon. There is one way they can save themselves. They all will be arranged in decreasing order of height. Any person can only look forward. Everyone has been given a hat (black/white) assigned randomly. They don't know the

count of each. Everyone needs to guess the color of hat and only one person can say the wrong ans. That distribution will be unequal.



10 people

Black / white

1 person can say
wrong

called

Black

white

black

W

W

B

B

W

W

W

W

W

W

B

Smaller

odd

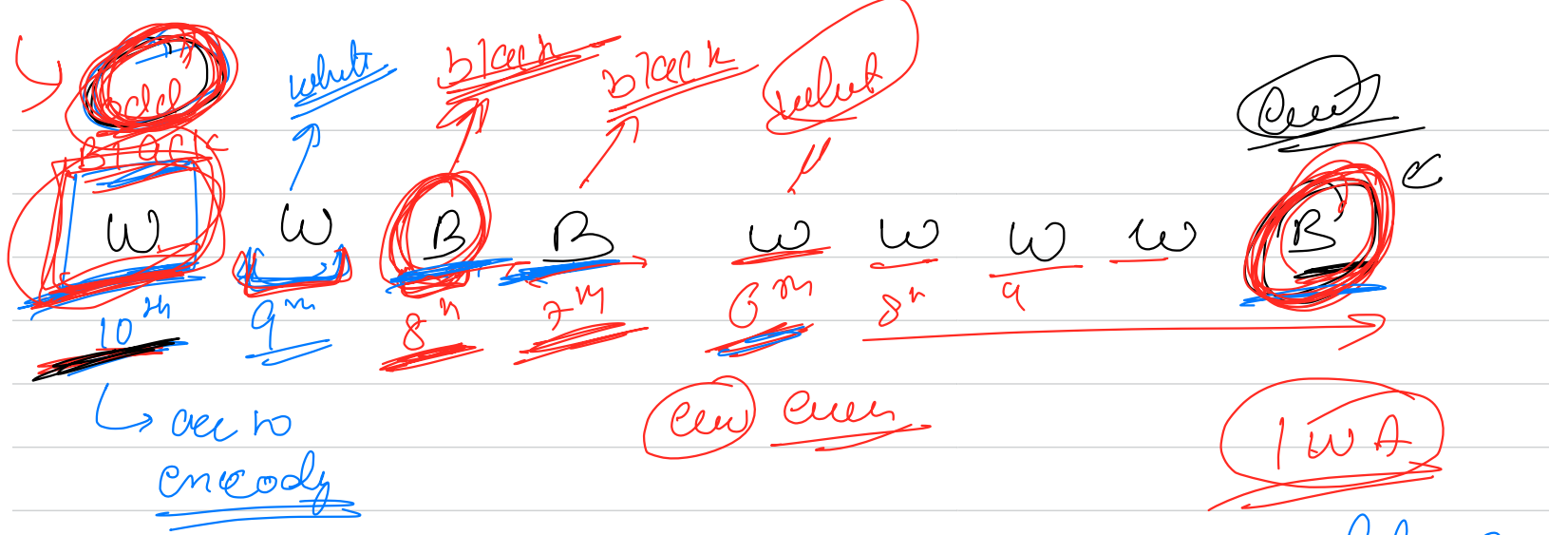
1 W#

Can
guys
say
but

Encode → Black

white

Last person → black → he sees odd no. of black hat
→ white → he sees even no of black hat



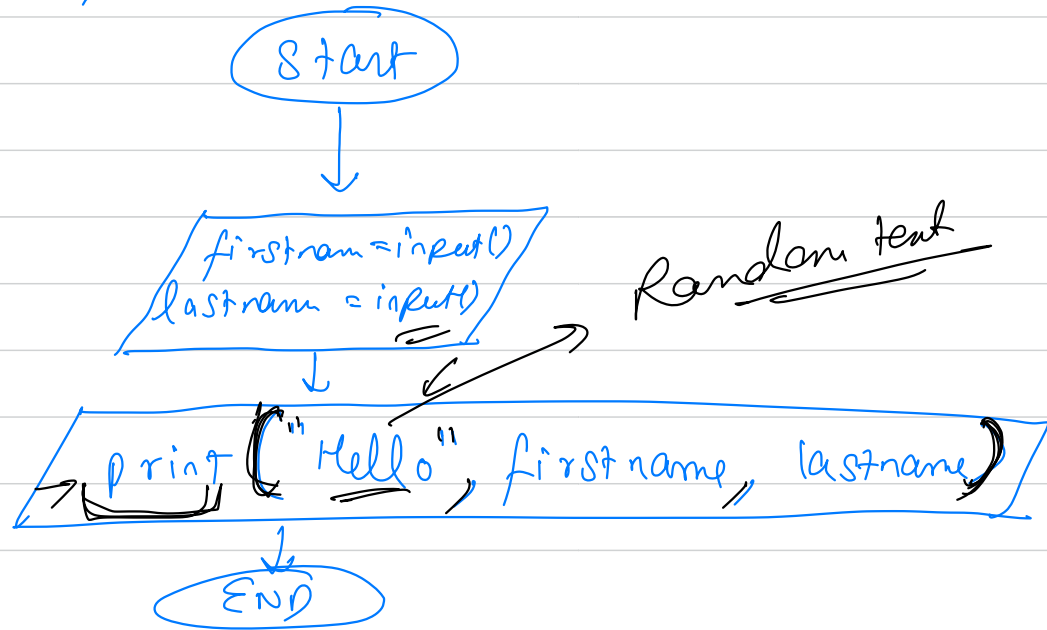
Black → sees → odd black
 White → sees → even black

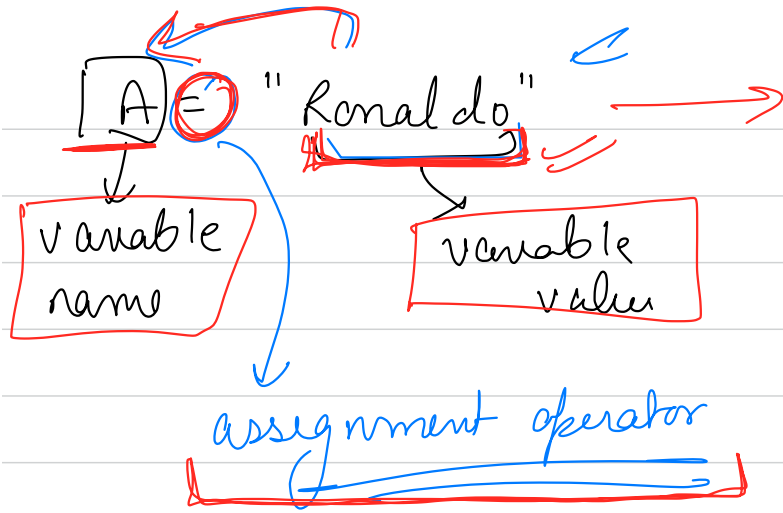
odd - 2
odd
 2 - 2

if black is said by 10^{th} guy, he sees odd hats
by black color

now if 9^{th} guy is also seeing, odd hats one
his own color is white?

Q2 user will give first name, last name as input
then print Hello <first name> <last name>





whenever is present in between double quotes are placeholder symbols

→ It is assigning some value

Using an assignment operator, we are initializing the variable A.

temp =
↓
variable
name

temp

value

temp

number

No

B = 7 → number

B = "7" → text

\$! @ # ...

Rules to define variable name

- Start of variable name will be always alphabet.
- You can use no. in your variable names, but not in the start.
- Variable names are case sensitive

author = 7

Author = "xyz"

-temp

different

→ In special symbols → underscore

-temp
sanket_singh

