Char Arrays & Strings - Class I

Special class

Love Babbar • Feb 25, 2023

Char Arrays

char ch[10];

char → 1 byte

-128 → 127

$-2^7 \rightarrow 2^7 - 1$

$0 \rightarrow 2^8 - 1$

int arr[10];

integer

int x = 'a';

'a' → ASCII value

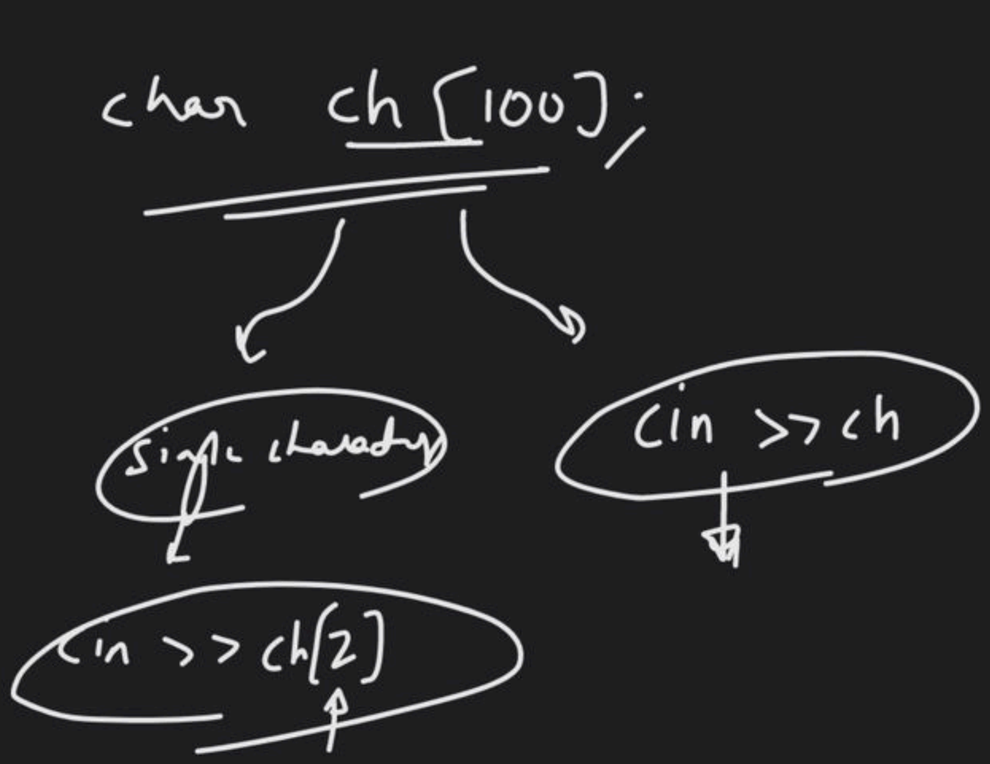
'a' 'b' 'c' - - - 'z'

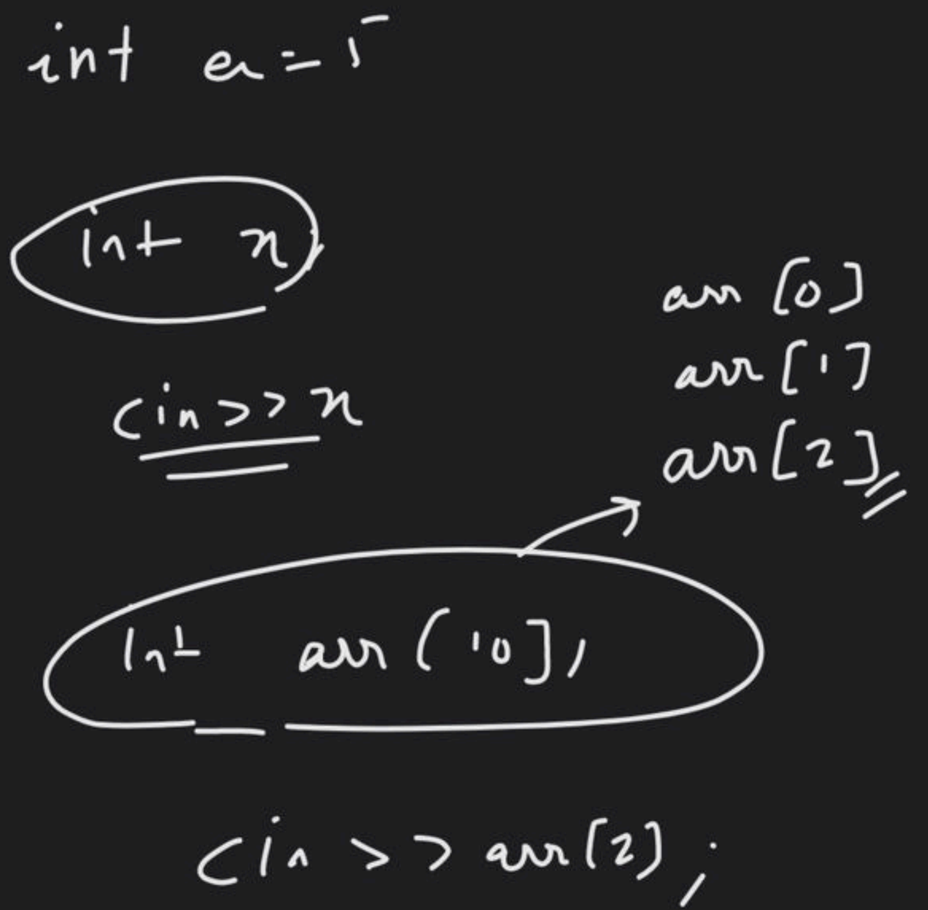
'A' 'B' 'C' - - - 'Z'

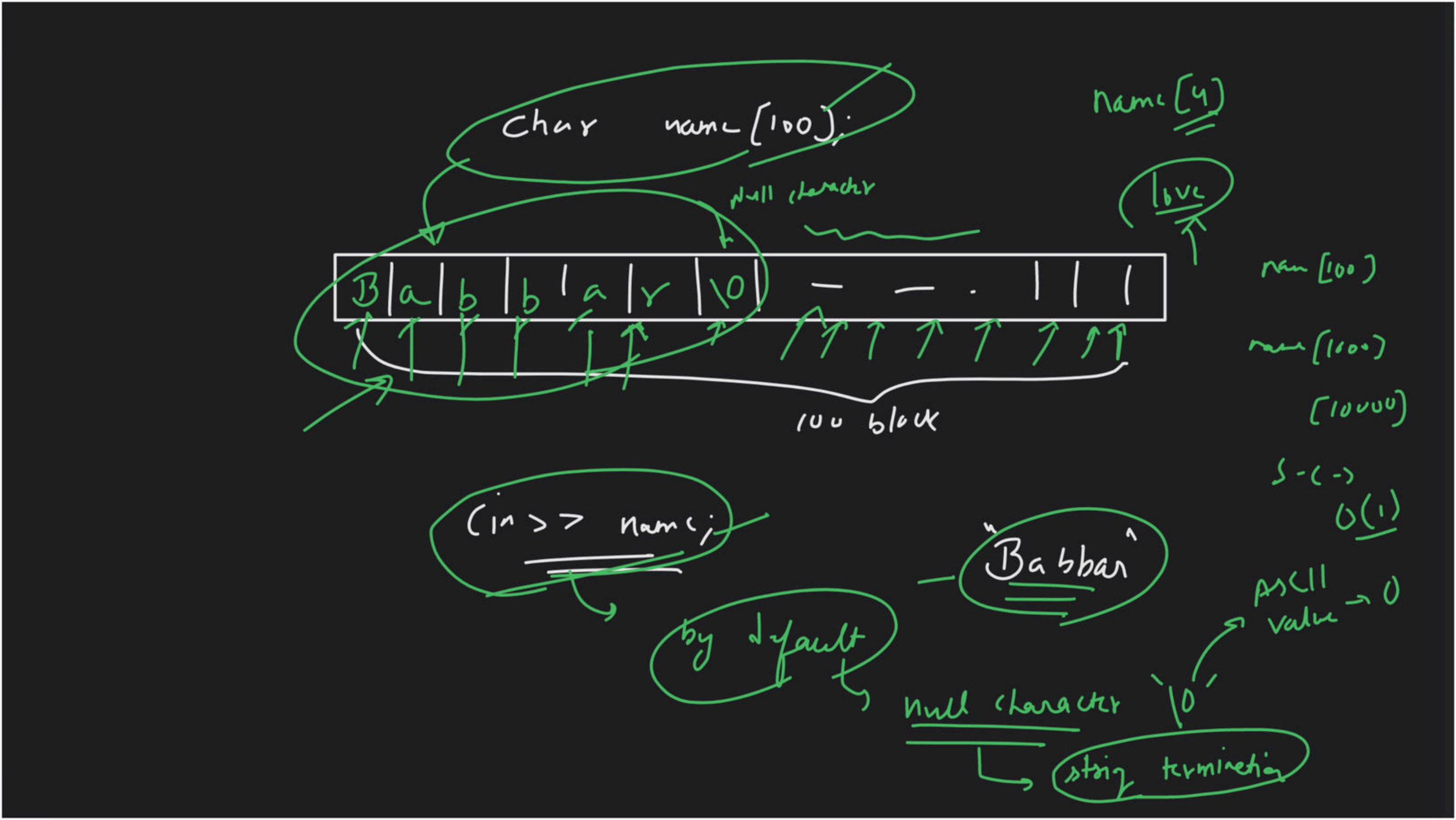
'0' '1' '2' '3' - - - '9'

- +

no


char ch[100];
Single character
cin >> ch
cin >> ch[2]

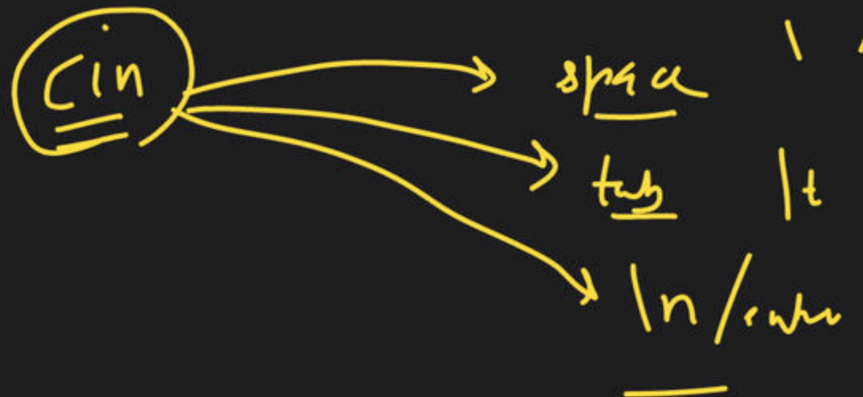

int a = 5;
int n;
cin >> n
arr[0]
arr[1]
arr[2]
int arr[10];
cin >> arr[2];

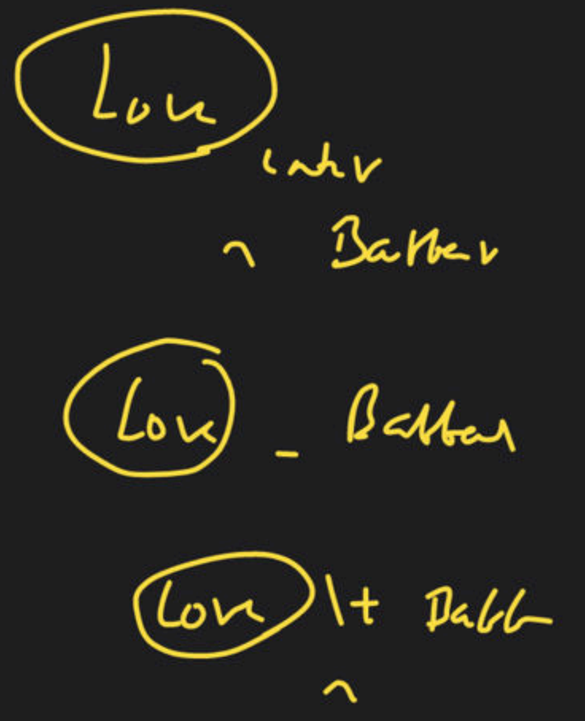

char name[100];
name[4]
love
Null character
B a b b a r \0
100 block
name[100]
name[1000]
[10000]
S-(->
O(1)
cin >> name;
Babbar
by default
ASCII value → 0
null character
\0
string termination

Q → (A) char array create

(B) full name → Love Babbar

(C) cout char array → ? Love





getline

→ char array create ✓ Memory

→ cin → 3rd char

→ cin → 50th character

→ cin name

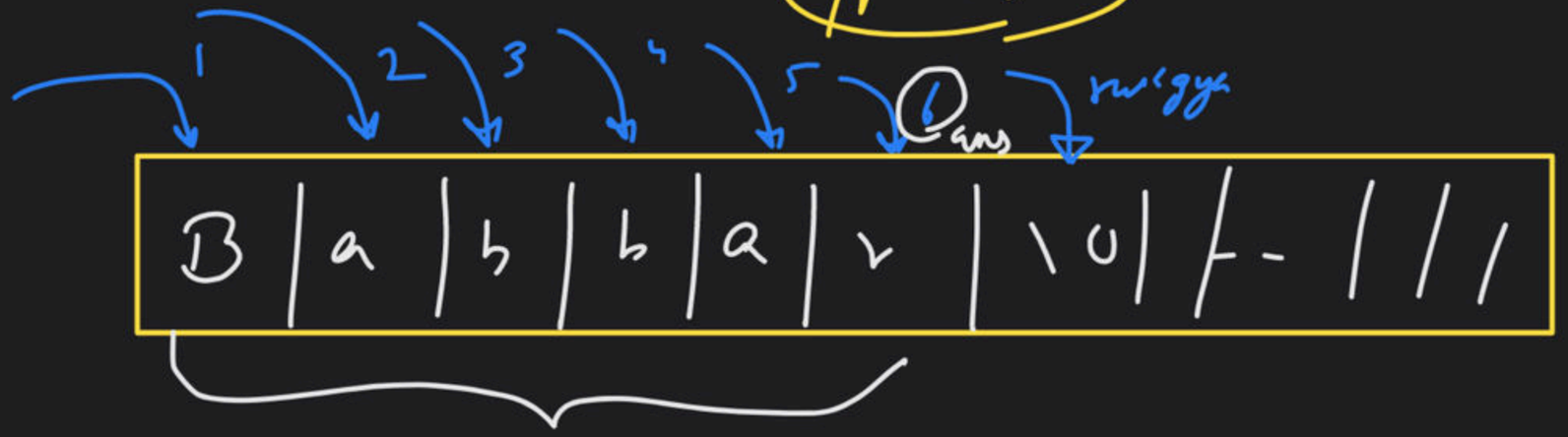
→ 

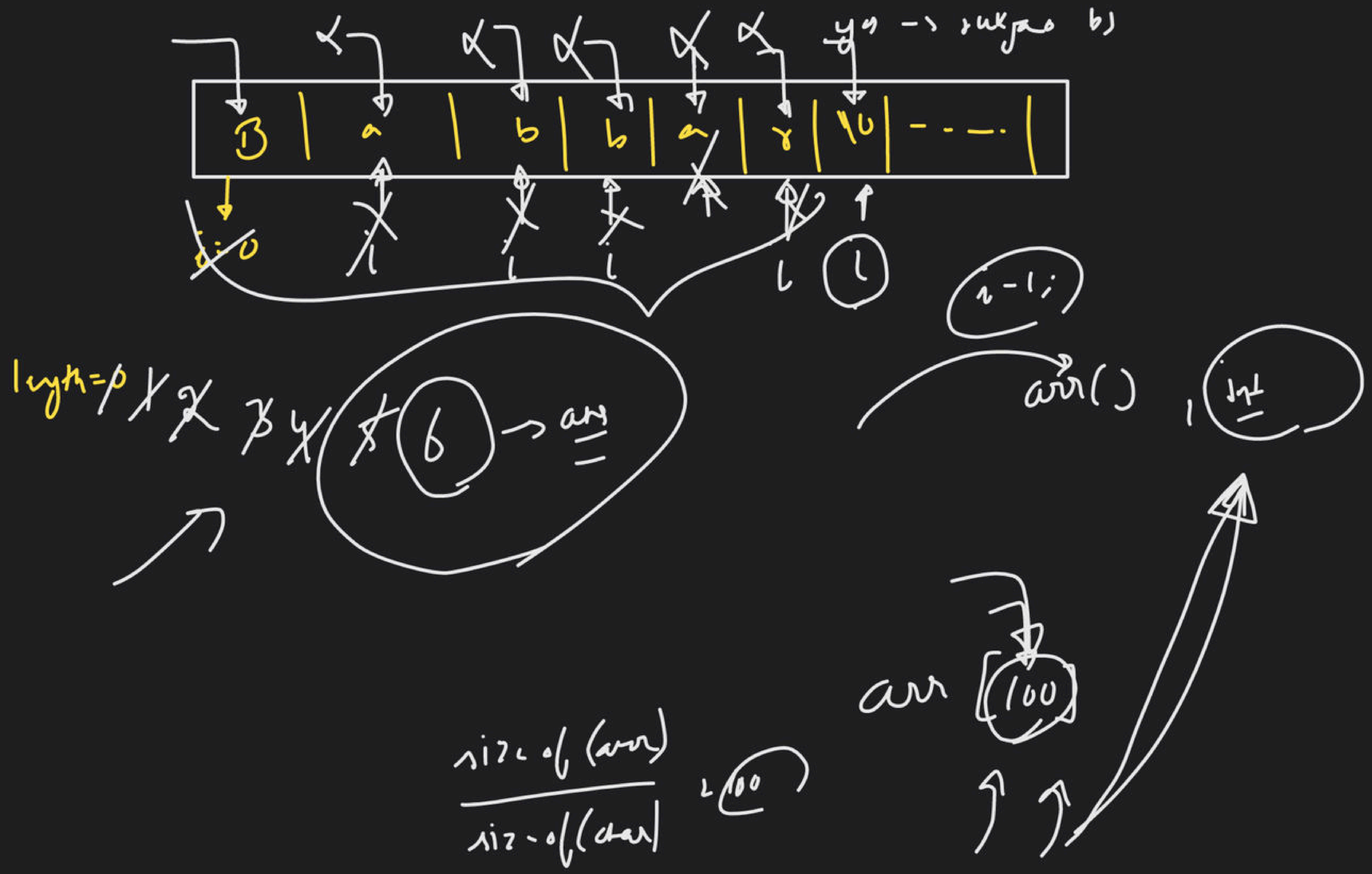
① Length of string

```
char name[100];
cin >> name;
```

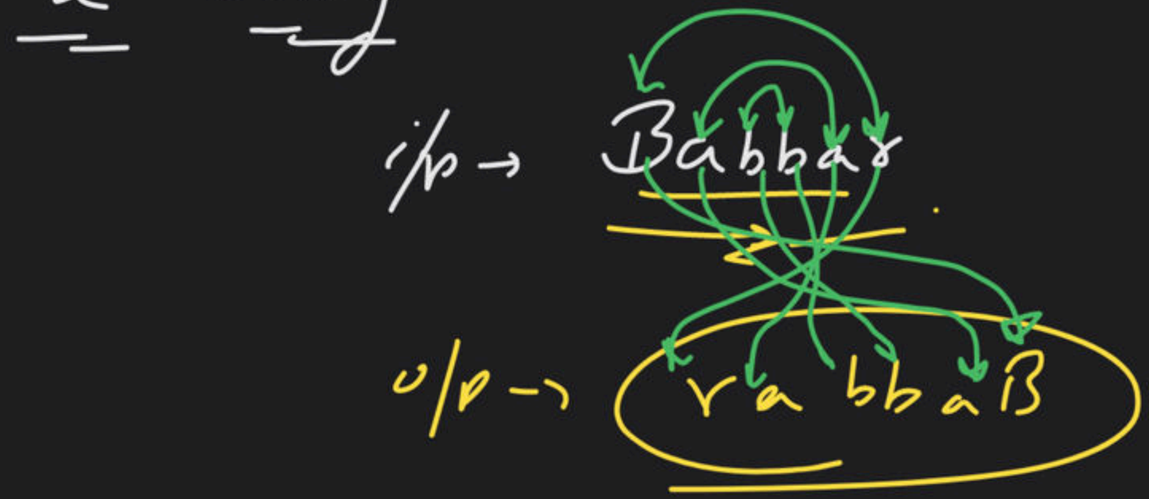
Babbar

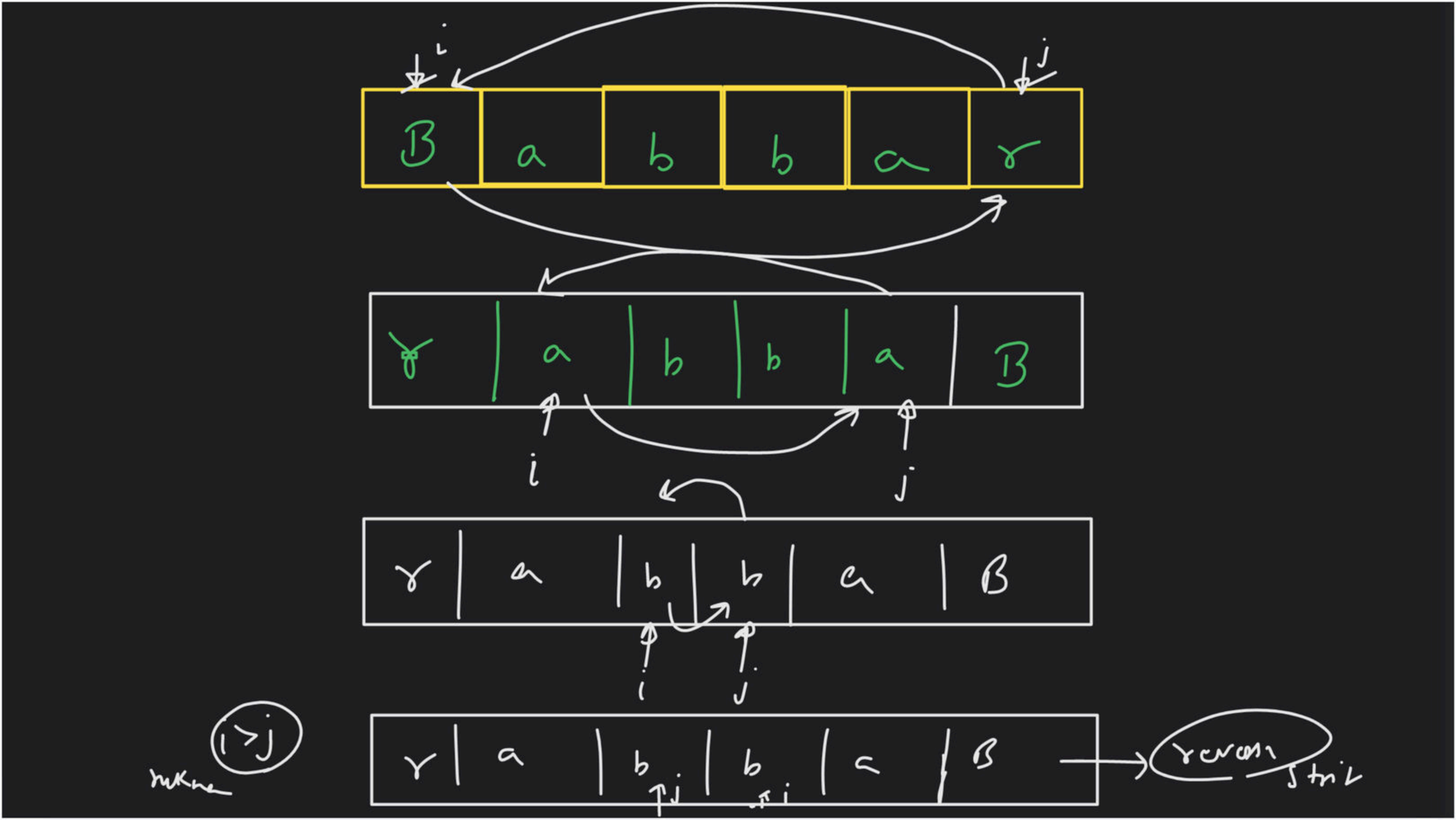
o/p → 6

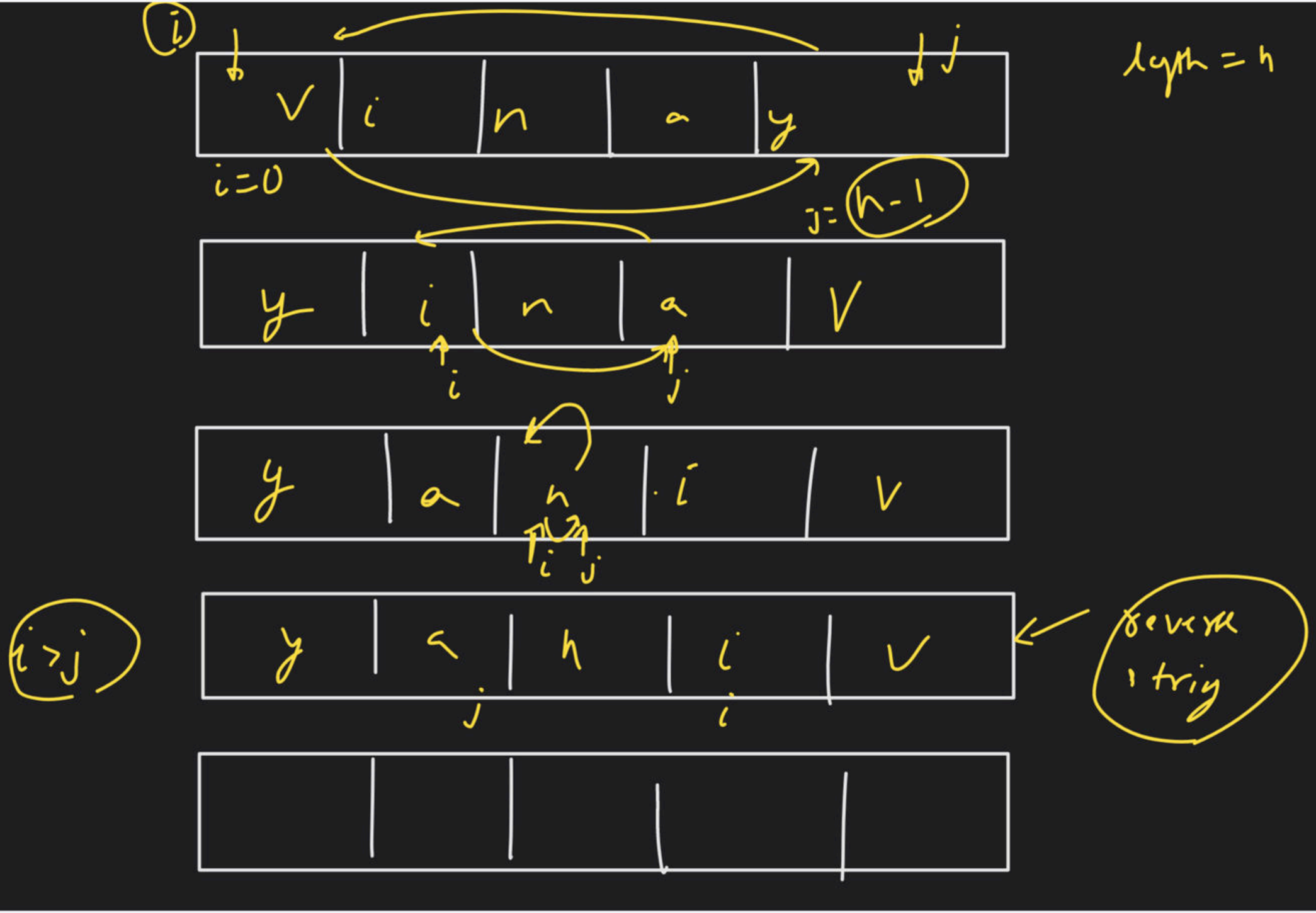


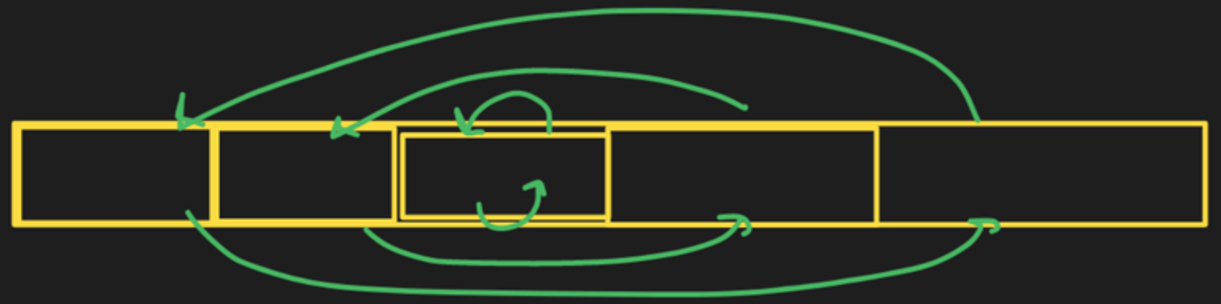

B a b b a r \0
i=0
length=0
arr
arr()
arr 100
sizeof(arr)
sizeof(char)
100

② Reverse a String



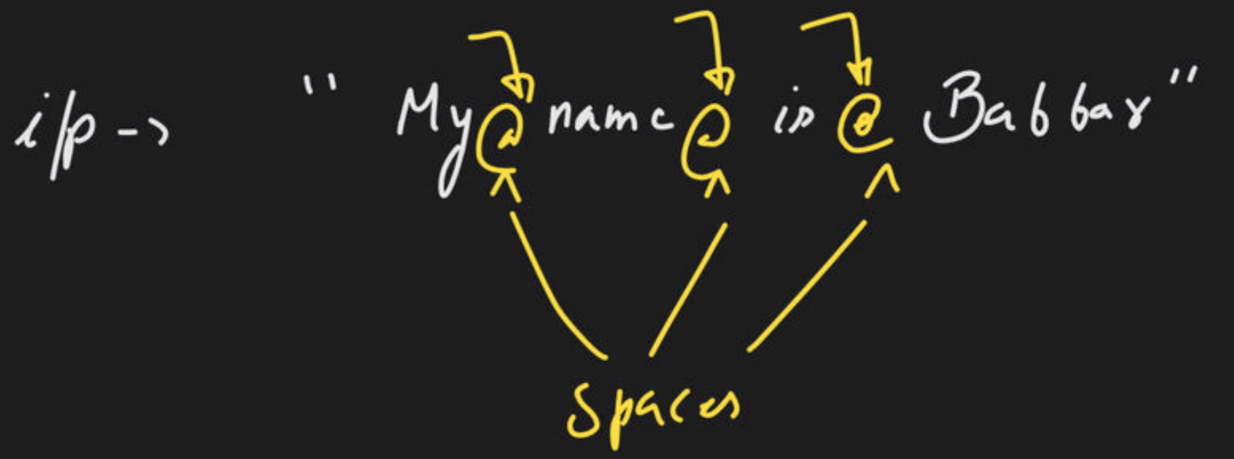

i
j
B a b b a r
r a b b a B
i
j
r a b b a B
i
j
r a b b a B
i>j
reverse string


i
j
length = n
v i n a y
i=0
j= n-1
y i n a v
i j
y a n i v
i j
i > j
y a n i v
j i
reverse string
v i n a y

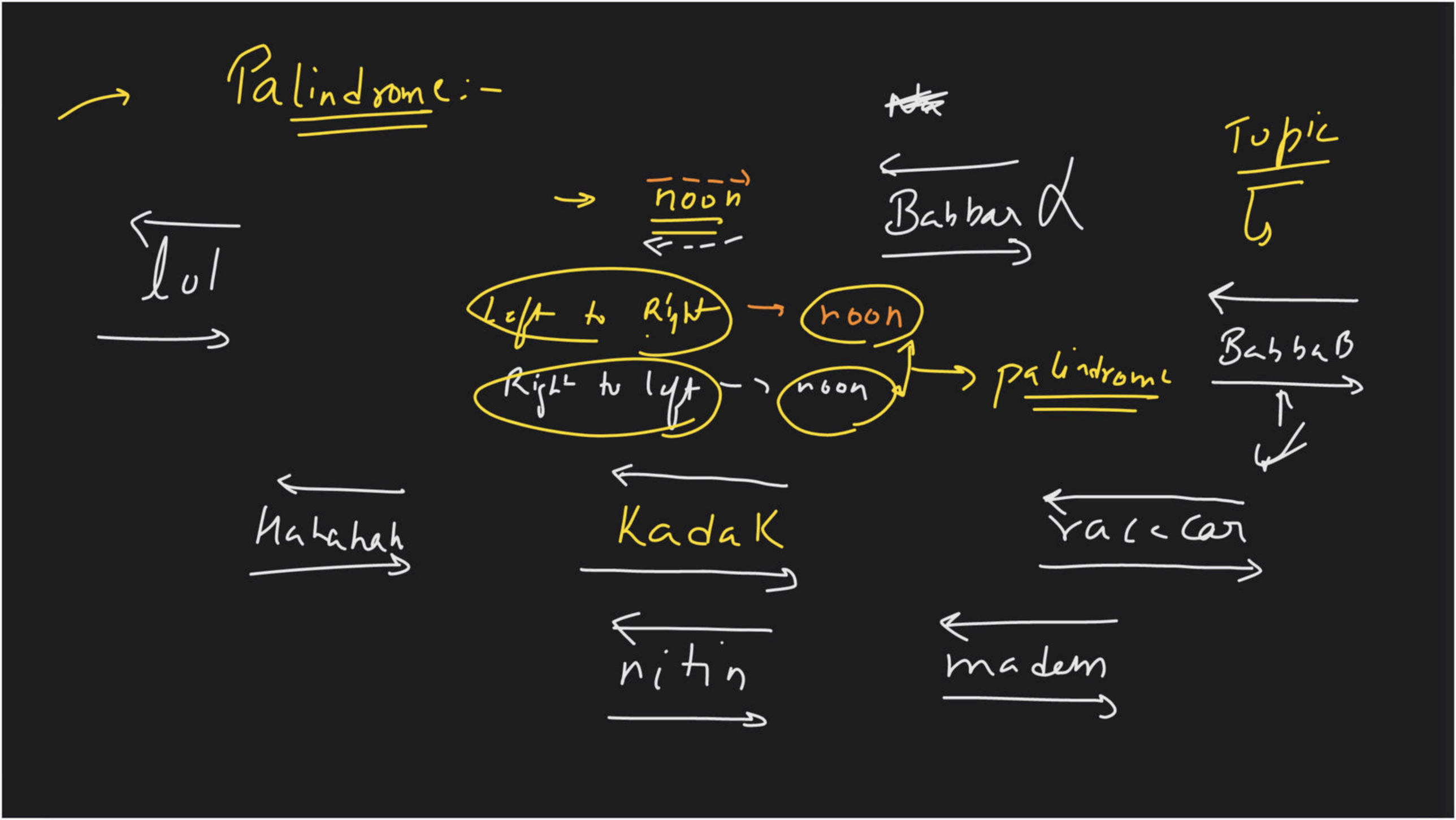


(1) Replace all spaces:-

space → @



o/p → My@name@is@Babbar

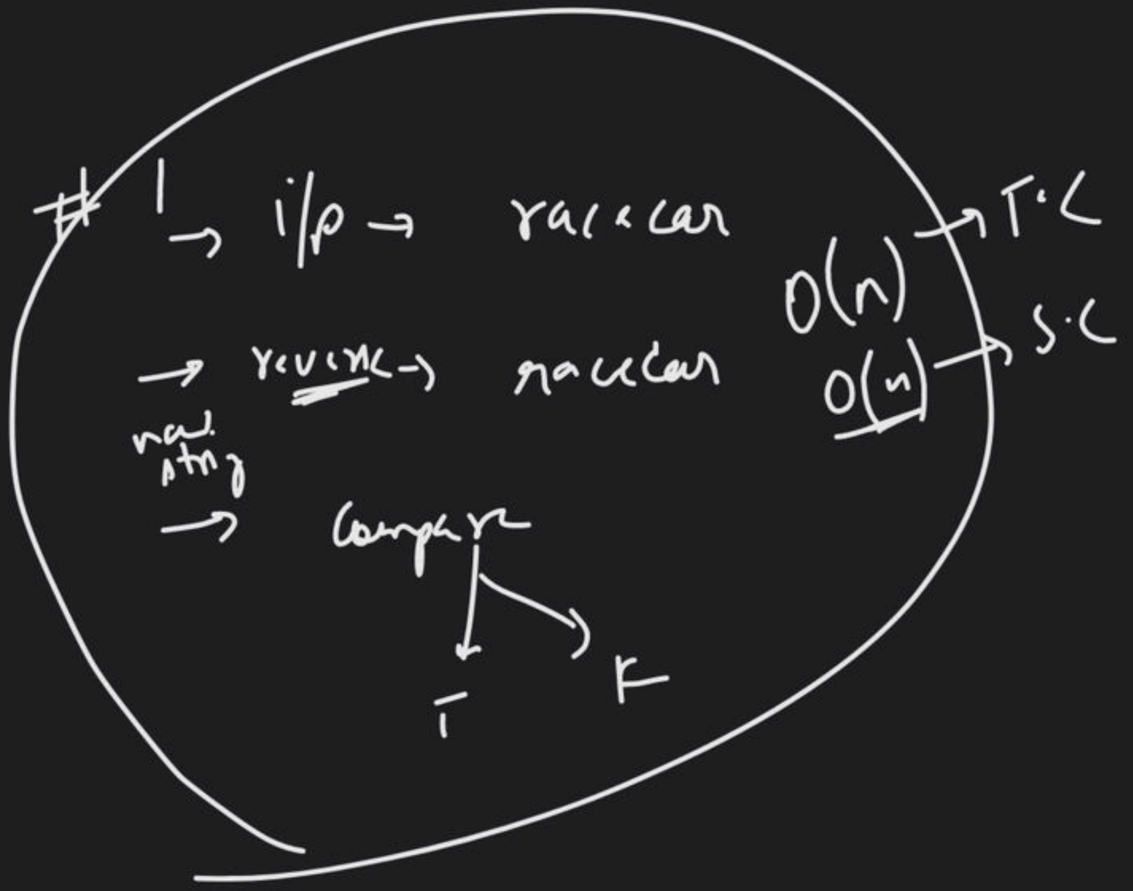

Palindrome :-
Topic
noon
Babbar
lol
Left to Right
noon
Right to left
noon
palindrome
BabbaB
Hahahah
KadaK
racecar
nitin
madam

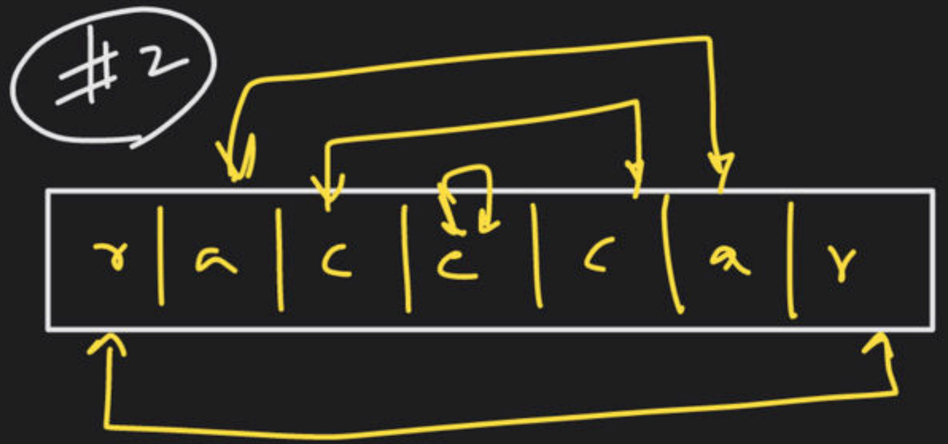

1
0
1

i/p →

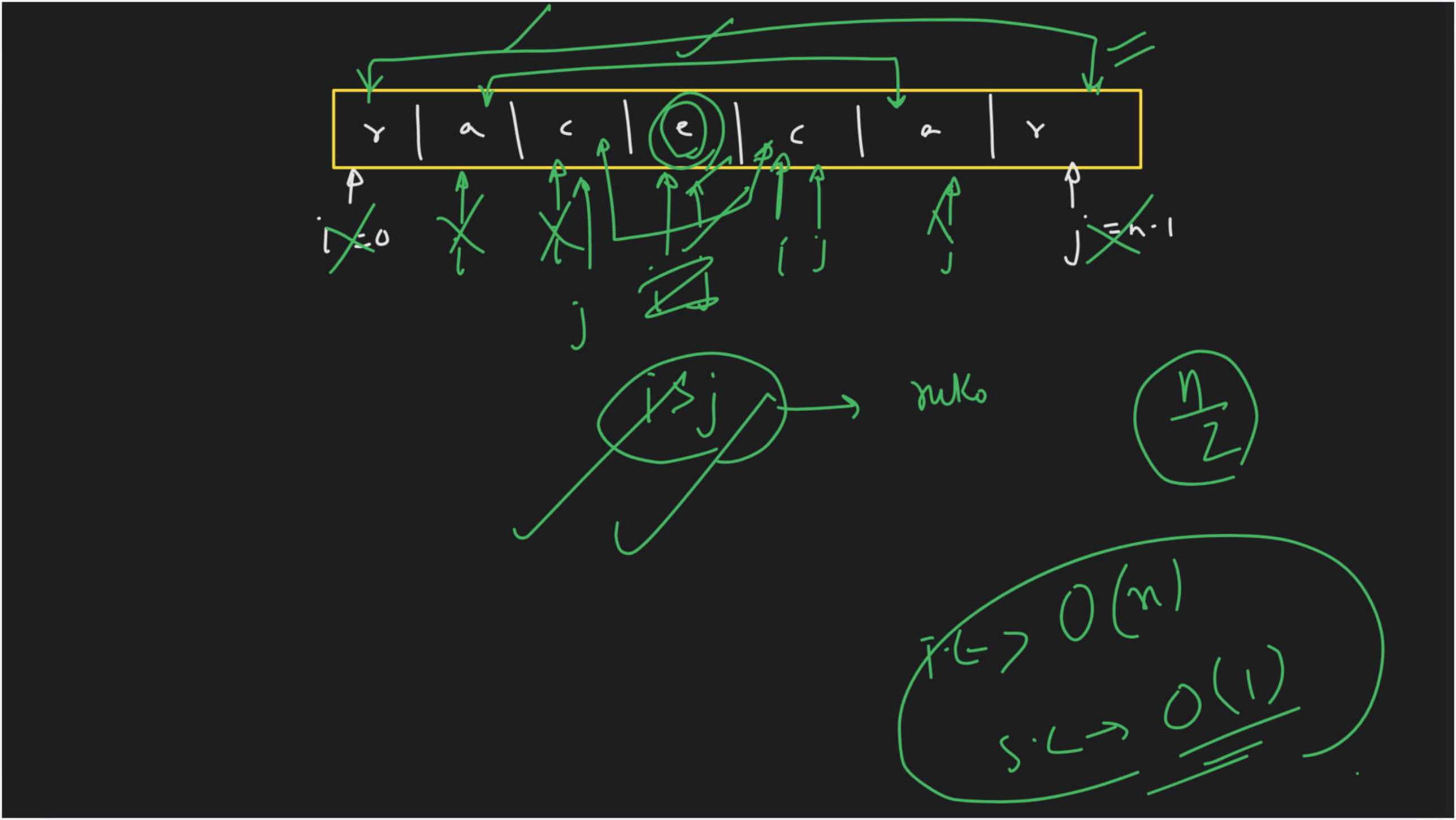

raceca r
true
false

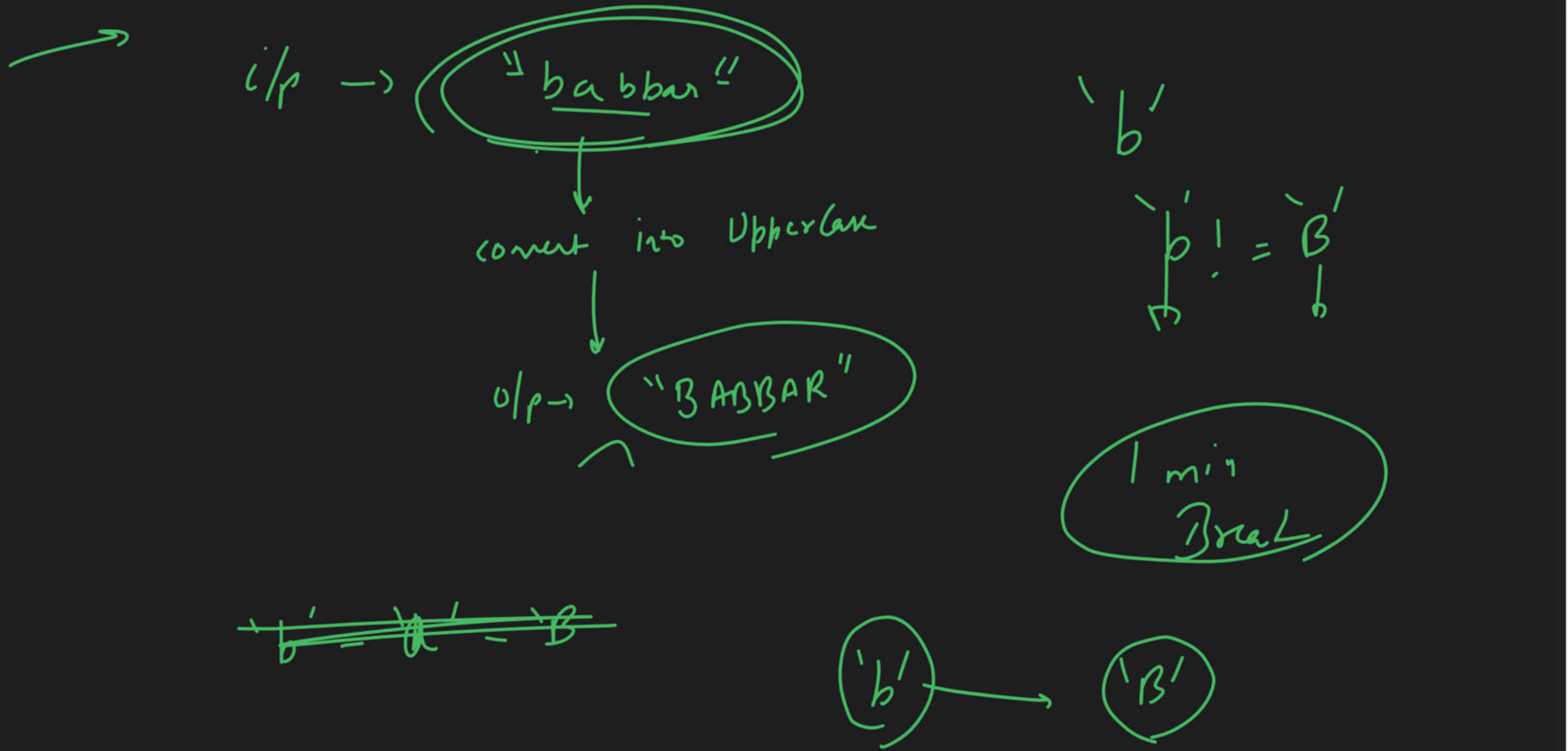

n
o
o

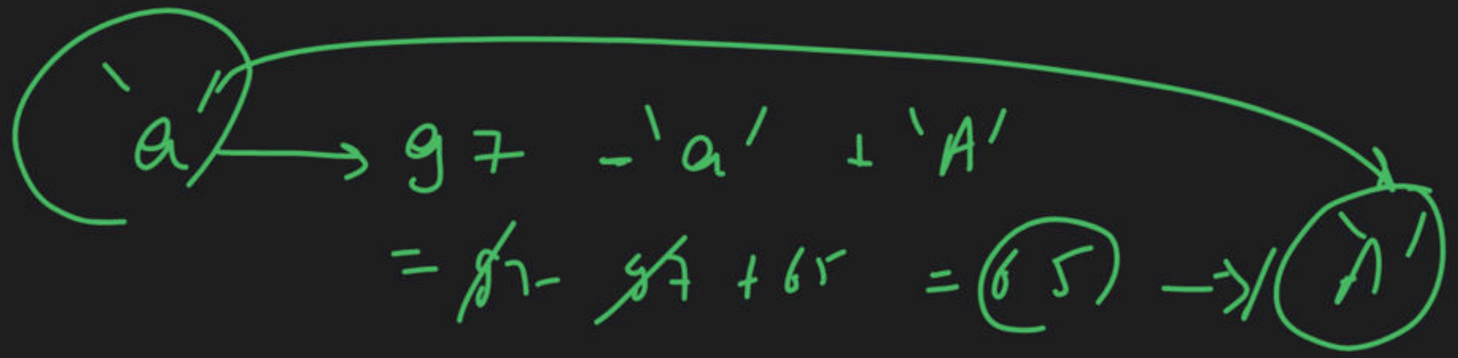

#1
→ i/p → raceca r
→ reverse → race car
real string
→ Compare
T
F
O(n) → T.C
O(n) → S.C


#2
r
a
c
e
c
a
r


B
a
b
b
a
D


r a c e c a r
i=0
j=n-1
j
i j
j
i≤j
null
n/2
T.C → O(n)
S.C → O(1)


i/p ->
"babbar"
convert into UpperCase
o/p->
"BABBAR"
'b'
b != B
1 min
Break
'b'
'B'



'A' → 65

Lowercase characters → Uppercase characters

'c' - 'a' + 'A'

- 'a' + 'A'

99 - 97 + 65

2 + 65 → 67 → 'C'

'A' ⟶ 'a'

+32

'A' ⟶ 65 − 65 + 97 = 'a'

− 'A' + 'a'

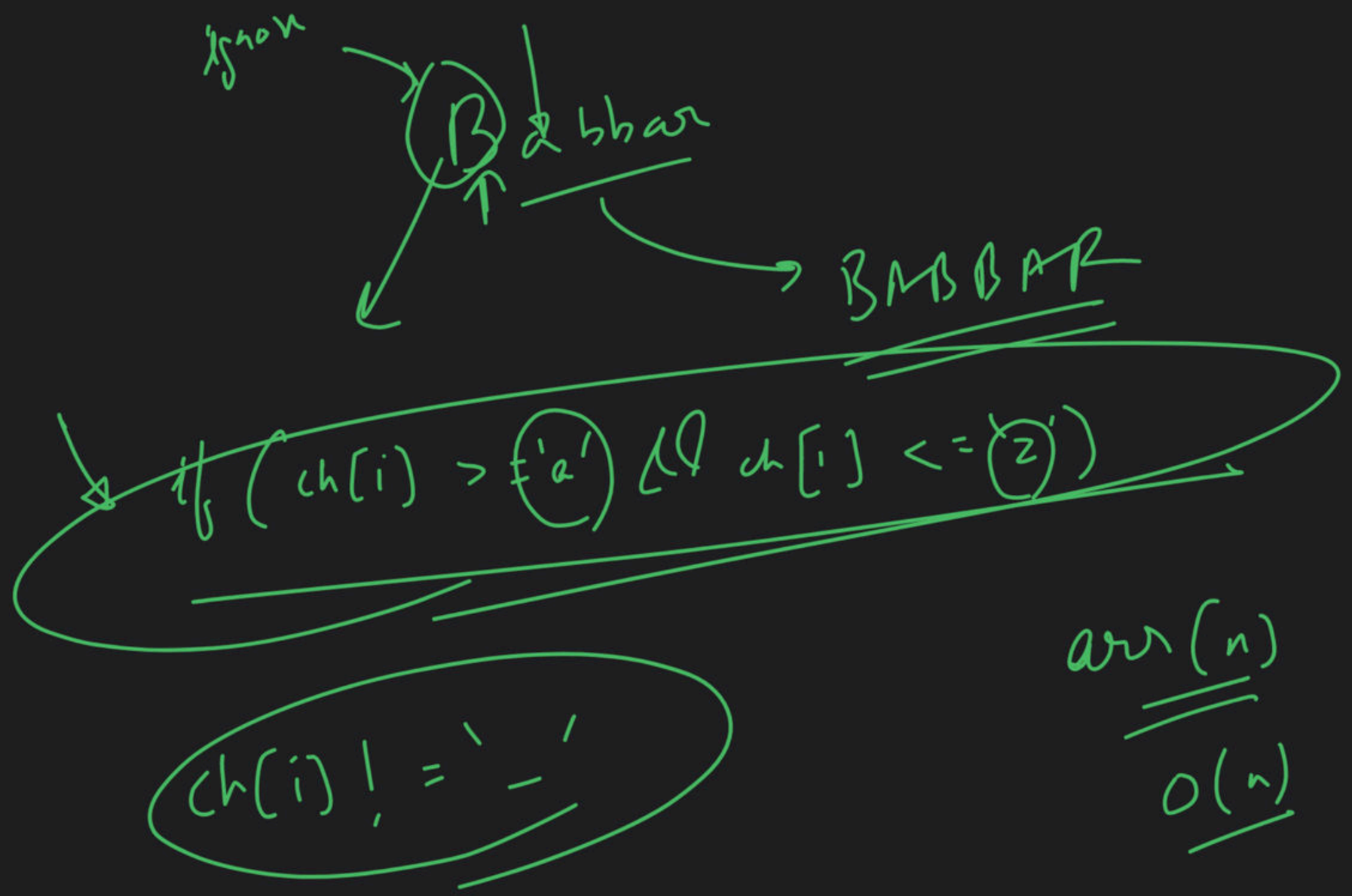
Upper ⟶ lower

'c' ⟶

67 − 'A' + 'a'

67 − 65 + 97

2 + 97 ⟶ 99 ⟶ 'c'

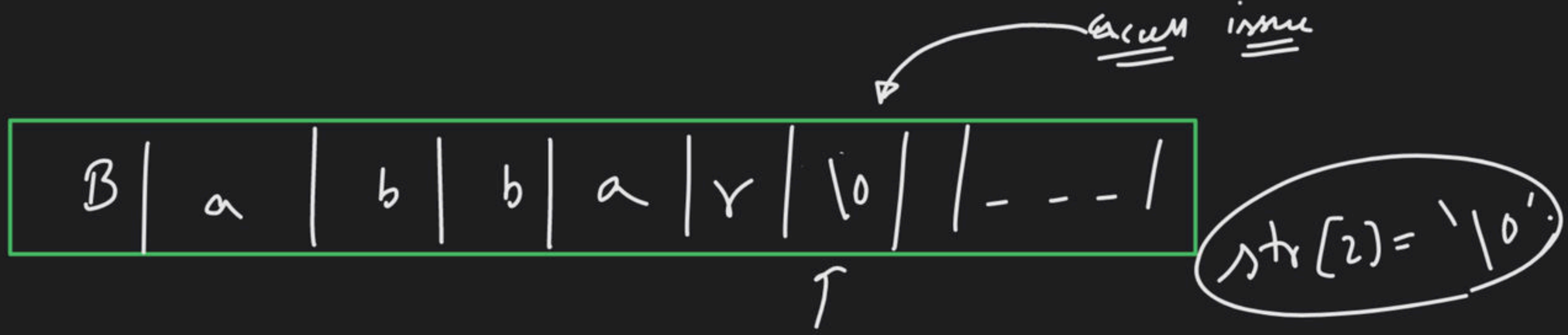

jason
B
d bhar
BMBBAR
if (ch[i] >= 'a' && ch[i] <= 'z')
ch[i] != '_'
arr(n)
O(n)

→ string

String str;

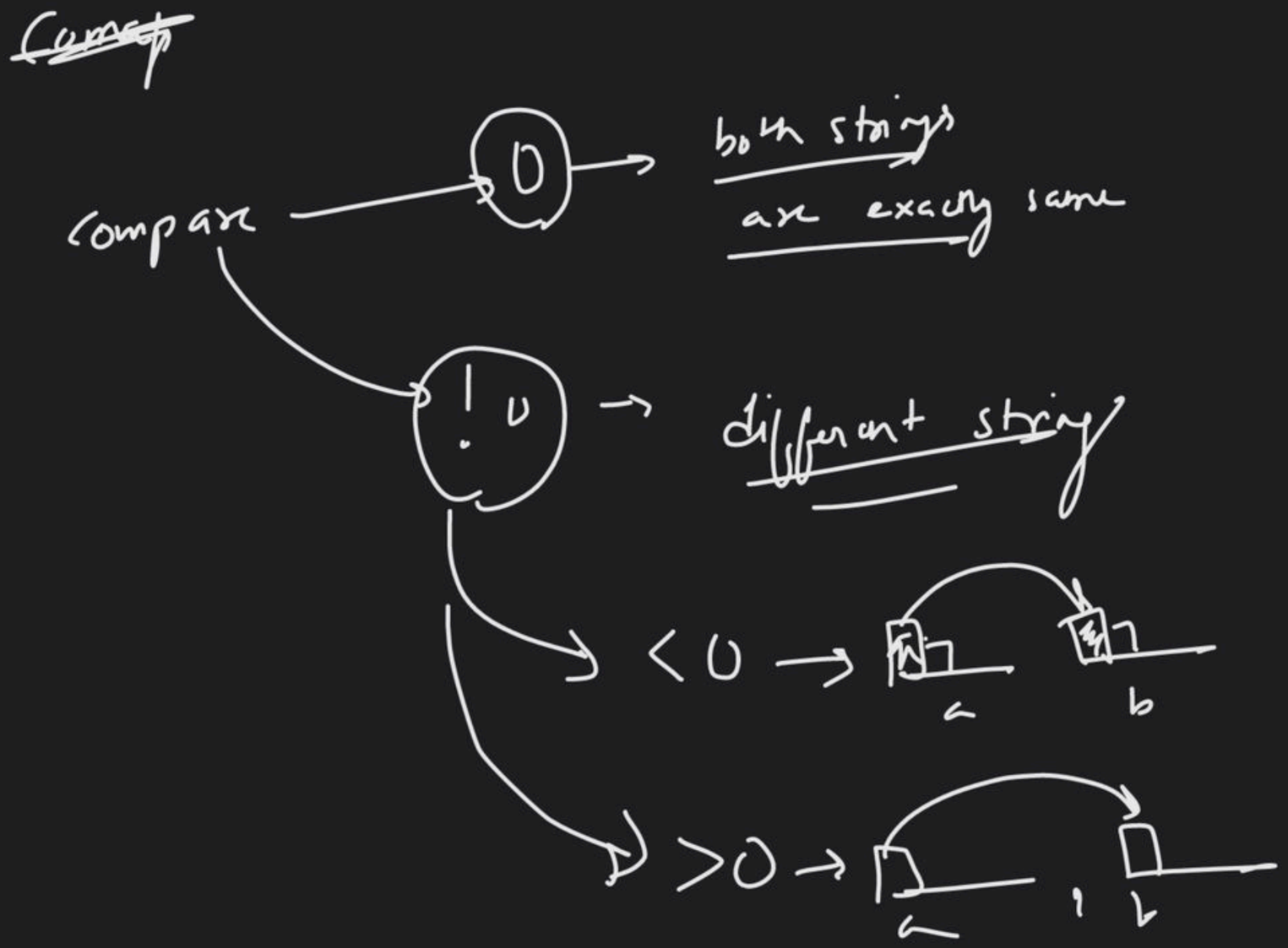
"Babbar"

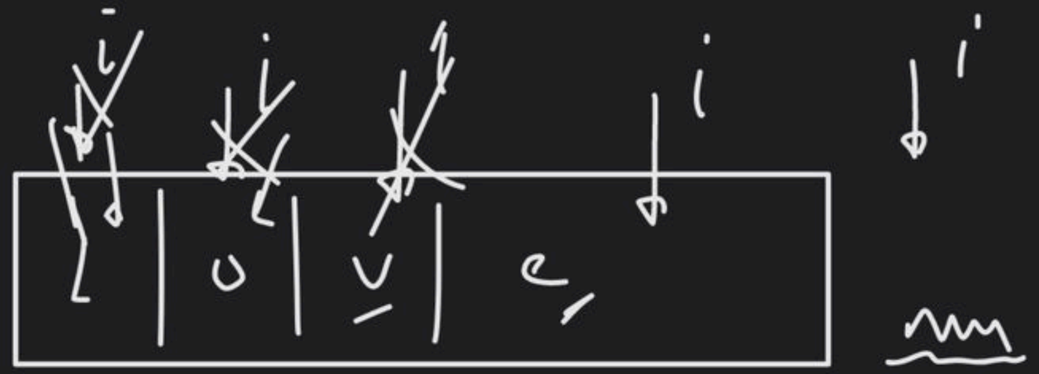
cin >> str;

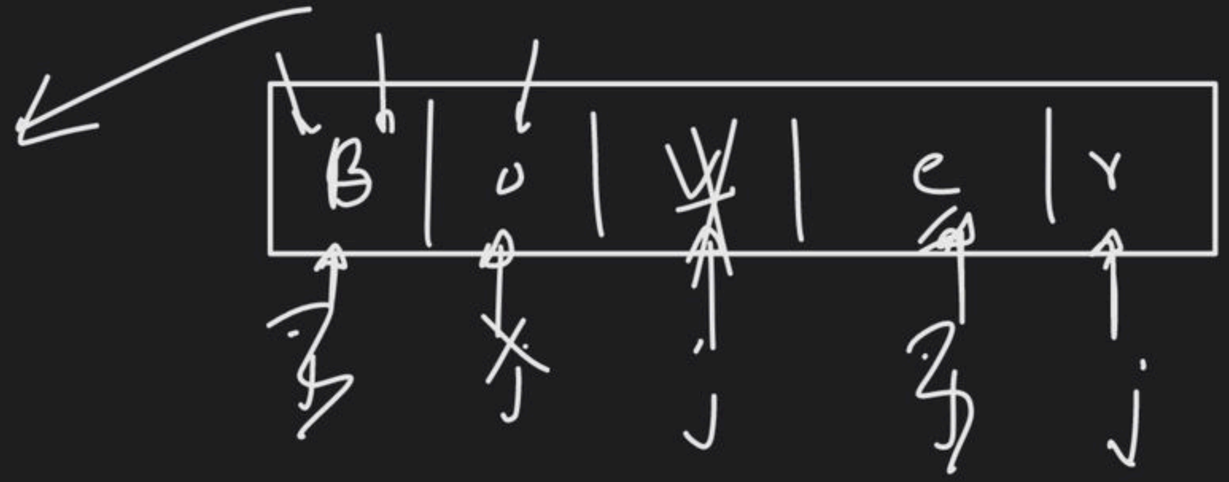


char array → B | a | \0 | b | b | a | \0 | r → print

string → B | a | \0 | b | b | a | \0 | r → print


Concept
compare
0
both strings are exactly same
!0
different string
<0
a
b
>0
a
b






compare → implement