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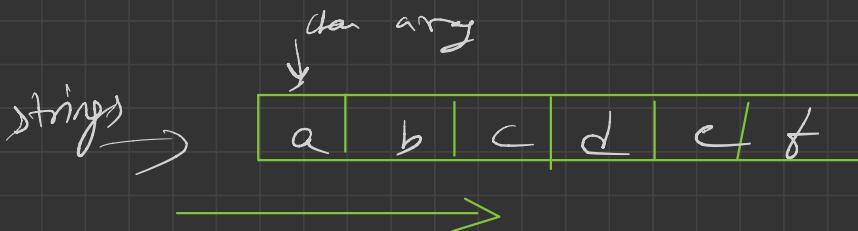
# Character Arrays & Strings

→ `char a = 'z';`

`'z'`

a

→ strings in C++ → 1-Dimensional char Array



→ character array

↓

`char ch[10];`

`int arr[10];`

701  
701  
701  
 $\begin{matrix} 701 \\ 701 \\ 701 \end{matrix}$  [701] [701] [701] [701] [701]

arr



701

ch

cin >> n;

char  
↓  
char name[20];

i/p → cin >> name;

Babsboon

$$\boxed{B \ a \ b \ b \ a \ \cancel{\alpha} \ | \ 10) \overline{-\ 1}}$$

null character  $\rightarrow \backslash 0$

cin >> name;

*love*

10) v e \wedge

love - habber

Use as a  
terminator

→ fissile magmatic  
plate edges & strings  
Kahoolae hook 'f'

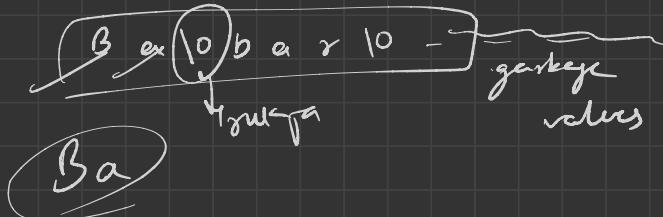
$\text{^o/p} \rightarrow$  cout << name;

→ Babbar 10

$\rightarrow$  Bar  $\frac{10}{\sqrt{2}}$  bar 10

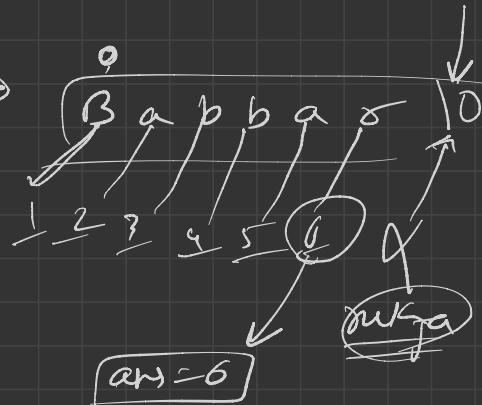
0	1	2	3	-	-	-	-	19
B	a	b	b	a	x	10	-	-

name[2] = '0'

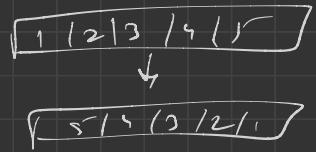


(1) Length of String = ?

name → Babbar  
ans = 6



② Reverse a string



i/p  $\rightarrow$  a  $\rightarrow$  "Babbar"  
ans = ("rabbabB")  $\rightarrow$  reverse string

③ Check Palindrome

string  $\rightarrow$  s = [a | b | c | b | a]  $\rightarrow$   
reverse  $\rightarrow$  rev\_s = [a | b | c | b | a]  
palindrome

$s \leftarrow$  car  
 $rev_s \leftarrow$  rac

cat  $\times$   
tac

Babbar

rabbabB  $\times$

$\rightarrow$

NOON  
rev NOON  $\rightarrow$  Palindrome

$i/p \rightarrow$  "abcba"

$o/p \rightarrow$  Yes / No

App<sup>1</sup>

$s = [ ] [ ] [ ] [ ]$

extra  
space

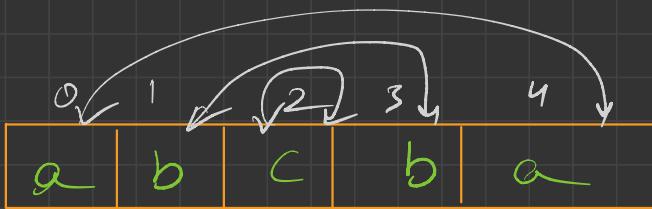
$\text{reversed\_s} = [ ] [ ] [ ] [ ]$

for ( )  
  {  
    comparison  
  }

equal / Not  
Yes or No

App<sup>2</sup>

$s = [a | b | c | b | a]$



$$s=0, c=n-1$$

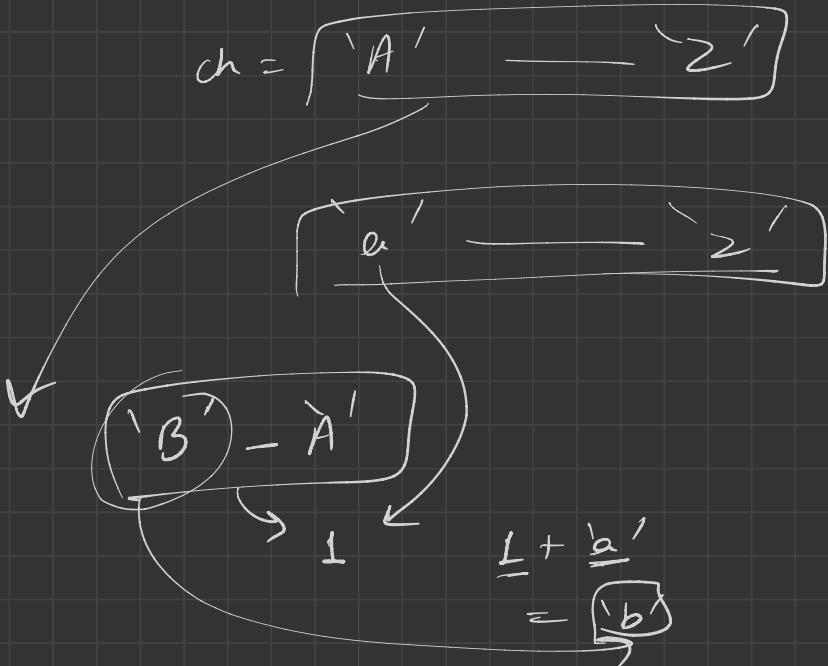
$\rightarrow \text{str}[B] != \text{str}[C] \rightarrow \text{return } 0;$

$\rightarrow \text{if equal } \rightarrow s++, c--$

$$s=1, c=3$$

$$s=2, c=2 \rightarrow$$

$s > c$   
return



$$\text{char } ch = \boxed{'B'}$$

$$\boxed{B} - \boxed{A} \rightarrow 1$$

45      64

$$ch - \boxed{A} + \boxed{a} = \text{resultant char}$$

↓  
Difference

$$\boxed{1} - \circled{0} = \boxed{1}$$

45      44

int

$$\boxed{a} + 1 = \boxed{b}$$

97

$v \rightarrow L$

$$\boxed{ch - 'A' + 'a'}$$

$\downarrow$   
0.11  
 $\nearrow$  done

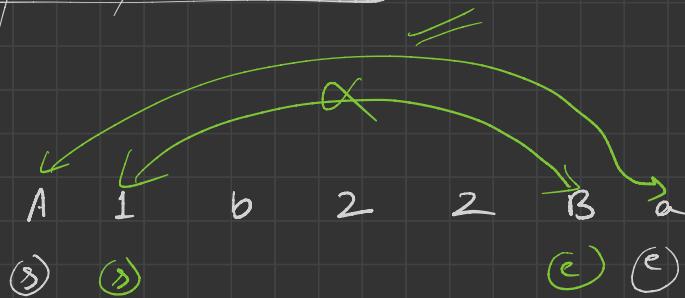
$L \rightarrow v$

Number

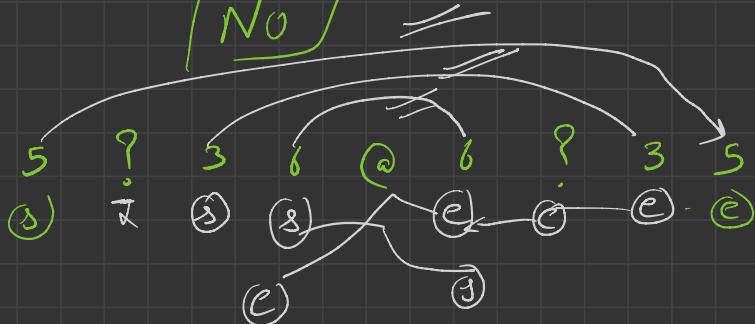
ch = '1'

$$\boxed{ch - '0'} = 1$$

$$\boxed{ch - 'a' + 'A'}$$



No



$s > c \rightarrow \text{negative}$

string s;

string str = "Babbar";

↓

str.pop\_back()

Babba

Babba 10

B	a	b	b	a	n	10
---	---	---	---	---	---	----

→ length → str.length()

str.push\_back('c');

Babbar

Babbarc

H/w →  
Key  
Difference  
b/w

char array	of	string
------------	----	--------

char  
arr

→ [a | b | 10 | c + | 0] → count  
of

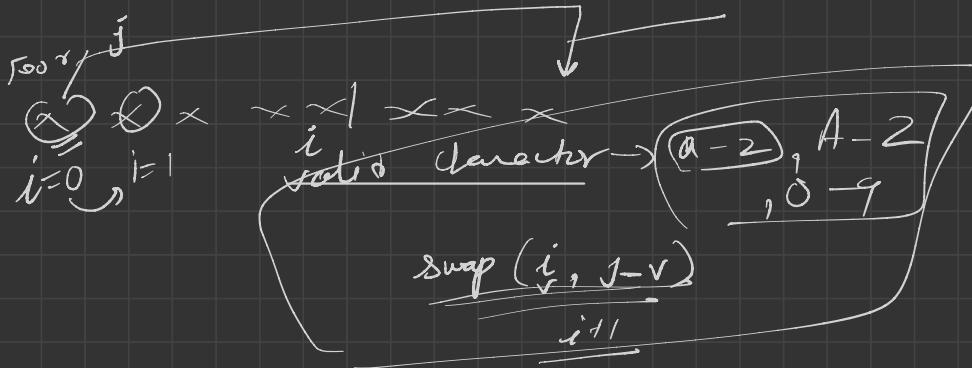
string

→ [a | b | 10 | c/n | 1] → count  
of

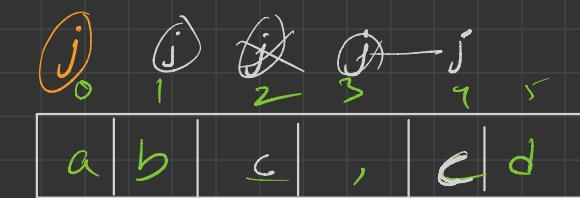
→ false character ~~state~~ ~~hatane~~ har

→ sub lower case to

→ for palindrome check



loop  $\leftarrow$



$i = 0$ ,  $j = 0$

valid('') → No  
valid('') → No

→ valid('a') → TRUE

$i = 1$

ab\_, cd

$i = 1$ ,  $j = 1$

$i = 2$

ab\_, cd

i/p → My name is love

o/p → yM eman si evol

→ word  
string create kya panga character ko  
attache

↳ 1 → space milje

↳ 2 → reverse word

↳ 3 → null character

↳ 4 → reverse word

W/w

$\rightarrow$  string  $\rightarrow$  test

$t \rightarrow 2$   
 $e \rightarrow L$   
 $s \rightarrow L$

$\left. \begin{matrix} t \rightarrow 2 \\ e \rightarrow L \end{matrix} \right\} \rightarrow \underline{\text{t}} \xrightarrow{\text{arr}}$

a - 2

A - Z

$a, A \rightarrow L$

int arr [26]

$a \rightarrow 0 \leftarrow A$

$b \rightarrow L \leftarrow B$

:

$z \rightarrow 25 \leftarrow Z$

lower case  $\rightarrow$  ch - 'a'  $\Rightarrow$  number  
arr[number] ++

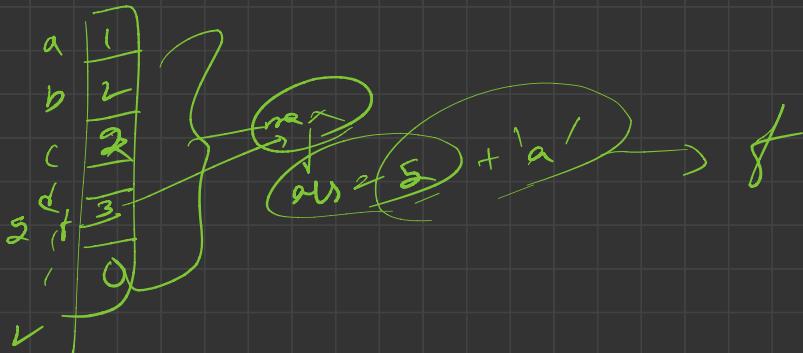
uppercase  $\rightarrow$  ch - 'A'  $\Rightarrow$  no<sup>o</sup>

arr[no<sup>o</sup>] ++

Count of that character in string

0	0	0	0	1	1	-	0
a	b	c	d	o	t	-	25

Output



(1) cin → Exec Stop →

cin.getline(str, len);

My name is Khan

Space

" "

tab

"\t"

newline

"\n"

ff/w

Custom delimiter - ?

char str[10];

→

length

$s.length()$

int len = strlen (name);

→

compare ( $s_1, s_2$ )

compare

strcmp ( $s_1, s_2$ )

$\downarrow$

$!= 0 \rightarrow \text{equal}^{\text{not}}$

$= 0 \rightarrow \text{equal}$

→ copy

strcpy (dst,  $s_{src}$ )

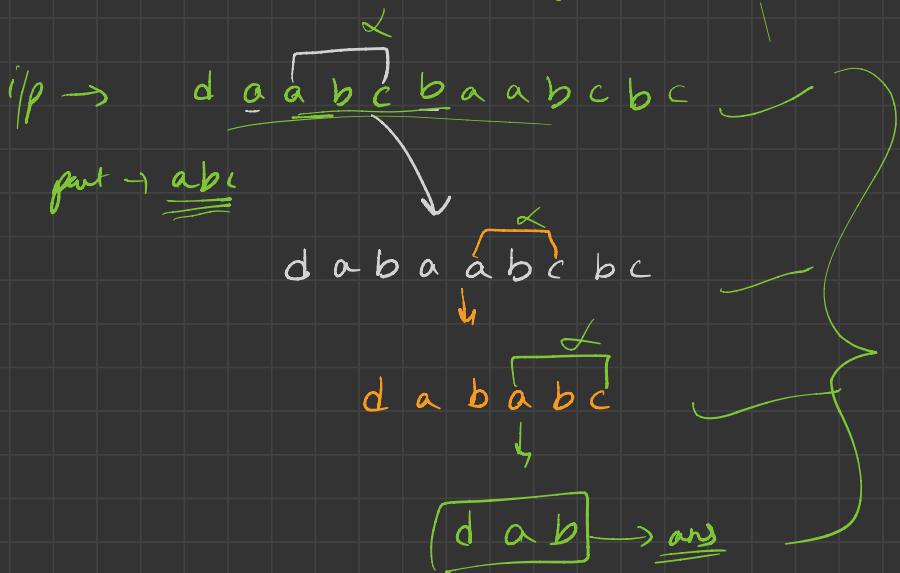
$d^1 =$   
 $s_1 = s_2$   
 $s_2 = s_1$

My name is KHAW

$O(n) \rightarrow$  My name is KHAW

H/w  $\rightarrow$  in-place soln  
 $O(1) \rightarrow$  space

$\rightarrow$  Remove all occurrences of Substring



## → Permutation in String

Diagram illustrating string comparison. A sequence of characters "c i d [b a] 0 0 0" is shown. The character "b" is underlined, and the character "a" is enclosed in a box. An arrow points from "b" to a circled "(ab)". From "(ab)", two arrows point down to circled "ab" and "ba". To the right of the sequence, the word "true" is written.

→ Remove adjacent duplicates

$i/p \rightarrow a b b a c a$

↓

$a a c a$

↓

$\boxed{a} \rightarrow \underline{\text{ans}}$

$i/p \rightarrow a z x x z y$

↓

$a z z y$

↓

$\boxed{ay} \rightarrow \underline{\text{ans}}$

How → RHUD SOLVE

~~✓~~

char arr[] = { a, a, b, b, c, c }

0/p → a 2 b 2 c 3

→ O(1) → space ↕

→ in-place ↕  
→ function modified array technique

① if count = 1 → if character appears from else  
character with count  
↳ if < 10 → chip karo  
else  
↳ to do single digit  
me & for copy new

a 2  
a    count ↗  
      10 ↗  
      else ↗ 12  
      for ↗ 1, 2  
      arr ↗

$x/p \rightarrow \{ \underline{a}, \underline{a}, \underline{b}, \underline{b}, \underline{b}, \underline{c}, \underline{c}, \underline{c} \}$

$0/p \rightarrow \{ a, 2, b, 3, c, 3 \}$

exception  $\rightarrow$  count - 1  
 $\downarrow$   
character  $\rightarrow$  count not needed

$x/p \rightarrow \{ \textcircled{a}, \textcircled{a}, \textcircled{b}, \textcircled{c}, \textcircled{c}, \textcircled{d}, \textcircled{d} \}$

ans  $\rightarrow \{ a 2 \underline{b} c 2 d 2 \}$

