

In this Video, we are going to learn about char arrays, strings and solve the following questions:

- Length of String
 - Reverse a String
 - Check Palindrome
 - Valid Palindrome
 - Reverse words
 - Maximum occurring character
 - Remove all occurrences of substring
 - Remove all adjacent duplicates
 - String Compression
-

There is a lot to learn, Keep in mind “ Mnn boot karega k chor yrr apne se nahi yoga ya maza nahi para, Just ask 1 question “ Why I started ? ”

Visit Crio: <https://www.crio.do/redeem/67ba5ff/>

Stack Overflow Link: <https://stackoverflow.com/questions/4...>

Strings cplusplus reference: <https://wwwcplusplus.com/reference/s...>

Discord Server Link: <https://discord.gg/feSQvVXMrd>

Course Flow: <https://whimsical.com/dsa-4-placement...>

Homework: timestamps added below

Notes Link: <https://drive.google.com/file/d/1Pf0h...>

Code Links: <https://github.com/loveBabbar/CodeHel...>

Question Links:

- Length of String
 - Reverse a String: <https://leetcode.com/problems/reverse...>
 - Check Palindrome:<https://bit.ly/3E55FvF>
 - Valid Palindrome : <https://leetcode.com/problems/valid-p...>
 - Reverse words: <https://leetcode.com/problems/reverse...>
 - Maximum occurring character: <https://practice.geeksforgeeks.org/pr...>
 - Remove all occurrences of substring: <https://bit.ly/3sfP71Q>
 - Remove all adjacent duplicates: <https://leetcode.com/problems/remove...>
 - String Compression: <https://leetcode.com/problems/string-...>
 - Permutation in Strings: <https://leetcode.com/problems/permuta...>
 - Remove adjacent Duplicates: [https://leetcode.com/problems/remove...](https://leetcode.com/problems/remove-...)
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Do provide you feedback in the comments, we are going to make it best collectively.



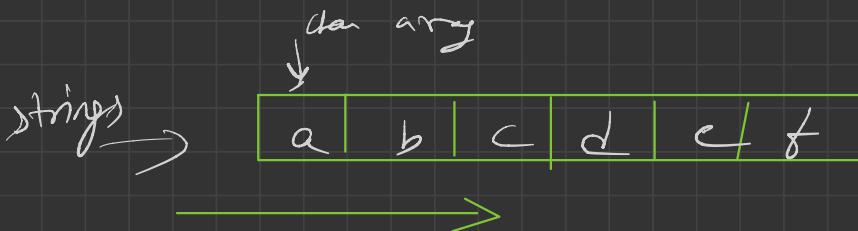
Character Arrays & Strings

→ `char a = 'z';`

`'z'`

a

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



→ character array

`int arr[10];`

`701`
`701 701 701 701 701`
`0 1 2 3 4`

`arr`



`701`
ch

cin >> n;

char
↓
char name[20];

i/p → cin >> name;

Babbar

\boxed{B}	a	b	b	a	α	β	$ 10 - 1$
0	1	2	3	4	5	6	19

null character $\rightarrow \backslash 0$

cin >> name;

love

10) v e 10 - - -

love - habber

We eat a
terminator

5 fissi mafie
pata leye k string

Kaha End hōku
f

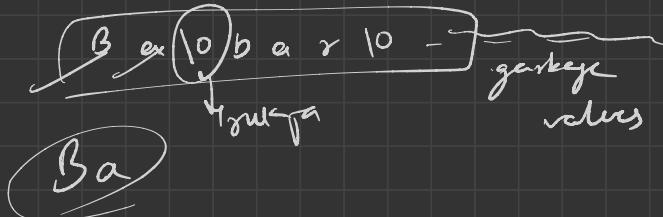
$\circ | p \rightarrow cout << \text{name};$

→ Babbar 10

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

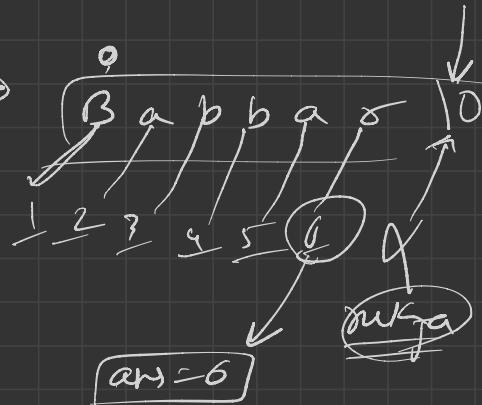
0	1	2	3	-	-	-	-	19
B	a	b	b	a	x	10	-	-

name[2] = '0'

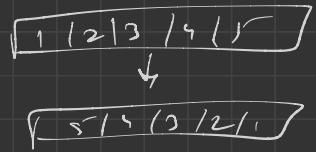


(1) Length of String = ?

name → Babbar
ans = 6



② Reverse a string



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

③ Check Palindrome

string
 $s = [a | b | c | b | a] \rightarrow$
reverse $\rightarrow s_{rev} = [a | b | c | b | a]$
palindrome

$s < \underline{car}$
 $s_{rev} > mac$

cat \neq tac

Babbar

rabbabB \times

NOON
rev \rightarrow NOON \rightarrow Palindrome

\rightarrow

$i/p \rightarrow$ "abcba"

$o/p \rightarrow$ Yes / No

App¹

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

extra
space

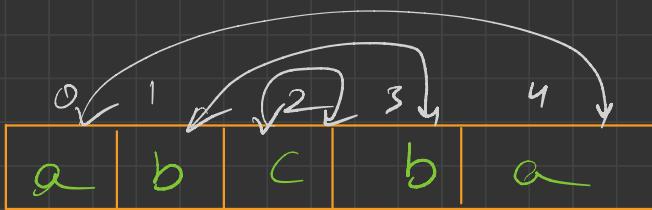
$\text{reversed_s} = [] [] [] []$

for ()
 {
 comparison
 }

equal / Not
Yes or No

App²

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



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

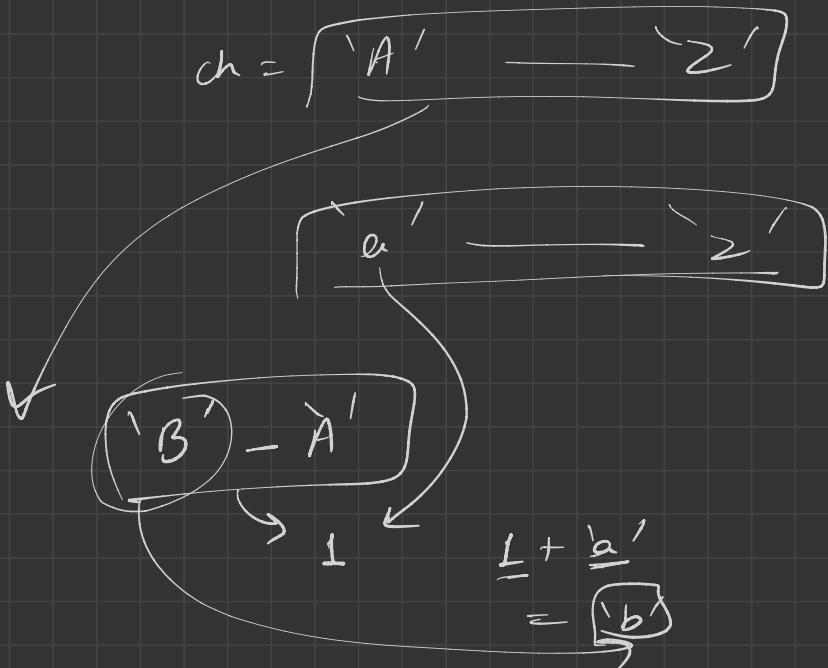
$\rightarrow \text{str}[B] != \text{str}[C] \rightarrow \text{return } 0;$

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

$$s=1, c=3$$

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

$s > c$
return



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

$$\begin{array}{r} \boxed{'B'} - \boxed{'A'} \\ \downarrow \quad \downarrow \\ \underline{05} - \underline{64} \end{array} \rightarrow 1$$

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

↓
Difference

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

$\underline{45} - \underline{44} = \boxed{1}$

$\boxed{1} \rightarrow \underline{\text{int}}$

$$\begin{array}{r} \boxed{a} + 1 = \boxed{b} \\ \downarrow \quad \downarrow \\ \underline{97} + \underline{1} \end{array}$$

$v \rightarrow L$

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

\downarrow
0.11
 \nearrow done

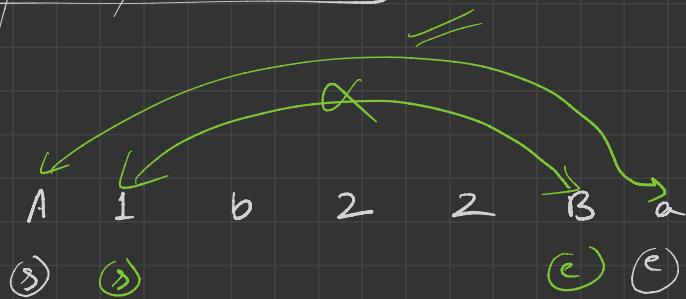
$L \rightarrow v$

Number

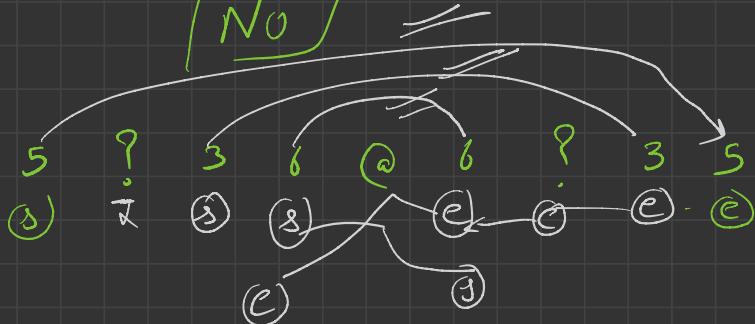
ch = '1'

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

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



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

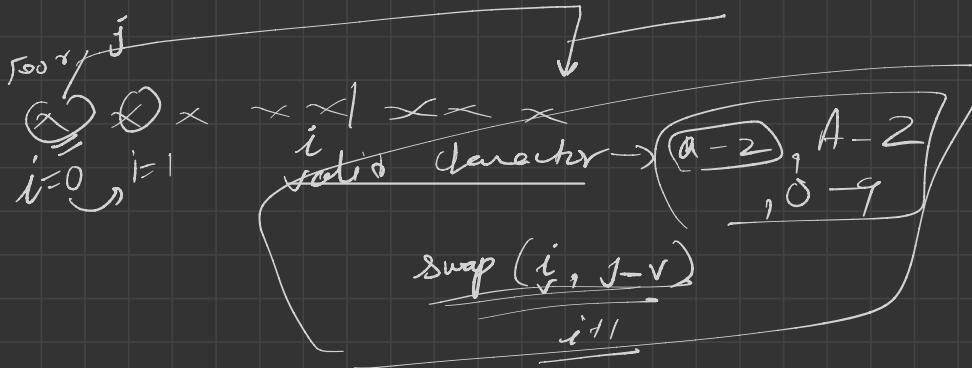
string

→ [a | b | 10 | c/n | 1] → count
of

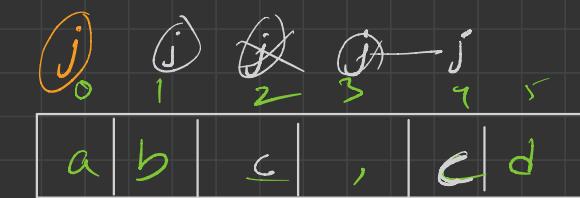
→ false character ~~state~~ ~~hatane~~ har

→ sub lower case to

→ for palindrome check



loop +



$i=0$, $j=0$

valid('a') → No
valid('c') → No

→ valid('a') → TRUE

$\boxed{i=1}$

$a b_-, cd$

$i=1$, $j=1$

$i=2$

$a b_-, cd$

i/p \rightarrow My name is love

o/p \rightarrow yM eman si evol

\rightarrow word string create kya panga character ko attach
1. span milje
2. reverse word
3. null character
4. reverse word

\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] ++

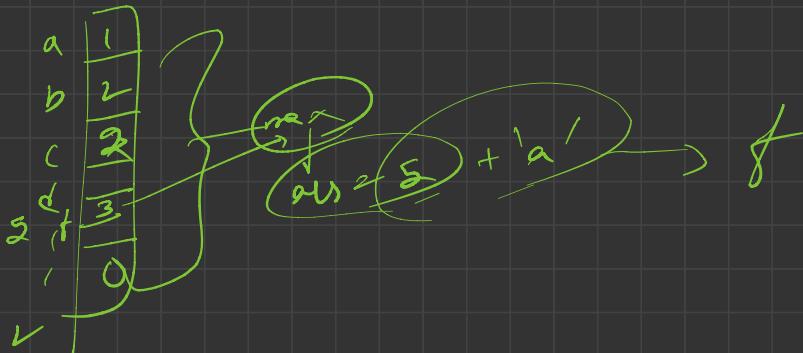
uppercase \rightarrow ch - 'A' \Rightarrow no^o

arr[no^o] ++

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"

11/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

$\neq 0 \rightarrow$ ^{not} equal

$= 0 \rightarrow$ equal

→ copy

strcpy (dst, s_{src})

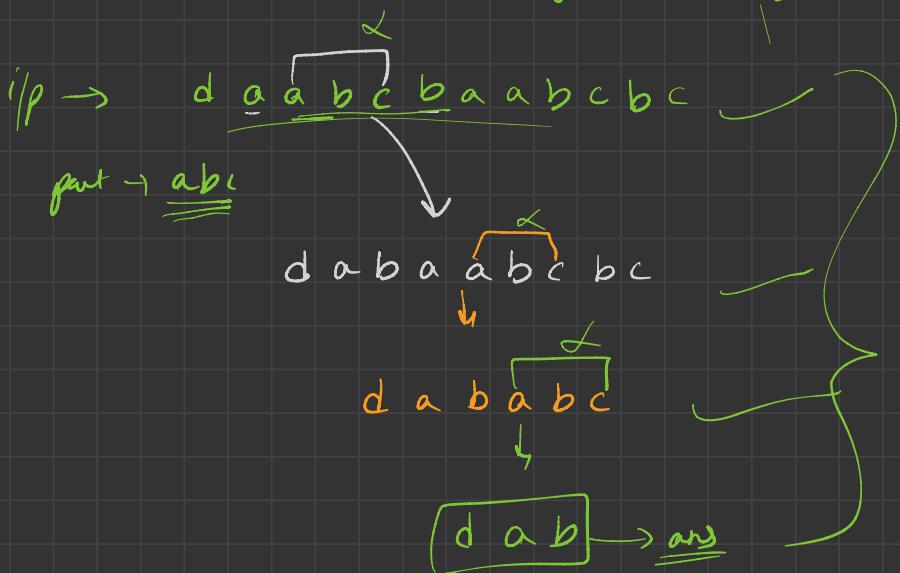
$d^1 =$
 $s_1 = s_2$
 $s_2 = s_1$

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

$s_2 = e^a i^b d^c [b^a]^{000}$ → true
 $s_1 = \text{ab} \rightarrow ab, ba$

→ $s_1 \rightarrow$ character count store → $\boxed{\text{int arr[26]}}$

→ $s_2 \rightarrow$ traverse → window → $(s_1.length)$
 $s_2 = e^0 i^1 d^2 b^1 a^0 000$
 $s_1 = \boxed{ab} \rightarrow 2$
 $a=1, b=1$

comparison → $\text{arr}[26]$
 true/false

$i < k$
 $\text{char} = \cancel{s_2}[i-k]$
 $0 \rightarrow a$
 $\text{arr}[n]$

→ 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 → skip karo
else
↳ to do single digit
me & for copy new

a 2
a 1
↓
12
say 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 $\rightarrow \{ a 2 \underline{b} c 2 d 2 \}$

