

C++ Strings -1

Lecture- 17

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What are strings and Why are they used?

'\0'

Strings are basically char arrays.

```
char str[] = {'a', 'b', 'c', 'd', 'e', '\0'};
```

Declaration of Strings and taking Input

```
String s;
```

```
cin >> s;
```

```
cout << s;
```

"Raghav"
s

raghav garg

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Indexing of characters in Strings

String s = "Raghav"

0	1	2	3	4	5
'R'	'a'	'g'	'h'	'a'	'v'

s[0] → 'R'

Ques : Input a string of length n and count all the vowels in the given string.

```
int n;  
cin >> n;  
char str[n];  
for(int = 0; i < n; i++)  
|   cin >> str[i];  
}
```

Updation of a single character in string

```
String str = "Raghav";
```

```
str[1] = 'o';
```

```
cout << str;
```

In C++, strings are mutable

Ques : Input a string of size n and Update all the even positions in the string to character 'a'. Consider 0-based indexing.

*

Built-in string functions

↓

reverse

length

substring

int → string

etc

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```
<string_name>.size()
```

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push_back()

vectors

& pop_back()

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"+" operator

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reverse()

```
String str = "abcdef";  
reverse(str.begin(), str.end());
```

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Ques : Input a string of even length and reverse the first half of the string.

string s = "abcdefgh"; length $\rightarrow n = 8$

// reverse first half $\rightarrow 0$ to $n/2$ $s \rightarrow dcbaefgh$

```
count << 5;
```

Ques : Input a string of length greater than 5 and reverse the substring from position 2 to 5 using inbuilt functions.

```
string str = "Raghav"  
           0 1 2 3 4 5
```

```
reverse ( str.begin()+1 , str.begin()+5) ;
```

substr()



substring ?

```
string s = "abc";
```



a , ab , abc , b , bc , c

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Ques : Input a string of even length and return the second half of that string using inbuilt substr function

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`to_string()` → Important
↓

integer

It converts integer to string

```
int n = 12345
```

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Ques : Return the total number of digits in a number without using any loop.

Hint : Try using inbuilt `to_string()` function.

$n = 1234$
↓
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Summary :

- 1) string s = "abcd"; push-back(), pop-back()
- 2) functions builtin → length, to-string, substr, reverse,
- 3) cin >> str, getline(cin, str)

↓

one
word

↓

entire line
- 4) s = "abc", t = "xyz"

s = s + t → s = abcxyz

Thank you!

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