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Newcomers Training

String

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String Definition

- What is the **String** ?

  String is an array of characters and it has some special functions to help.
  The library of the **String** is ***#include<string>***

- What is the **String** functions ?

1- str.size() / str.length()

2- str.push_back()

3- str.pop_back()

4- str.erase()

5- str.substr()

6- str.resize()

7- str.insert()

8- str.back()

9- getline()

String Functions

1- str.size() / str.length()

This function return the size / length of the string, in other word, it return the number of characters that the string has.

```
#include<iostream>
#include<string>
using namespace std;
int main(){
    string s = "ahmed";
    cout << s.size() << endl;
    return 0;
}
```

Output : 5

String Functions

2- str.push_back(char C)

This function add the character (C) in the end of the string.

```
#include<iostream>
#include<string>
using namespace std;
int main(){
    string s = "Ahmed";
    s.push_back('F');
    cout << s << endl;
    return 0;
}
```

Output : AhmedF

String Functions

3- str.pop_back()

This function remove the last character from the string.

```
#include<iostream>
#include<string>
using namespace std;
int main(){
    string s = "ahmed";
    s.pop_back();
    cout << s << endl;
    return 0;
}
```

Output : ahme

String Functions

4- str.erase(int pos, int len)

This function remove a substring from the string.
This substring start from index (**pos**) and the length of this substring is (**len**)
0 <= pos < str.size(), if (pos) doesn`t satisfy this condition, you will get Runtime Error

str.erase(int pos)
this line will remove a substring, start from index (**pos**) to the end of the string.

```
#include<iostream>
#include<string>
using namespace std;
int main(){
    string s = "Ibrahim";
    s.erase(1, 4);
    cout << s << endl;
    return 0;
}
```

Output : Iim

String Functions

5- str.substr(int pos, int len)

This function return a substring from the string.
This substring start from index (**pos**) and the length of this substring is (**len**)
0 <= pos < str.size(), if (pos) doesn`t satisfy this condition, you will get Runtime Error

str.substr(int pos)
this line will return a substring, start from index (**pos**) to the end of the string.

```
#include<iostream>
#include<string>
using namespace std;
int main(){
    string s = "Ibrahim";
    cout << s.substr(2, 5) << endl;
    return 0;
}
```

Output : rahim

String Functions

6- str.resize(int len)

This function change the size of the string to (**len**).

- if (**len**) is smaller than the original size of the string, the string will contain the first (**len**) characters and the remain characters will be removed.

- if (**len**) is greater than the original size of the string, the string add white spaces in the end of it until it`s size will equal (**len**)

```
#include<iostream>
#include<string>
using namespace std;
int main(){
    string a = "Mohamed";
    string b = "Ahmed";
    a.resize(2);
    b.resize(7);
    cout << b << a;
    return 0;
}
```

Output : Ahmed Mo

String Functions

7- str.insert(int pos, string S)

This function insert a string or a character to the original string.
This function will start to insert (**S**) in index (**pos**) in the original string and shift right the remaining characters

```
#include<iostream>
#include<string>
using namespace std;
int main(){
    string a = "Aed";
    a.insert(1, "hm");
    cout << a;
    return 0;
}
```

Output : Ahmed

String Functions

8- str.back()

This function return the last character in the string

```
#include<iostream>
#include<string>
using namespace std;
int main(){
    string s = "Ibrahim";
    cout << s.back() << endl;
    return 0;
}
```

Output : m

String Functions

9- getline(cin, string S)

This function help you to take all the line in the string with the white spaces.

getline(cin, string S, **char** c**)**
This line will take all the line until he found the character (**c**) then stop and will not take (**c**).

```
#include<iostream>
#include<string>
using namespace std;
int main(){
    string a;
    getline(cin, a);
    cout << a;
    return 0;
}
```

Input : Ahmed Mohamed Ali

Output : Ahmed Mohamed Ali

For more information about **string** visit this Link

Now it's time to practise and solve the problems of string

String Sheet

Good luck <3