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Institute of Technology of Cambodia

TP-03
String Function
in C++

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1. C++ Strings

Strings are used for storing text.

A **string** variable contains a collection of characters surrounded by double quotes.

To use strings, you must include an additional header file in the source code, the **<string>** library:

Example:

```
// Include the string library
#include <string>

// Create a string variable
string greeting = "Hello";
```

2. String Concatenation

The + operator can be used between strings to add them together to make a new string. This is called concatenation and you can also concatenate strings with the **append()** function.

Example:

```
string firstName = "John ";
string lastName = "Doe";
string fullName1 = firstName + lastName;

string fullName2 = firstName + " " + lastName;

string fullName3 = firstName.append(lastName);
```

3. User Input Strings

It is possible to use the extraction operator >> on **cin** to display a string entered by a user. And we often use the **getline()** function to read a line of text.

Example:

```
string firstName;
cout << "Type your first name: ";
cin >> firstName; // get user input from the keyboard
cout << "Your name is: " << firstName;

getline (cin, fullName);
cout << "Your name is: " << fullName;
```

4. String Functions

String Length

To get the length of a string, use function `length()` or `size()`.

Example:

```
string txt = "ABCDEFGHIJKLMNOPQRSTUVWXYZ";  
cout << "The length of the txt string is: " << txt.length();  
cout << "The length of the txt string is: " << txt.size();
```

String Lowercase & Uppercase

The `tolower()` and `toupper()` function used to convert all char in string to Lowercase or Uppercase string.

Example:

```
// Initializing string  
string str = "DSP is for practice.";  
  
for (int i = 0; i < str.length(); i++)  
{  
    str[i] = tolower(str[i]);  
}  
cout<< "\nThe Given String in Lowercase = " << str;  
  
for (int i = 0; i < str.length(); i++)  
{  
    str[i] = toupper(str[i]);  
}  
cout<< "\nThe Given String in Uppercase = " << str;
```

Problem1:

Write a C++ program to concatenate a string. The user is required to input his/her firstname then his/her lastname. The program display username by concatenating the firstname and lastname together.

E.g: Input firstname: jack

Input lastname: rose

=> Output:

username of the user is: jack_rose

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Problem2:

Write a C++ program ask a user for a text. Display the total character of the input string.

E.g: Input a text: Everyone

=> Output:

The text "Everyone" has 8 characters.

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Problem3:

Write a C++ program to get a firstname from a user. Find the first letter and last letter of the input firstname.

E.g: Input: Stark

=> Output:

Your name is Stark.

The first letter of your name is S and the last letter of your name is k.

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Problem4:

Write a C++ program to ask a user to input a piece of text. Convert the text to uppercase. Display on screen both the source input and the converted text.

E.g: Input: Hello everyone! HOW ARE YOU TODAY?

=> Output:

uppercase: HELLO EVERYONE! HOW ARE YOU DONIG TODAY?

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