String / Character Functions

What are String / Character Functions in C++?

EXAMPLES OF CHAR/STRING FUNCTIONS

# isalnum() - Character Function

How is "isalnum()" used in C++?

## Explanation

**isalnum()** is used to check whether the given argument is alphanumeric character (integer or uppercase/lowercase alphabets). This function returns zero when the argument does not have any of them.

### Syntax:

int isalnum ( int c );

#### Example :

|  |
| --- |
| #include <iostream.h> #include <ctype.h> int main() { char a; cout << "Enter a alphanumeric character::\n" << endl; cin >> a; if(isalnum(a)) { cout << "Alpha-numeric character"; } else { cout << "Not a Alpha-numeric"; } return 0; } |

**Result :**

Enter a alphanumeric character::  
3  
Alpha-numeric character

In the above example, this function is used to check if the entered number is alphanumeric. It checks if the ASCII value passed in has a character equivalent to a number of letter.

# isalpha() - Character Function

How is "isalpha()" used in C++?

## Explanation

**isalpha()** function is used to check whether the given argument is an alphabet. It returns zero when the argument does not have any of them.

### Syntax:

int isalpha ( int c );

#### Example :

|  |
| --- |
| #include <iostream.h> #include <ctype.h> int main() { char a; cout<<"Enter a Alphabet: "; cin >>a; if(isalpha(a)) { cout << "Good entered a alphabet\n"; } else { cout << "Not an alphabet\n"; } return 0; } |

**Result :**

Enter a Alphabet : e  
Good entered a alphabet

In the above example, this function is used to check if the entered character is in the range "a-z" or "A-Z". Based on the ASCII value , it will check if it is an alphabetic character or not.

# isdigit() - Character Function

How is "isdigit()" used in C++?

## Explanation

**isdigit()** function is used to check the character whether it is between 0-9 or a decimal. It returns zero when the argument is not a decimal or an integer in the given range.

### Syntax:

int isdigit ( int c );

#### Example :

|  |
| --- |
| #include <iostream.h> #include <ctype.h> int main() { char a; cout<< "Enter a digit between 0-9: "; cin >> a; if (isdigit(a)) { cout << "Entered a digit\n"; } else { cout << "Not a digit\n"; } return 0; } |

**Result :**

Enter a digit between 0-9 : e  
Not a digit

In the above example, this function is used to check if the entered character is a decimal or not. It has been checked using ASCII values.

# tolower() - Character Function

How is "tolower()" used in C++?

## Explanation

**tolower()** function returns the lowercase of the parameter if its a letter, otherwise returns the same parameter without any change. It converts string to lowercase characters. The letter to convert may differ based on the locale settings, the default letters would be from a-z.

### Syntax:

int tolower( int ch);

#### Example :

|  |
| --- |
| #include <iostream.h> #include <ctype.h> int main() { int n; char c; char str[]="ABCDEFGH123!"; cout << "String after using tolower is::"; for ( n=0 ; str[n]!='' ; n++) { c=str[n]; putchar (tolower(c)); } return 0; } |

**Result :**

String after using tolower is::abcdefgh123

In the above example, "tolower()" function is used to convert the letter to lowercase characters, but the integers are displayed as it is.

# toupper() - Character Function

How is "toupper()" used in C++?

## Explanation

**toupper()** function returns the uppercase of the parameter if its a letter, otherwise returns the same parameter without any change. It converts string to uppercase characters. The letter to convert may differ based on the locale settings, the default letters would be from A-Z.

### Syntax:

int toupper( int ch);

#### Example :

|  |
| --- |
| #include <iostream.h> #include <ctype.h> int main() { int n; char c; char str[]="aaaaa3434bbbb"; cout << "String after using toupper is::"; for ( n=0 ; str[n]!='' ; n++) { c=str[n]; putchar (toupper(c)); } return 0; } |

**Result :**

String after using toupper is::AAAAA343BBBB

In the above example, "toupper()" function is used to convert the string to uppercase characters, but the integers are displayed as it is.

PALINDROME STRING!!

#include<iostream>

using namespace std;

int main( )

{

char str[80];

cout<<"Enter string: ";

cin.getline(str, 80);

int l; *//Hold length of string*

*//finding length of string*

for(l = 0; str[l] != '\0'; l++);

*//Comparing first element with last element till middle of string*

int i;

for(i = 0; (i < l/2) && (str[i] == str[l - i - 1]); i++);

if(i == l/2)

cout << "Palindrome";

else

cout << "Not a palindrome";

return 0;

}

Write a program to find a substring within a string. If found display its starting position.

#include<iostream>

using namespace std;

int main( )

{

char str1[80], str2[80];

cout<<"Enter first string: ";

cin.getline(str1, 80);

cout<<"Enter second string: ";

cin.getline(str2, 80);

int l = 0; *//Hold length of second string*

*//finding length of second string*

for(l = 0; str2[l] != '\0'; l++);

int i, j;

for(i = 0, j = 0; str1[i] != '\0' && str2[j] != '\0'; i++)

{

if(str1[i] == str2[j])

{

j++;

}

else

{

j = 0;

}

}

if(j == l)

cout<<"Substring found at position "<< i - j + 1;

else

cout<<"Substring not found";

return 0;

}

Write a C++ program to compare two strings they are exact equal or not.

#include<iostream>

using namespace std;

int main( )

{

char str1[80], str2[80];

cout<<"Enter first string: ";

gets(str1);

cout<<"Enter second string: ";

gets(str2);

int i;

for (i = 0; str1[i] == str2[i] && str1[i]!= '\0' && str2[i] != '\0'; i++);

if(str1[i] - str2[i] == 0)

cout << "Strings are equal";

else

cout << "Strings are not equal";

return 0;

}

Write a program to convert a string in uppercase.

#include<iostream>

using namespace std;

int main( )

{

char str[80];

cout << "Enter a string: ";

cin.getline(str,80);

for(int i = 0; str[i] != '\0'; i++)

{

str[i] = (str[i] >= 'a' && str[i] <= 'z') ? (str[i] - 32) : str[i];

}

cout << "\nConverted string: " << str;

return 0;

}