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SATRLAR BILAN ISHLASH

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Reja

- C++ dasturlash tilida satrlar.
- C++ dasturlash tilida string funksiyalari bilan ishlash.
- Amaliy mashqlar.

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Shartli belgilar

- Eslab qoling
- Bilib oling
- Misol uchun
- Mumkin emas
- Uyga topshiriqlar
- Amaliy yordam

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C++ dasturlash tilida satrlar

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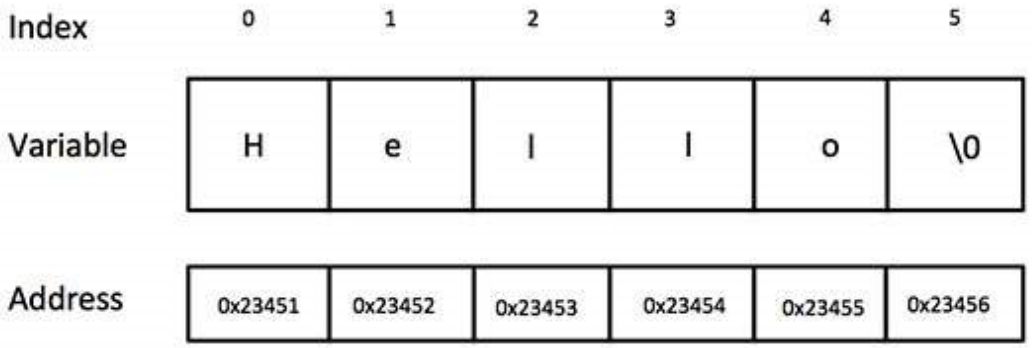
Eslab qoling

Kundalik hayotimizda ishlatiladigan so’zlar, so’zlardan tashkil topgan gaplar hamda turlicha belgilar va raqamlar bilan ifodalanuvchi ma’lumotlarni biz C++ dasturlash tilida string tipli ma’lumotlar deb yuritamiz. Hamda C++ dasturlash tilida string tipli ma’lumotlar bilan ishlash uchun ***<string.h>*** kutubxonasi kerak bo’ladi.

Bilib oling

string tipli ma’lumotlar aslida char toifali belgilardan tashkil topgan bir o’lchovli massiv elementlariga teng hisoblanadi.



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C++ dasturlash tilida string funksiyalari bilan ishlash

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Eslab qoling

C++ dasturlash tilida string toifali o’zgaruvchilar bilan ishlashda qulaylik yaratish maqsadida maxsus vazifalarni bajaruvchi funksiyalar yaratilgan. Ushbu funksiyalar bilan quyidagi slaydlarda tanishib chiqamiz.

Funksiya	Izoh
length()	Kiritilgan satrning uzunligini aniqlash.
size()	Kiritilgan satrning uzunligini aniqlash.
resize()	Matnning uzunligini o’zgartrish.
assign()	Satrli o’zgaruvchilarga qiymat berish.
append()	Satrning davomiga satr ulash.
erase()	Satrning biror qismini o’chirish.
clear()	Satrni tozalash (to’liq o’chirish).
capacitiy()	Satr egallagan xotira xajmi.

Qo‘shimcha ma’lumot

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Bilib oling

getline() – ushbu funksiya string toifali ma’lumotlarni ekrandan o’qib olishda ishlatiladi. Odatda ushbu funksiya cin operatoriga ham o’xshab ketadi ammo cin operatoridan farqi shundaki cin operatori bir nechta probellar bilan berilgan satr ichidan faqat birinchi kirtilgan so’zni qabul qiladi. getline() funksiyasi esa aksincha barcha kirtilgan so’zlarni probellar bilan birgalikda o’qiydi.

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```cpp
#include<iostream>
#include<string.h>

using namespace std;

int main(){
    string str;

    getline(cin, str);
    cout << " >>> " << str << endl;
    return 0;
}
```

```
Hello world!
>>> Hello world!
Process returned 0 (0x0)
execution time : 0.047 s
Press any key to continue.
```

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Bilib oling

Length() – ushbu funksiya kiritilgan satrning belgilar sonini aniqlashda foydalaniladi.

Misol uchun:

```
str = "Hello world!"; natija n = 12
```

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```
#include<iostream>
#include<string.h>

using namespace std;

int main(){
    string str = "Hello world!;

    int n = str.length();
    cout << " >>> " << n << endl;
    return 0;
}
```

```
>>> 12


Process returned 0 (0x0)
execution time : 0.047 s
Press any key to continue.
```

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Bilib oling

size() – ushbu funksiya ham length() funksiyasiga o’xshab kirtilgan satrning belgilar sonini aniqlashda foydalaniladi.

Misol uchun:

```
str = "Hello world!"; natija n = 12
```

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```cpp
#include<iostream>
#include<string.h>

using namespace std;

int main(){
    string str = "Hello world!;

    int n = str.size();
    cout << " >>> " << n << endl;
    return 0;
}
```

```
>>> 12


Process returned 0 (0x0)
execution time : 0.047 s
Press any key to continue.
```

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Bilib oling

resize() – ushbu funksiya orqali biz C++ dasturlash tilida ixtiyoriy string toifali satrning uzunligi ustida turli amallarni bajarishimiz mumkin bo’ladi.

Misol uchun:

string str = "Hello"; **Natija:** str.resize(3) >>> Hel

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```cpp
#include<iostream>
#include<string.h>

using namespace std;

int main(){
    string str = "Hello world!;

    string word = str.resize(3);
    cout << " >>> " << word << endl;
    return 0;
}
```

```
>>> Hel


Process returned 0 (0x0)
execution time : 0.047 s
Press any key to continue.
```

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```
#include<iostream>
#include<string.h>

using namespace std;

int main(){
    string str = "Hello world!;
    int n = str.size();
    string word = str.resize(n+3, '@');
    cout << " >>> " << word << endl;
    return 0;
}
```

```
>>> Hello world!@@@


Process returned 0 (0x0)
execution time : 0.047 s
Press any key to continue.
```

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Bilib oling

assign() – ushbu funksiya orqali biz C++ dasturlash tilida ixtiyoriy string tipli ma’lumotlardan nusxa olish mumkin bo’ladi hamda string tipli o’zgaruvchilarga qiymat berish uchun ham qo’llaniladi.

Misol uchun:

```
string str = "Hello worlod!";    s = str.assign();
s = "Hello worlod!"
```

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```
#include<iostream>
#include<string.h>

using namespace std;

int main(){
    string str = "Hello world!;

    string word = str.assign(str);
    cout << " >>> " << word << endl;
    return 0;
}
```

```
>>> Hello world!


Process returned 0 (0x0)
execution time : 0.047 s
Press any key to continue.
```

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```
#include<iostream>
#include<string.h>

using namespace std;

int main(){
    string str = "Hello world!;

    string word = str.assign(str, 3, 4);
    cout << " >>> " << word << endl;
    return 0;
}
```

```
>>> lo w


Process returned 0 (0x0)
execution time : 0.047 s
Press any key to continue.
```

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Bilib oling

append()– ushbu funksiya orqali biz C++ dasturlash tilida ixtiyoriy string tipli ma’lumotning davomiga ikkinchi bir string tipli ma’lumotni ulash mumkin bo’ladi.

Misol uchun:

```
string str = "Hello worlod";   string s = "!!!";
str.append(s);    Natija: str = "Hello worlod!!!";
```

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```cpp
#include<iostream>
#include<string.h>

using namespace std;

int main(){
    string str = "Hello world";
    string s = "!!!";
    string word = str.append(s);
    cout << " >>> " << word << endl;
    return 0;
}
```

```
>>> Hello world!!!


Process returned 0 (0x0)
execution time : 0.047 s
Press any key to continue.
```

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```
#include<iostream>
#include<string.h>

using namespace std;

int main(){
    string str = "Hello world";
    string s = "!@#";
    string word = str.append(s, 2, 1);
    cout << " >>> " << word << endl;
    return 0;
}
```

```
>>> Hello world#


Process returned 0 (0x0)
execution time : 0.047 s
Press any key to continue.
```

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Bilib oling

erase()– ushbu funksiya orqali biz C++ dasturlash tilida ixtiyoriy string toifali ma’lumotni belgilangan qism bo’yicha yoki to’liqligicha o’chirib tashlash uchun qo’llaniladigan funksiya hisoblanadi.

Misol uchun:

```
string str = "Hello worlod";   s = str.erase(5);
```

Natija: str = "Hello";

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```cpp
#include<iostream>
#include<string.h>

using namespace std;

int main(){
    string str = "Hello world";
    str.erase(5);
    cout << " >>> " << str << endl;
    return 0;
}
```

```
>>> Hello


Process returned 0 (0x0)
execution time : 0.047 s
Press any key to continue.
```

PDP ACADEMY

```cpp
#include<iostream>
#include<string.h>

using namespace std;

int main(){
    string str = "Hello world";
    str.erase(5, 3);
    cout << " >>> " << str << endl;
    return 0;
}
```

```
>>> Hellorld


Process returned 0 (0x0)
execution time : 0.047 s
Press any key to continue.
```

PDP ACADEMY

```cpp
#include<iostream>
#include<string.h>

using namespace std;

int main(){
    string str = "Hello world";
    str.erase();
    cout << " >>> " << str << endl;
    return 0;
}
```

```
>>>


Process returned 0 (0x0)
execution time : 0.047 s
Press any key to continue.
```

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Bilib oling

clear() – ushbu funksiya orqali biz C++ dasturlash tilida ixtiyoriy string toifali ma’lumotlarni to’liqligicha o’chirib tashlash uchun yoki string toifali o’zgaruvchining qiymatini tozalash uchun qo’llaniladi.

Misol uchun:

```
string str = "Hello worlod";   str.clear();
```

Natija: str = "";

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```cpp
#include<iostream>
#include<string.h>

using namespace std;

int main(){
    string str = "Hello world";
    str.clear();
    cout << " >>> " << str << endl;
    return 0;
}
```

```
>>>


Process returned 0 (0x0)
execution time : 0.047 s
Press any key to continue.
```

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Amaliy mashqlar

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Uyga topshiriq

1

S satr berilgan. S satrida uchragan har bir belgini 2 marta orttiruvchi funksiya tuzing.

Amaliy yordam

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Uyga topshiriq

2

C belgisi va S satri berilgan. S satrida uchragan har bir C belgisini 2 marta orttiruvchi funksiya tuzing.

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Uyga topshiriq

3

2 ta satr berilgan. Ularni qisqa+uzun+qisqa shaklida birlashtirilishidan hosil bo'lgan satrni hosil qiluvchi funksiya tuzing.

Masalan:

S1 = "salom", S2 = "olam" => **Natija**: S3 = "olamsalomolam".

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Uyga topshiriq

4

N1, N2 natural sonlari va s1, s2 satrlari berilgan. S1 satrning dastlabki N1 ta belgisidan va s2 satrning oxirgi N2 ta belgisidan iborat yangi satr hosil qiluvchi funksiya tuzing.

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Uyga topshiriq

5

S1 va S2 satrlari berilgan. Agar S2 satri S1 satrida bo’lsa true, aks holda false chiqaruvchi funksiya tuzing.

Amaliy yordam

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Uyga topshiriq

6

S1 va S2 satrlari berilgan. S2 satrini S1 satrida takrorlanishlar sonini chiqaruvchi funksiya tuzing.

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Uyga topshiriq

7

S1 va S2 satrlari berilgan. S1 satrida birinchi uchragan S2 satrini o’chirib tashlovchi funksiya tuzing. Agar S1 satrida S2 satri uchramasa S1 o’zgarishsiz qolsin.

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Uyga topshiriq

8

S1, S2 va S3 satrlari berilgan. S1 satrida birinchi uchragan S2 satrini S3 satriga o’zgartiruvchi funksiya tuzing.

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Uyga topshiriq

9

Name nomli satr berilgan, masalan "Aziz", ushbu ko’rinishda natijani qaytaring(return qiling): "Hello Aziz!" hosil qiluvchi funksiya tuzing.

```
helloName("Bob") → "Hello Bob!"
helloName("Alice") → "Hello Alice!"
helloName("X") → "Hello X!"
```

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Uyga topshiriq

10

Ikkita a va b satr berilgan. Natijani abba ketma-ketlikda qaytaring. Masalan, "Hi" va "Bye" satrlar bo’lsa, natija "HiByeByeHi" bo’lsin. Funksiya tuzilsin.

```
makeAbba("Hi", "Bye") → "HiByeByeHi"
makeAbba("Yo", "Alice") → "YoAliceAliceYo"
makeAbba("What", "Up") → "WhatUpUpWhat"
```

Amaliy yordam

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Uyga topshiriq

11

2 ta a va b satr berilgan. a satr uzunligi 4 ga tengligi ma’lum. a satrni 2 va 3-harflari o’rtasiga b satrni joylashtirib natijani qaytaruvchi funksiya tuzilsin.

```
makeOutWord("<<>>", "Yay") → "<<Yay>>"
makeOutWord("<<>>", "WooHoo") → "<<WooHoo>>"
makeOutWord("[[]]", "word") → "[[word]]"
```

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Uyga topshiriq

12

Uzunligi kamida 2 ga teng bo’lgan satr berilgan. Shu satrni oxirgi 2 ta harfini 3 marta yonma-yon qilib natijani qaytaruvchi funksiya tuzilsin.

```
extraEnd("Hello") → "lololo"
extraEnd("ab") → "ababab"
extraEnd("Hi") → "HiHiHi“
```

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Uyga topshiriq

13

Satr berilgan. Ushbu satrni birinchi 2ta harfini returnga qaytaring. Agar satr uzunligi 2 dan kichik bo’lsa, o’sha satrni o’zini qaytaruvchi funksiya tuzing.

```
firstTwo("Hello") → "He"
firstTwo("abcdefg") → "ab"
firstTwo("ab") → "ab"
```

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Uyga topshiriq

14

Juft uzunlikdagi satr berilgan. Shu satrni birinchi yarmini qaytaruvchi funksiya tuzing.

```
firstHalf("WooHoo") → "Woo"
firstHalf("HelloThere") → "Hello"
firstHalf("abcdef") → "abc"
```

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Uyga topshiriq

15

Kamida 2 ta harfdan iborat satr berilgan. Shu satrni boshidagi va oxiridagi harflarisiz natijani qaytaruvchi funksiya tuzing.

```
withoutEnd("Hello") → "ell"
withoutEnd("java") → "av"
withoutEnd("coding") → "odin"
```

Amaliy yordam

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Uyga topshiriq

16

2 ta a va b satrlar berilgan. Shu satrlarni eng kichik uzunlikdagisi short, eng uzuni long bo’lsin. short+long+short ko’rinishda natijani qaytaruvchi funksiya tuzing.

```
comboString("Hello", "hi") → "hiHellohi"
comboString("hi", "Hello") → "hiHellohi"
comboString("aaa", "b") → "baaab"
```

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Uyga topshiriq

17

Uzunligi kamida 1 ga teng bo’lgan 2ta satr berilgan. Ushbu satrlarni 1-harflarini hisobga olmasdan, satrlarni qo’shib natijani qaytaruvchi funksiya tuzing.

```
nonStart("Hello", "There") → "ellohere"
nonStart("java", "code") → "avaode"
nonStart("shotl", "java") → "hotlava"
```

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Uyga topshiriq

18

Satr berilgan. Satrni birinchi 2 ta harfini olib, davomiga qo’yib, natijani qaytaruvchi funksiya tuzilsin.

```
left2("Hello") → "lloHe"
left2("java") → "vaja"
left2("Hi") → "Hi"
```

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Uyga topshiriq

19

Satr va Boolean tipidagi front nomli o’zgaruvchi berilgan. Agar front – true bo’lsa, satrni birinchi harfini, front – false bo’lsa, satrni oxirgi harfini qaytaruvchi funksiya tuzilsin.

```
theEnd("Hello", true) → "H"
theEnd("Hello", false) → "o"
theEnd("oh", true) → "o"
```

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Uyga topshiriq

20

Satr va n soni berilgan. Satrni birinchi n ta harfi va oxirgi n ta harfidan iborat yangi satrni qaytaruvchi funksiya tuzing.

```
nTwice("Hello", 2) → "Helo"
nTwice("Chocolate", 3) → "Choate"
nTwice("Chocolate", 1) → "Ce"
```

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E’tiboringiz uchun raxmat