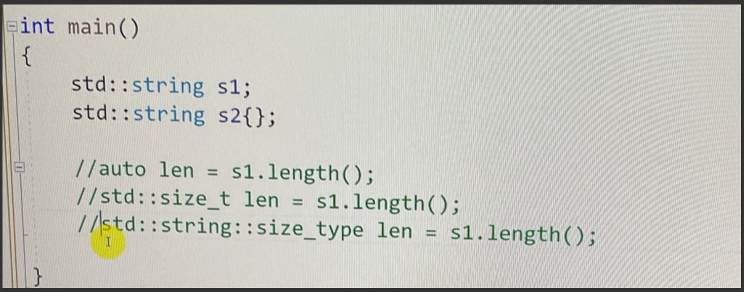
* String Length:

→ const member functiondır.

→ türü size_t / auto ile



```cpp
int main()
{
    std::string s1;
    std::string s2{};

    //auto len = s1.length();
    //std::size_t len = s1.length();
    //std::string::size_type len = s1.length();
}
```

• Default initialization olduğu için length = 0

→ Fakat: String Class ayrıca bir contanerdır. Containerların genel bir fonksiyonu → size const üye fonksiyonu vardır.

→ length ile aynı

→ generic programlamada size kullan

• Empty: • Karakter var mı yok mu, sınamasını yapan ve boolean döndüren member function

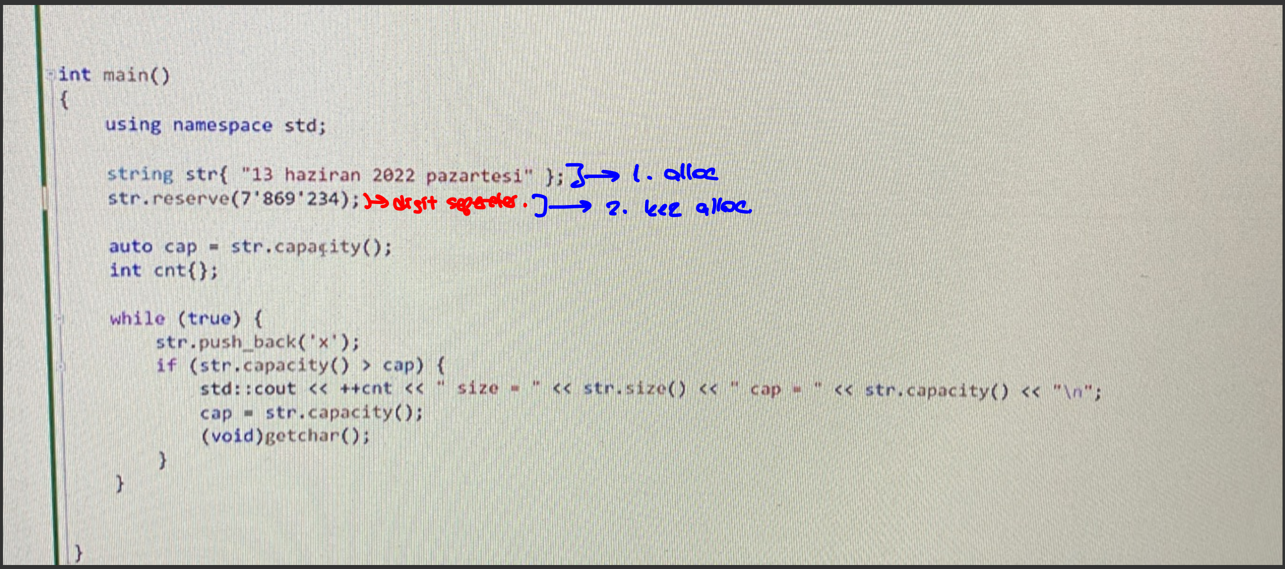
• Clear: • Diğer containerlarda da var. String'in içini siler

• Capacity: • Realloc Etmeden ! alabileceği üye sayısı.

- Hatırlatma: 1) String için 3 pointer gerekir → start
→ push back
→ capacity

2) Otomatik ömür → stackte
Dinamik ömür → heap
Global → Data

• Reserve: • String kapasitesini reserve eder.



```cpp
int main()
{
    using namespace std;

    string str{ "13 haziran 2022 pazartesi" };
    str.reserve(7'869'234);

    auto cap = str.capacity();
    int cnt{};

    while (true) {
        str.push_back('x');
        if (str.capacity() > cap) {
            std::cout << ++cnt << " size = " << str.size() << " cap = " << str.capacity() << "\n";
            cap = str.capacity();
            (void)getchar();
        }
    }
}
```

→ 1. alloc

→ digit seperator.

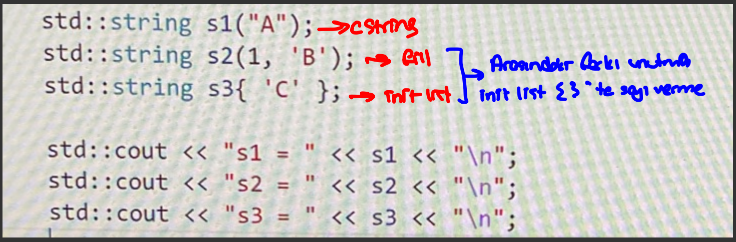
→ 2. kez alloc

- **Erase:** • Verilen sayıdan itibaren siler

- **Shrink to Fit:** • Sığdırınca, allocated alanı daraltır.

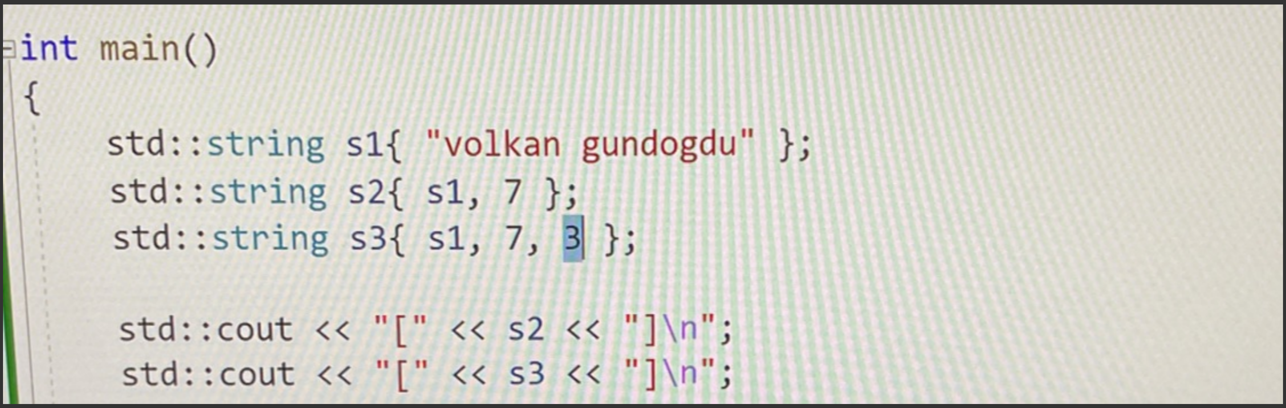
* String Sınıfı Constructorları:

- char parametreli string constructor yok. std::string s1('A') → syntax hatası
- tek parametreli yapmak için: CString constructor
  fill constructor
  Initializer list constructor.



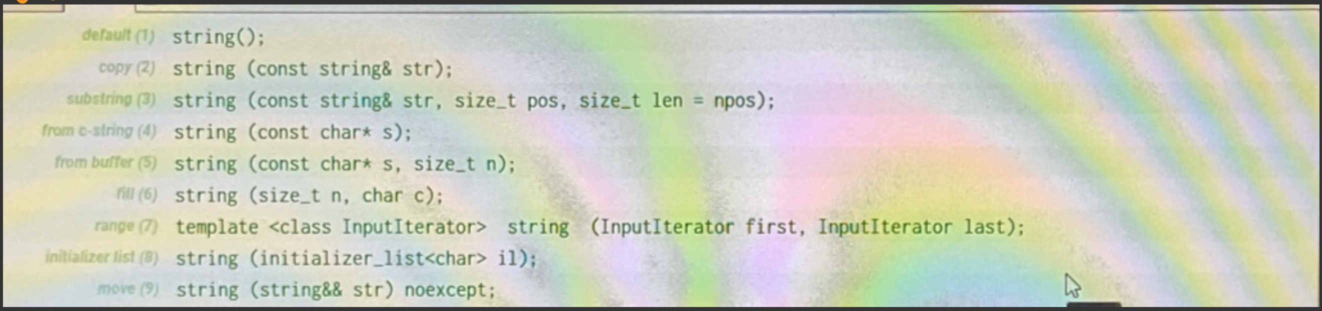
```cpp
std::string s1("A");
std::string s2(1, 'B');
std::string s3{ 'C' };

std::cout << "s1 = " << s1 << "\n";
std::cout << "s2 = " << s2 << "\n";
std::cout << "s3 = " << s3 << "\n";
```

→ Substring Constructors:

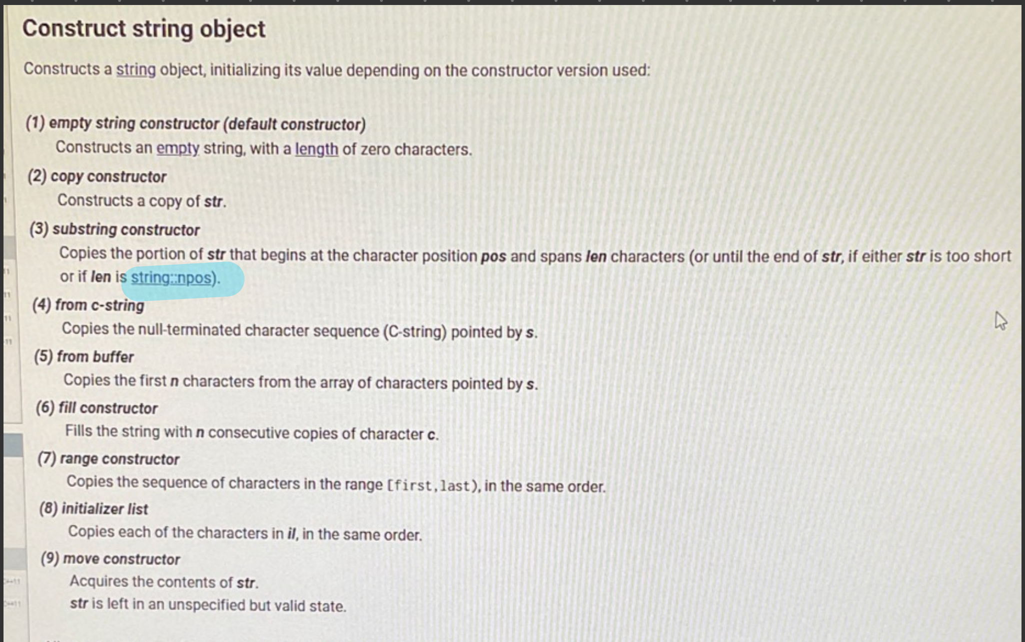


```cpp
int main()
{
    std::string s1{ "volkan gundogdu" };
    std::string s2{ s1, 7 };
    std::string s3{ s1, 7, 3 };

    std::cout << "[" << s2 << "]\n";
    std::cout << "[" << s3 << "]\n";
```

→ Özet:



```
          default (1)  string();
             copy (2)  string (const string& str);
        substring (3)  string (const string& str, size_t pos, size_t len = npos);
    from c-string (4)  string (const char* s);
      from buffer (5)  string (const char* s, size_t n);
             fill (6)  string (size_t n, char c);
            range (7)  template <class InputIterator>  string  (InputIterator first, InputIterator last);
 initializer list (8)  string (initializer_list<char> il);
             move (9)  string (string&& str) noexcept;
```



Construct string object

Constructs a string object, initializing its value depending on the constructor version used:

(1) empty string constructor (default constructor)
Constructs an empty string, with a length of zero characters.

(2) copy constructor
Constructs a copy of ***str***.

(3) substring constructor
Copies the portion of ***str*** that begins at the character position ***pos*** and spans ***len*** characters (or until the end of ***str***, if either ***str*** is too short or if ***len*** is string::npos).

(4) from c-string
Copies the null-terminated character sequence (C-string) pointed by ***s***.

(5) from buffer
Copies the first ***n*** characters from the array of characters pointed by ***s***.

(6) fill constructor
Fills the string with ***n*** consecutive copies of character ***c***.

(7) range constructor
Copies the sequence of characters in the range `[first,last)`, in the same order.

(8) initializer list
Copies each of the characters in ***il***, in the same order.

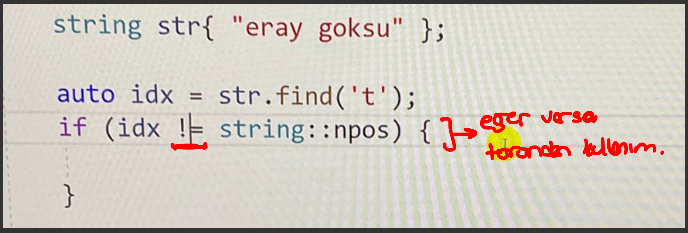
(9) move constructor
Acquires the contents of ***str***.
str is left in an unspecified but valid state.

* String Arama Fonksiyonları:

*npos: • Constexpr static bir veri elemanı

• İki önemli işlevi var: Arama fonksiyonlarında kullanılır. → eğer iteratör kullanılmazsa arama işlemleri için string sınıfının kendi global arama fonksiyonları kullanılır.

• Değeri size_t türünden alabilecek en büyük değer

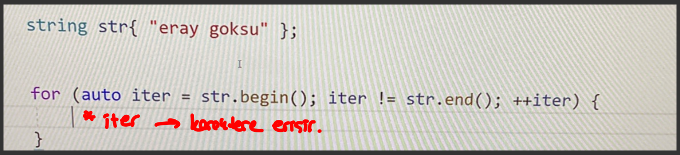


```cpp
string str{ "eray goksu" };

auto idx = str.find('t');
if (idx != string::npos) {
}
```

} → eğer varsa türünden kullanım.

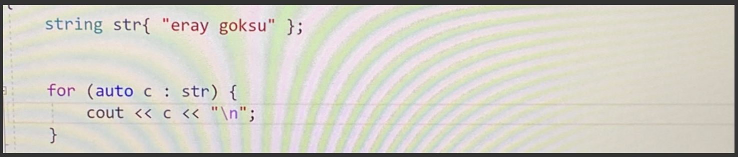
• Begin ve End:

• Range based for loop:



```cpp
string str{ "eray goksu" };

for (auto iter = str.begin(); iter != str.end(); ++iter) {
}
```

*iter → karaktere erişir.

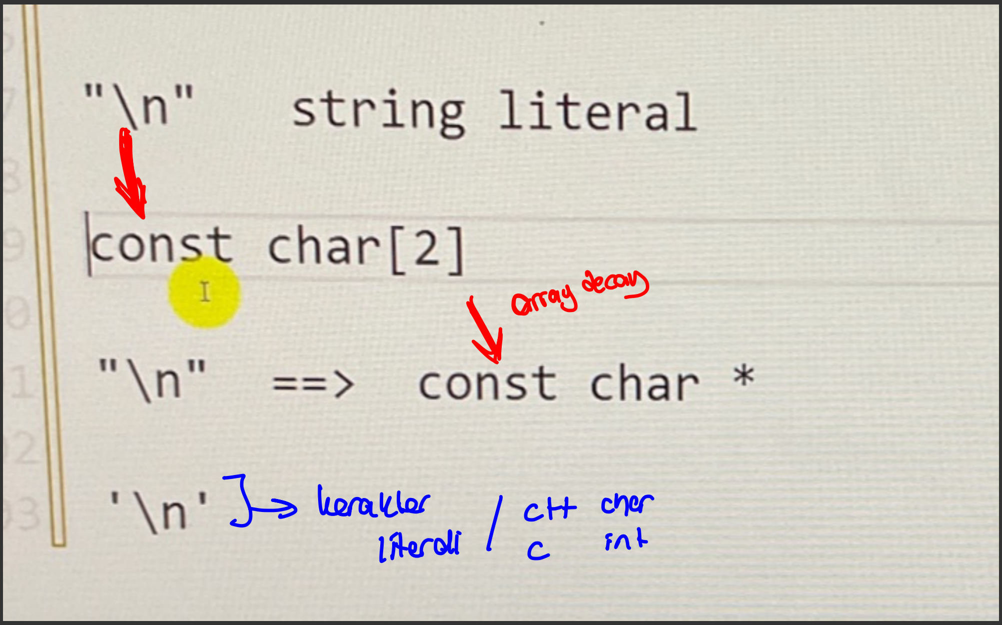


```cpp
string str{ "eray goksu" };

for (auto c : str) {
    cout << c << "\n";
}
```

• Okuma amaçlı kullanımda olur. Fakat değiştirme işleminde yerel değerleri değiştiriyor.

↳ Değiştirme için auto &c olmalı

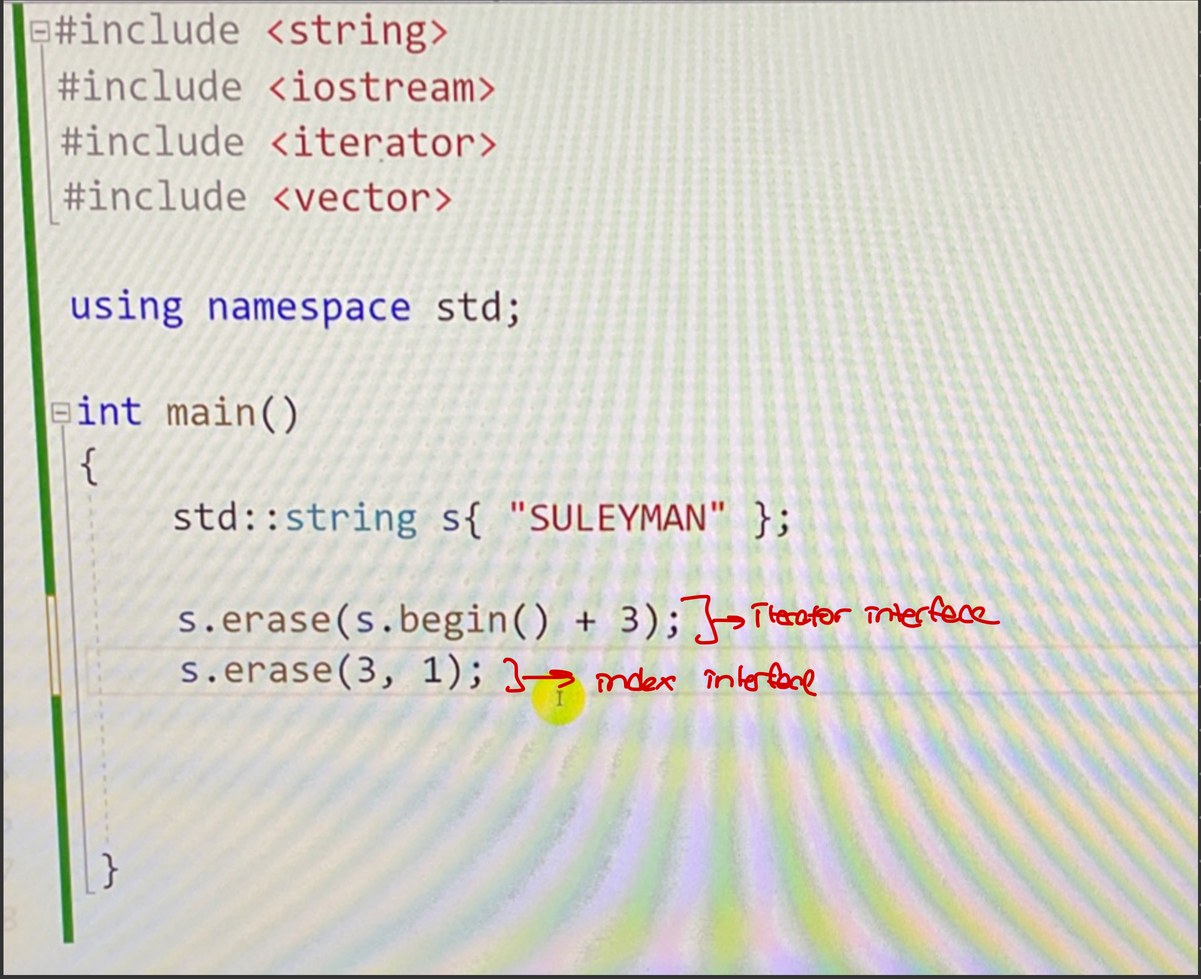
→ STL kitabından devam edicem. Önemli kısımları al videodan



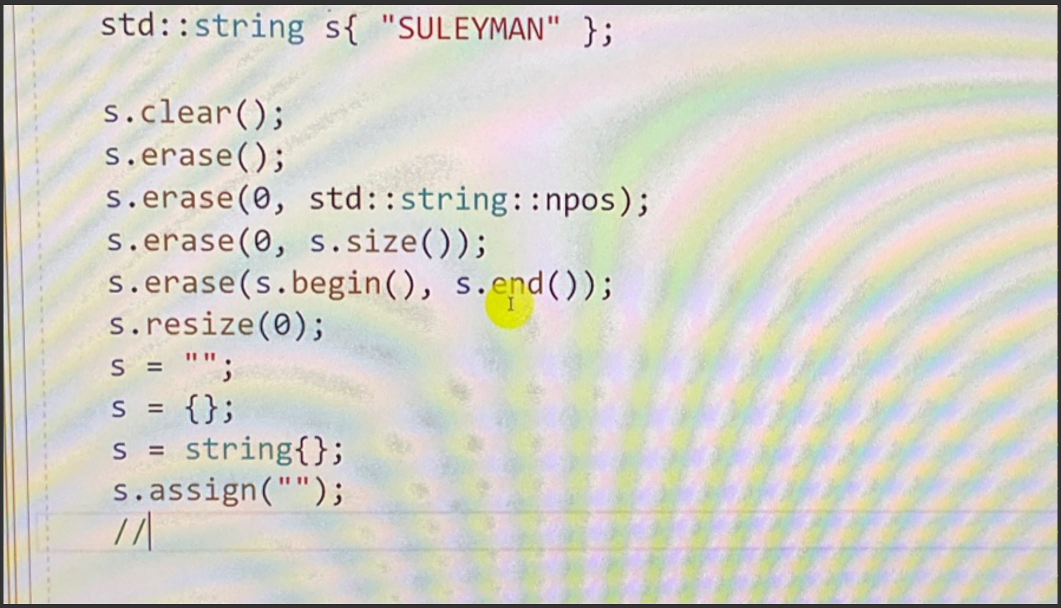
```
"\n"    string literal

const char[2]

"\n"   ==>   const char *

'\n'
```

array decay

} → karakter literali / C++ char, C int



```cpp
#include <string>
#include <iostream>
#include <iterator>
#include <vector>

using namespace std;

int main()
{
    std::string s{ "SULEYMAN" };

    s.erase(s.begin() + 3); } → Iterator interface
    s.erase(3, 1); } → index interface


}
```



```cpp
    std::string s{ "SULEYMAN" };

    s.clear();
    s.erase();
    s.erase(0, std::string::npos);
    s.erase(0, s.size());
    s.erase(s.begin(), s.end());
    s.resize(0);
    s = "";
    s = {};
    s = string{};
    s.assign("");
    //
```

→ String silmenin 1001 yolu

→ Ezberle valla soruyormuş