



MORE C-STRING FUNCTIONS

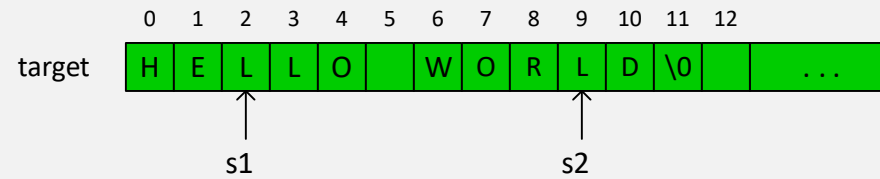
`strchr, strrchr`

`strstr`

`strtok, strtok_s, and strtok_r`



strchr AND strrchr



```
char* strchr(char* target, int c);  
const char* strchr(const char* target, int c);
```

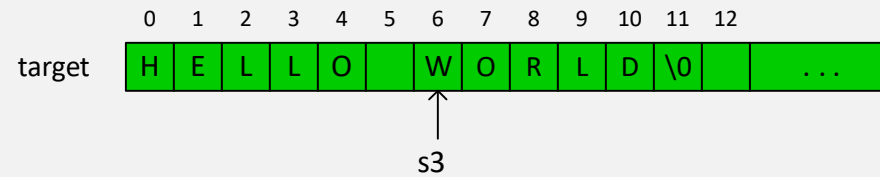
```
char* strrchr(char* target, int c);  
const char* strrchr(const char* target, int c);
```

```
const char* target = "HELLO WORLD";  
const char* s1 = strchr(target, 'L');  
const char* s2 = strrchr(target, 'L');
```

```
cout << s1 << endl;  
cout << s2 << endl;
```



strstr



```
char* strstr(char* target, const char* sub);  
const char* strstr(const char* target, const char* sub);
```

```
const char* target = "HELLO WORLD";  
const char* s3 = strstr(target, "WORLD");
```

```
cout << s3 << endl;
```



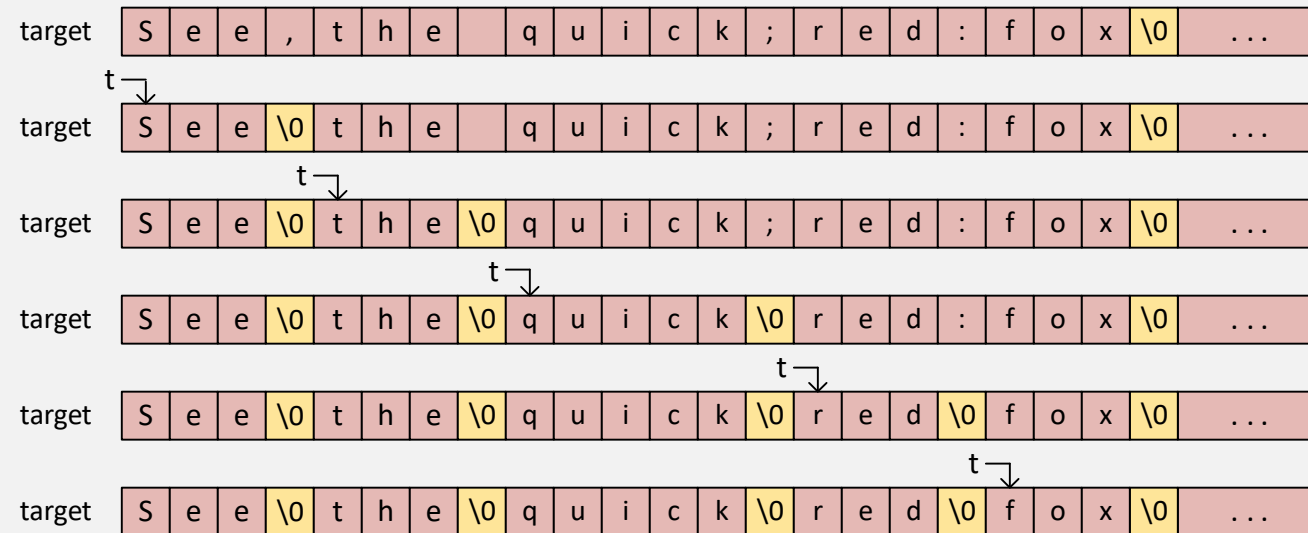
PARSING / TOKENIZING

- Parsing breaks a string into groups of meaningful characters called *tokens*.
- Adjacent tokens are separated by one or more *delimiters*.
- Cranston Q. Snort, (801) 555-1234, 115 Elm St.
- `total = update + 1;`
- `// this is a comment`
- `See, the quick; red: fox;`



strtok

`char* strtok(char* target, const char* delims);`





strtok EXAMPLE

```
char target[100] = "See,the quick;red:fox";  
const char* delims = " ,:;";
```

```
char* name = strtok(target, delims);  
char* addr = strtok(nullptr, delims);  
char* phone = strtok(nullptr, delims);
```

```
char* token = strtok(target, delims);  
while (token != nullptr)  
{  
    cout << token << endl;  
    token = strtok(nullptr, delims);  
}
```



IMPLEMENTING strtok

```
char* strtok(char* target, const char* delims)
{
    static char* context = nullptr;

    if (target != nullptr)
        context = target;

    . . .
}
```



strtok_s: MICROSOFT EXAMPLE strtok_r: LINUX EXAMPLE

```
char* strtok_s(char* target, const char* delims, char** context);  
char* strtok_r(char* target, const char* delims, char** context);
```

```
char target[100] = "See, the quick; red: fox";  
const char* delims = " , : ;";  
char* context = nullptr;  
  
char* token = strtok_s(target, delims, &context);  
while (token != nullptr)  
{  
    cout << token << endl;  
    token = strtok_s(nullptr, delims, &context);  
}
```