MORE C-STRING FUNCTIONS

strchr, strrchr

strstr

strtok, strtok_s, and strtok_r

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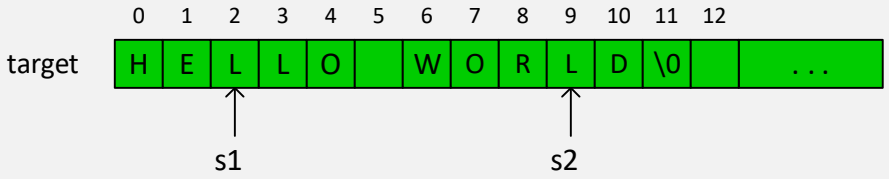
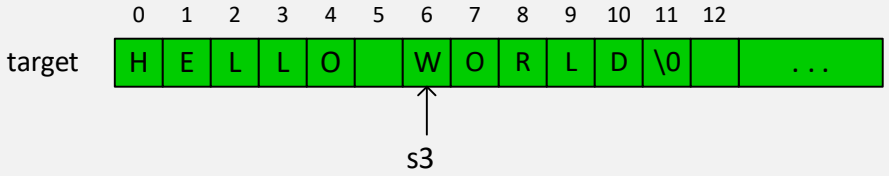
strchr AND strrchr




```
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);
```

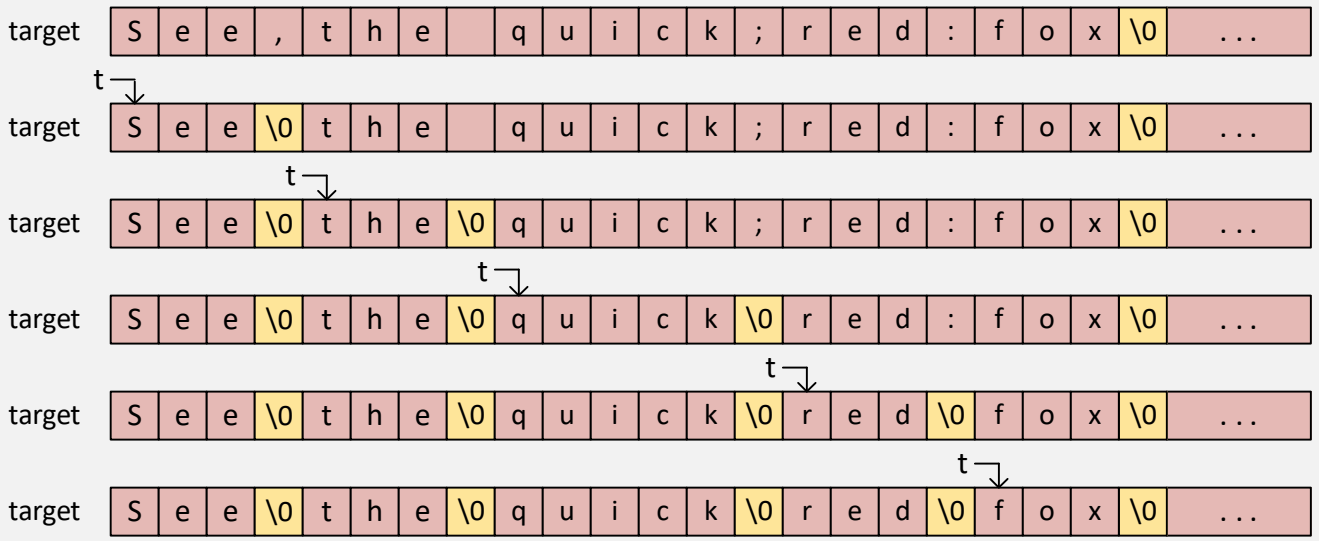
```
const char* target = "HELLO WORLD";
const char* s3 = strstr(target, "WORLD");

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);
}
```