CSC 270 – Survey of Programming Languages

C Lecture #4 Addendum - Substrings

`strcpy()`

- `strcpy(s, t)` copies the contents of `t` into `s`.
- This is standard way of assigning a value to a string, i.e., we copy it character by character instead of copying over the address at which it starts.

`strcpy()` – A Example

```
#include    <stdio.h>

int   main(void)
{
      char  s[80];

      strcpy(s, "Let's learn strings");
      printf("%s", s);

      return(0);
}
```

Output

```
Let's learn strings
```

`strncpy()`

- **`strncpy(s, t, n)`** copies the contents of **`t`** into **`s`** but no more than n-1 characters.
- This is standard way of assigning a value to a string, i.e., we copy it character by character instead of copying over the address at which it starts.

`strncpy()` – An Example

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

int   main(void)
{
      char  s[80], t[80];

      strcpy(s, "The quick brown fox jumped "
            "over the lazy dogs");
      strncpy(t, s, 10);
      /*
       * You need this in case s was more
       * than 10 characters
       */
      t[10] = '\0';
```

```
      printf("s = \"%s\"\n", s);
      printf("t = \"%s\"\n", t);

      return(0);
}
```

strcat()

- **strcat(s, t)** concatenates **s** and **t**, saving the new string in **s**.
- Example

```
strcpy(s, "Robert");
strcpy(t, "Michael");
strcat(s, t);
printf("s = \"%s\"\n", s);
```

Output

```
s = "RobertMichael"
```

strncat()

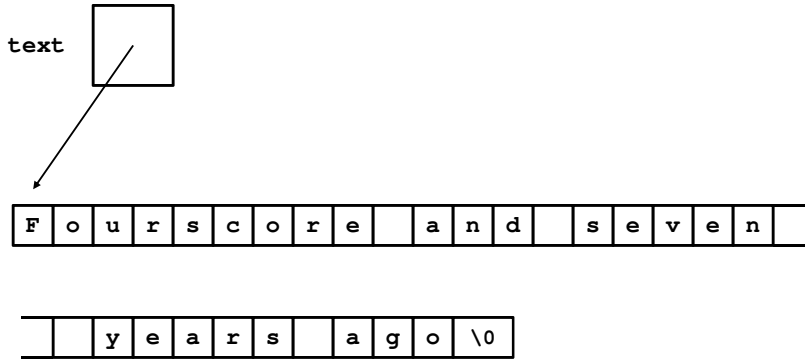
- **strncat(s, t, n)** concatenates **s** and **t**, saving the new string in **s**. At most it will copy **n** characters.
- Example

```
strcpy(s, "Robert");
strcpy(t, "Michael");
strncat(s, t, 5);
printf("s = \"%s\"\n", s);
```

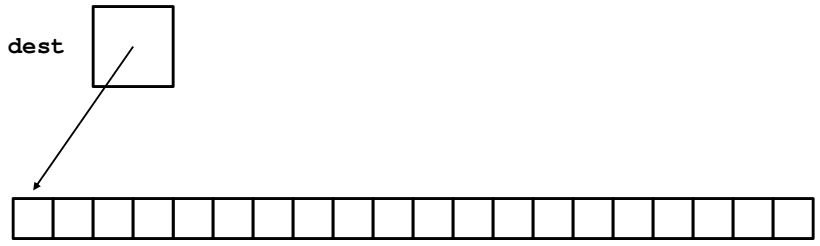
Output

```
s = "RobertMicha"
```

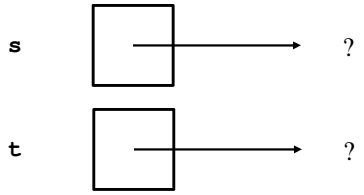
```
char    text[] = "Fourscore and seven years ago";
```



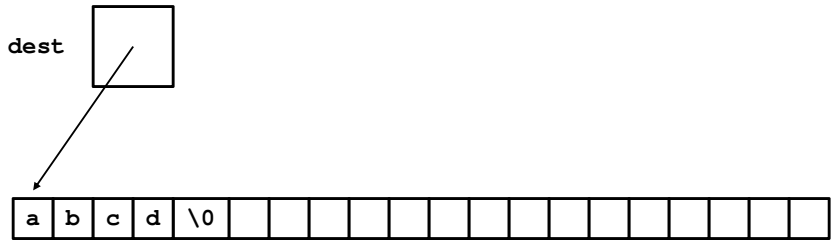

```
char    dest[20];
```



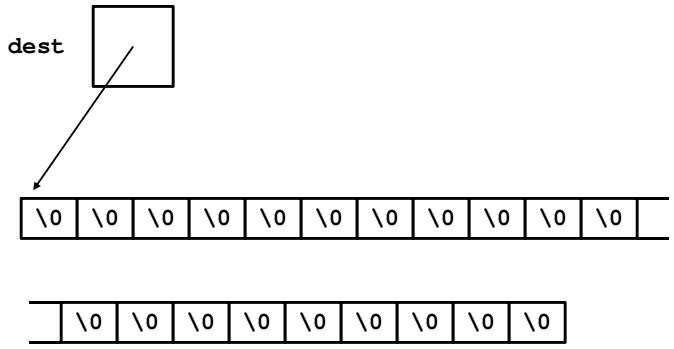
```
char     *s, *t;
```



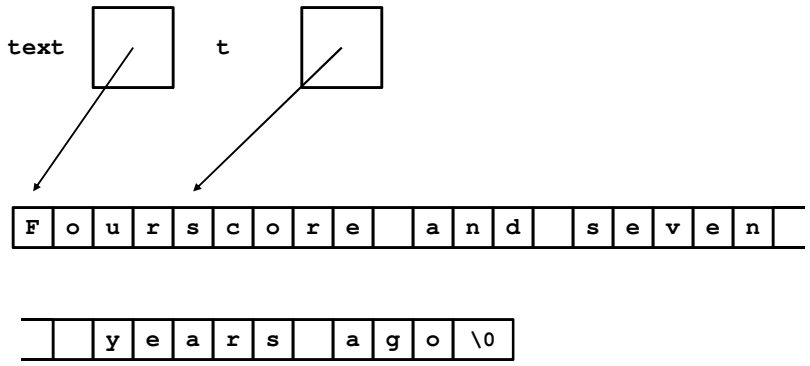

```
strncpy(dest, "abcd", 10);
```



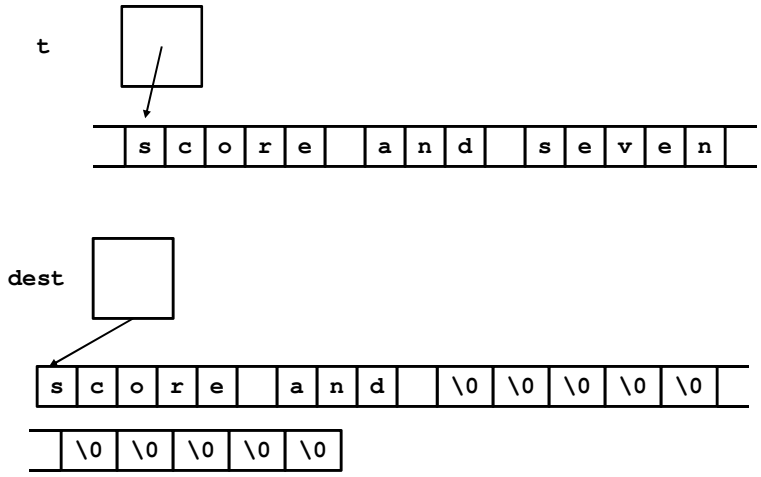
```
memset(dest, '\0', sizeof(dest));
```



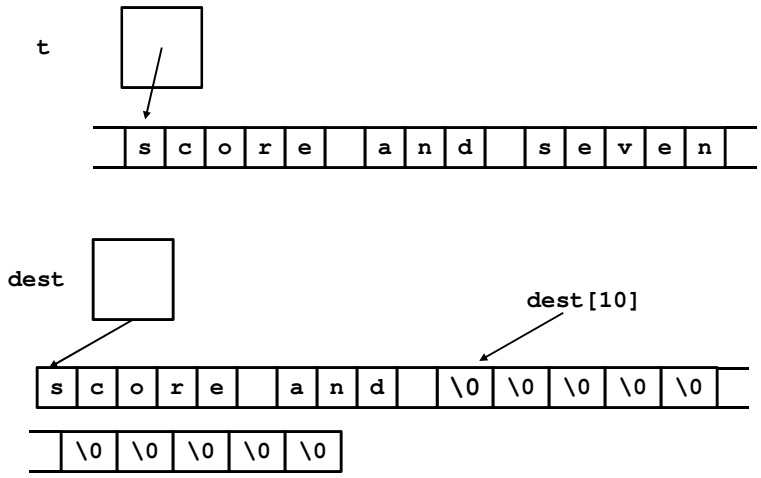

```
t = strstr(text, "score");
```



strncpy(dest,t, 10);



dest[10] = '\0';



substring.c

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

char    text[] = "Fourscore and seven years ago";

int     main(void)      {
        char    dest[20];
        char    *s, *t;
        int     i;

        strncpy(dest, "abcd", 10);
        printf("%s\n", dest);
```

```
        memset(dest, '\0', sizeof(dest));
        t = strstr(text, "score");
        strncpy(dest,t, 10);
        dest[10] = '\0';

        for (i = 0; i < 20; i++)
                putchar(dest[i]);
        putchar('\n');
        for (i = 0; i < 20; i++)
                printf("%d  ", (int)dest[i]);
        putchar('\n');

        for (i = 0; i < 20; i++)
                printf("%d  ", (int)t[i]);
        putchar('\n');
```

```
        printf("%s\n", t);
        printf("%s\n", dest);
        return(0);
}
```

The output from **substring.c**

```
abcd
score and
115  99  111  114  101  32  97  110  100 ⌋
32 0  0  0  0  0  0  0  0  0  0
115  99  111  114  101  32  97  110  100 ⌋
32  115  101  118  101  110  32  121  101 ⌋
97  114
score and seven years ago
score and
```