Everything we've looked at so far has come out of C's standard libraries. As one last example, let's write a substr function, for extracting a substring out of a larger string. We might call it like this:

char string8[] = "this is a test";

char string9[10];

substr(string9, string8, 5, 4);

printf("%s\n", string9);

The idea is that we'll extract a substring of length 4, starting at character 5 (0-based) of string8, and copy the substring to string9. Just as with strcpy, it's our responsibility to declare the destination string (string9) big enough. Here is an implementation of substr. Not surprisingly, it's quite similar to strcpy:

substr(char dest[], char src[], int offset, int len)

{

int i;

for(i = 0; i < len && src[offset + i] != '\0'; i++)

dest[i] = src[i + offset];

dest[i] = '\0';

}

If you compare this code to the code for mystrcpy, you'll see that the only differences are that characters are fetched from src[offset + i] instead of src[i], and that the loop stops when len characters have been copied (or when the src string runs out of characters, whichever comes first).