## ESC 101: FUNDAMENTALS OF COMPUTING

Lecture 18

Feb 11, 2010

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## **OUTLINE**

1 Strings

2 Printf and Scanf

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### STRINGS IN C

- Strings are represented by an array of characters in C.
- The last element of the array is the NULL character, or the ASCII value 0.
- This is represented by '\0'.

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## EXAMPLE

```
main()
{
    char a_string[27];
    for (int i = 0; i < 26; i++)
        a_string[i] = 'a' + i;
    a_string[26] = '\0';
    printf("The string is: %s\n", a_string);
```

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#### Constant Strings

Another way of writing strings is by enclosing it in double quotes:

"This is a string"

These are called string constants.

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#### Constant Strings

- Strings stored as arrays can be modified, but constant strings cannot.
- Strings cannot be a part of an expression in C.

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#### INVALID STATEMENTS

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char a_string[27];
char b_string[27];
a_string = "abcd";
b_string = a_string;
(a_string == b_string)
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## Valid Use of Strings

- Strings can be passed as argument to functions.
- If the passed string is an array, it can be modified.
- However, if it is a constant, it cannot be modified.
- printf and scanf functions accept string arguments.

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STRINGS

2 Printf and Scanf

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The general format of printf is:

```
printf( <string constant>, argument-1, ..., argument-k )
```

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- The <string constant> is a constant string specifying what needs to be output.
- It contains special commands, each starting with %.
- There are exactly *k* special commands.

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## Suppose <string constant> is:

"<s1>%d<s2>%c<s3>%s<s4>%f<s5>"

#### Its meaning is:

- Output string <s1>,
- Output the value stored in argument-1 treating it as integer,
- Output string <s2>,
- Output the value stored in argument-2 treating it as a symbol,
- Output string <s3>,
- Output value stored in argument-3 treating it as a string,
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• Output value stored in argument-4 treating it as a real number, ...

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