C Strings
Strings

- Strings versus Single characters
- Pointers versus Arrays
- Accessing Array of Strings with Pointers
Strings

• Strings are arrays of characters treated as a single unit and terminated by '\0' (null).

• The \0 occupies one char in the array of characters.

```c
Hello\0
```
Strings

- A string is accessed by a pointer to the first character in the string.
- Since the value of a string is the address of its first character, in C a string is a pointer!
char c = 'W';
char *s = "George Bush";
char s2[] = "Hillary";
s2[0] = 'B';
s2[4] = '\0';

printf("%s\n", s2);
A string can be stored into an array using `scanf`.

```c
char president[20];
scanf("%s", president);
```
```c
/* An Example of an Array of Strings accessed using a string pointer */
int main()
{
    int i, j;
    char let = 'A';
    char cray[3][10];
    char *cptr[3];
    for (j = 0; j < 3; j++)
    {
        cptr[j] = &cray[j][0];
        for (i = 0; i < 9; i++)
        {
            cray[j][i] = let + i;
        }
        cray[j][9] = '\0';
    }
    for (j = 0; j < 3; j++)
    {
        printf("j = %d, char = %s\n", j, cptr[j]);
    }
    return 0;
}
```

```
./charray
j = 0, char = BCDEFGHIJ
j = 1, char = CDEFGHIJK
j = 2, char = DEFGHIJKL
```
More on Strings!!

- not right now

- Read parts of Chapter 8 for Program 4