String Exercises

2024 Winter APS 105: Computer Fundamentals
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Lecture 24
1.0.1

Final Exam 2022 (Short)

Complete the following function below to alter a string to remove any leading zeros. You are not allowed to change any part of the provided C program.

```
void printNum(char *str) {
    int i = 0;
    while (str[i] == '0') {
        i++;
    }
    // Complete the C program here to remove leading zeros in the string str
    printf("%s", str);
}

int main(void) {
    char s[10] = "000089876";
    printNum(s);
    return 0;
}
```

If we run the completed program, the output should be 89876.

Final Exam 2022 (Long)

Write a function called `lastStringInString`, the prototype of which is provided below, that returns the pointer to the last occurrence of the string `s1` in the string `s2`. If the string `s1` cannot be found in the string `s2`, the function returns `NULL`.
For example, if we are looking for the string `"is"` as `s1` in the string `"This is a sample string"` as `s2`, the pointer to the second `"is"` in the string `s2` will be returned by the function.
Another example, if we are looking for the string `"the"` as `s1` in the string `s2` `"The apple"`, the function should return `NULL`. This is because `'t'` is lower case in `"the"`.
Note: You can use any function from the library `string.h`, **except** for `strstr()`—you are not allowed to use it.

```
char *lastStringInString(char *s1, char *s2) {
```

The following is not testable, but useful!

There's Actually Another Function Prototype for `main`

```
int main(int argc, char *argv[]);
```

This version of `main` allows you to access
arguments the user typed to run your program

`argc` is the number of strings typed to run your program
(short for argument count)

`argv` is an array of C strings typed to run your program
(short for argument values)

Your Operating System Will Remove Whitespace

Assuming you have a program named `dectohex`, if you run it with:

```
dectohex 255
```

then

```
argc: 2
argv[0]: "dectohex"
argv[1]: "255"
```

Let's Write That Program

We'll convert a decimal number to a hexadecimal number

If there are any problems with the input, we'll `exit` with `EXIT_FAILURE`

`atoi` just returns 0 if there's an error, to handle invalid input, we have to write our own

We Got More Practice with Strings

Be sure to review the lecture recording!