Working with Strings

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Lab 3

9/22/17

Problem:

In this week's lab, we were working with strings and how to compare and print strings in different ways. Our problems were to first copy the source code from blackboard and add code to it. Instructions were commented into the code already so all we had to do was read the comments and add code as needed to make the program run correctly.

Analysis:

Problem 1: From problem 1, they had use test the program using a few different symbols to see if we could get the same result. The use of the (!) symbol meant that that thing was going to get printed next. It doesn't matter if the (!) symbol is there or not, the if else statement runs and prints the result just fine. When you get to the end if a string has been entered that is not recognized by the if else statement then another string should be printed that says that the major entered was not recognized. This needs fixed because the printf statement that prints the line prints automatically even if a string is recognized. Within the if statement that reads if an unrecognized string has been entered, they had just flag in the () when they need to say flag == 0. This reads the integer value for flag and if its 0 then the statement will print if not then it won't. We needed the value flag to determine if a recognized major was entered or not. Flag gets updated when a recognized major is entered but remains zero if an unrecognized one is entered.

Problem 2: Frist asked to add a printf that asked a user for a source string. The code would then take an input from the keyboard and store it in sourceString. Then we had to write a string that printed both strings together. The final task was to print the sourceString after it had been replaced by the destinationString.

Problem 3: had use add a printf for the sourceString and the destinationString. They then had use strcat to add the strings together instead of using 2 %s.

Design:

Problem 1: You first need a printf to ask for the users major. Then you need a scanf to take an input from the keyboard and save it to major. This then gets compared in the if else statement already written. The error is in the final if statement. It needs to see if flags is equal to zero which is written as (flag == 0) not just (flag). Once this is changed they code runs fine with no other errors.

Problem 2: First you needed to add the printf to ask for an input from the user. The next thing is a scanf that takes the input from the keyboard for sourceString. Next we need to make a printf that prints both the sourceString and the destinationString together. After that a strcpy is used to copy destinationString into sourceString. Finally we print just sourceString and will have changed to the string from destinationString.

Problem 3: You need to add a printf and a scanf that asks for a sourceString and save the string to sourceString. You then need another one that asks for destinationString and takes a string and saves it to destinationString. The strcat uses string concatenation to add one of the strings to the other one so there isn't 2 %s.
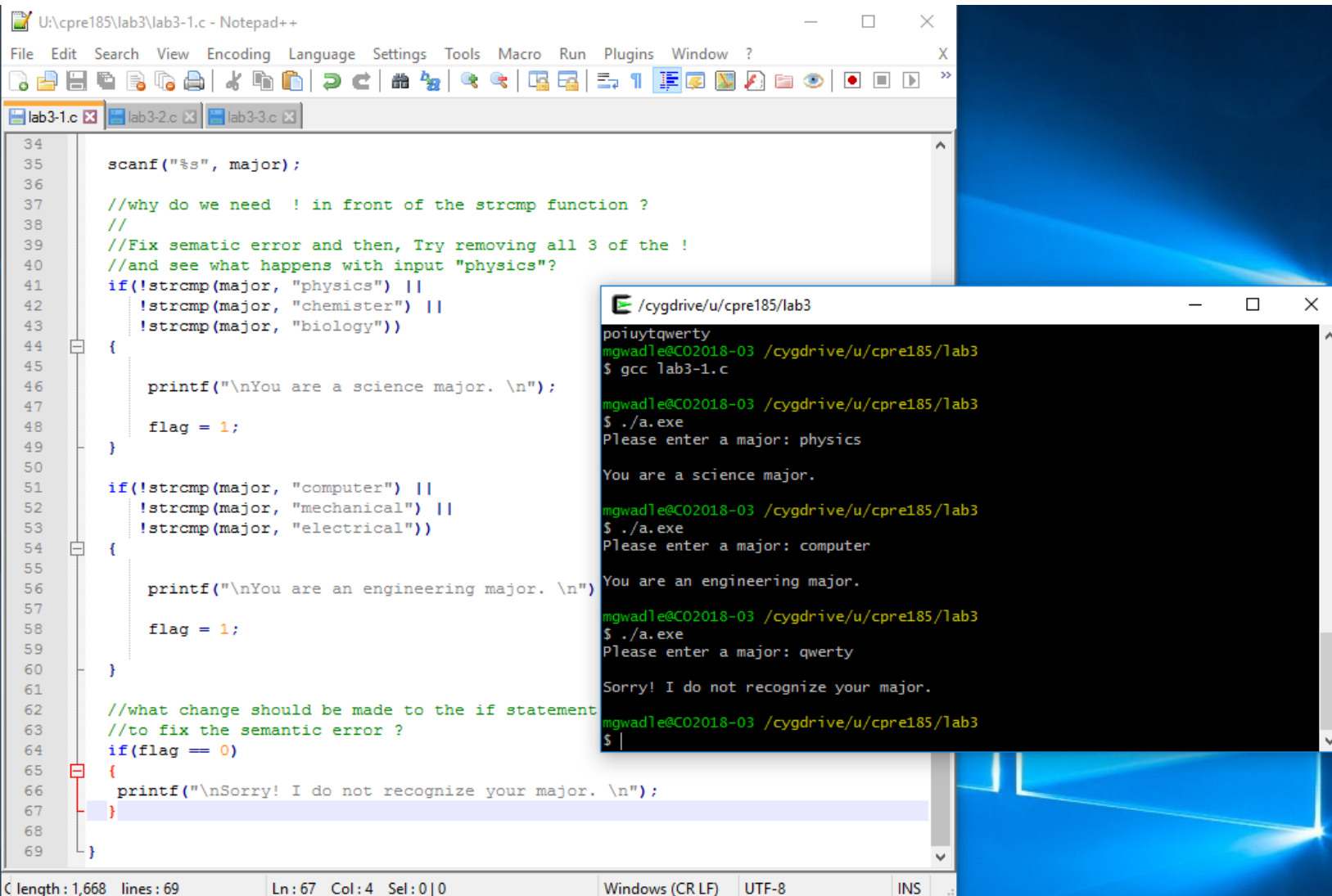
Testing:

Problem 1: For testing I first added the printf and scanf and the following printf to make sure that everything was print correctly and that the scanf was reading correctly. Once that was done I ran it multiple times to see where the error was coming from, changing things every run. Eventually I fixed the problem and the code ran fine.

Problem 2: First added the printf and scanf then ran the code. The code doesn't run properly until you add the final printf at the end that shows the need value for sourceString.

Problem 3: Run the code with the printf and scanf's in there to make sure they're taking data correctly. Then add the printf after the strcat to print the new value for sourceString.

Comments:

       Lab was fairly easy. Only problem I had was with problem 1. I was trying a different approach to get the flag if statement to work properly and it wasn't working. With problems 2 and 3 maybe be a little clearer on what exactly why want as far as a result. A little unclear as to what the difference was between some if the printf statements. In the end everything worked out.

U:\cpre185\lab3\lab3-1.c - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

lab3-1.c   lab3-2.c   lab3-3.c

```
34
35          scanf("%s", major);
36
37          //why do we need  ! in front of the strcmp function ?
38          //
39          //Fix sematic error and then, Try removing all 3 of the !
40          //and see what happens with input "physics"?
41          if(!strcmp(major, "physics") ||
42             !strcmp(major, "chemister") ||
43             !strcmp(major, "biology"))
44          {
45
46              printf("\nYou are a science major. \n");
47
48              flag = 1;
49          }
50
51          if(!strcmp(major, "computer") ||
52             !strcmp(major, "mechanical") ||
53             !strcmp(major, "electrical"))
54          {
55
56              printf("\nYou are an engineering major. \n")
57
58              flag = 1;
59          }
60
61
62          //what change should be made to the if statement
63          //to fix the semantic error ?
64          if(flag == 0)
65          {
66           printf("\nSorry! I do not recognize your major. \n");
67          }
68
69      }
```

/cygdrive/u/cpre185/lab3

```
poiuytqwerty
mgwadle@CO2018-03 /cygdrive/u/cpre185/lab3
$ gcc lab3-1.c

mgwadle@CO2018-03 /cygdrive/u/cpre185/lab3
$ ./a.exe
Please enter a major: physics

You are a science major.

mgwadle@CO2018-03 /cygdrive/u/cpre185/lab3
$ ./a.exe
Please enter a major: computer

You are an engineering major.

mgwadle@CO2018-03 /cygdrive/u/cpre185/lab3
$ ./a.exe
Please enter a major: qwerty

Sorry! I do not recognize your major.

mgwadle@CO2018-03 /cygdrive/u/cpre185/lab3
$ |
```

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lab3-1.c ⊠   lab3-2.c ⊠   lab3-3.c ⊠

```c
 6
 7    int main(void)
 8    {
 9
10        char sourceString[100]; //source string variable
11
12        char destinationString[100] = "overwrite me"; //destination string variable
13
14        //write one printf to prompt the user
15        //to enter a source string
16        /******** YOUR CODE BELOW *********/
17
18        printf("Please enter a source string: ");
19
20        //write one scanf statement to read
21        //the source string from
22        //the keyboard (no spaces in string)
23        /******** YOUR CODE BELOW *********/
24
25
26        scanf("%s", sourceString);
27
28
29        //write one printf to print source and destinati
30        /******** YOUR CODE BELOW *********/
31
32        printf("%s %s\n", sourceString, destinationStrin
33
34        strcpy(destinationString, sourceString);
35
36        //print both source and destination string using
37        // ONE/SINGLE printf statement
38
39        printf("%s", destinationString);
40
41    }
```

length : 953   lines : 41   Ln : 29   Col : 45   Sel : 0 | 0   Windows (CR LF)   UTF-8   INS

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```
You are a science major.

mgwadle@CO2018-03 /cygdrive/u/cpre185/lab3
$ ./a.exe
Please enter a major: computer

You are an engineering major.

mgwadle@CO2018-03 /cygdrive/u/cpre185/lab3
$ ./a.exe
Please enter a major: qwerty

Sorry! I do not recognize your major.

mgwadle@CO2018-03 /cygdrive/u/cpre185/lab3
$ gcc lab3-2.c

mgwadle@CO2018-03 /cygdrive/u/cpre185/lab3
$ ./a.exe
Please enter a source string: qwerty
qwerty overwrite me
qwerty
mgwadle@CO2018-03 /cygdrive/u/cpre185/lab3
$ |
```

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?   X

lab3-1.c ⊠   lab3-2.c ⊠   lab3-3.c ⊠

```c
18        printf("Please enter a  source string: ");
19
20        //write one scanf statement to read
21        //the source string from
22        //the keyboard (no spaces in string)
23        /******** YOUR CODE BELOW *********/
24
25        scanf("%s", sourceString);
26
27
28        //write one printf to prompt the user
29        //to enter a destination string
30        /******** YOUR CODE BELOW *********/
31
32        printf("Please enter a destination string: ");
33
34        //write one scanf statement to read
35        //the destination string from
36        //the keyboard (no spaces in string)
37        /******** YOUR CODE BELOW *********/
38
39
40        scanf("%s", destinationString);
41
42        //write one printf to print source and destinati
43        /******** YOUR CODE BELOW *********/
44
45        printf("%s %s\n", sourceString, destinationStrin
46
47        strcat(destinationString, sourceString);
48
49        //print both source and destination string using
50        // ONE/SINGLE printf statement
51
52        printf("%s", destinationString);
53
```

length : 1,315   lines : 54   Ln : 45   Col : 18   Sel : 0 | 0   Windows (CR LF)   UTF-8   INS

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```
$ ./a.exe
Please enter a major: qwerty

Sorry! I do not recognize your major.

mgwadle@CO2018-03 /cygdrive/u/cpre185/lab3
$ gcc lab3-2.c

mgwadle@CO2018-03 /cygdrive/u/cpre185/lab3
$ ./a.exe
Please enter a source string: qwerty
qwerty overwrite me
qwerty
mgwadle@CO2018-03 /cygdrive/u/cpre185/lab3
$ gcc lab3-3.c

mgwadle@CO2018-03 /cygdrive/u/cpre185/lab3
$ ./a.exe
Please enter a  source string: qwerty
Please enter a destination string: ytrewq
qwerty ytrewq
ytrewqqwerty
mgwadle@CO2018-03 /cygdrive/u/cpre185/lab3
$ |
```