One submission per group (2 students) **SE185: Problem Solving in Software Engineering**

Quiz # 6 (100 points)

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Answer the following questions and make a pdf file that includes the **source code, sample inputs, and outputs**. You must submit the **pdf file and all of the .c files** on Canvas for full credit. Do not forget to add your group partner name on the pdf file and the source codes.

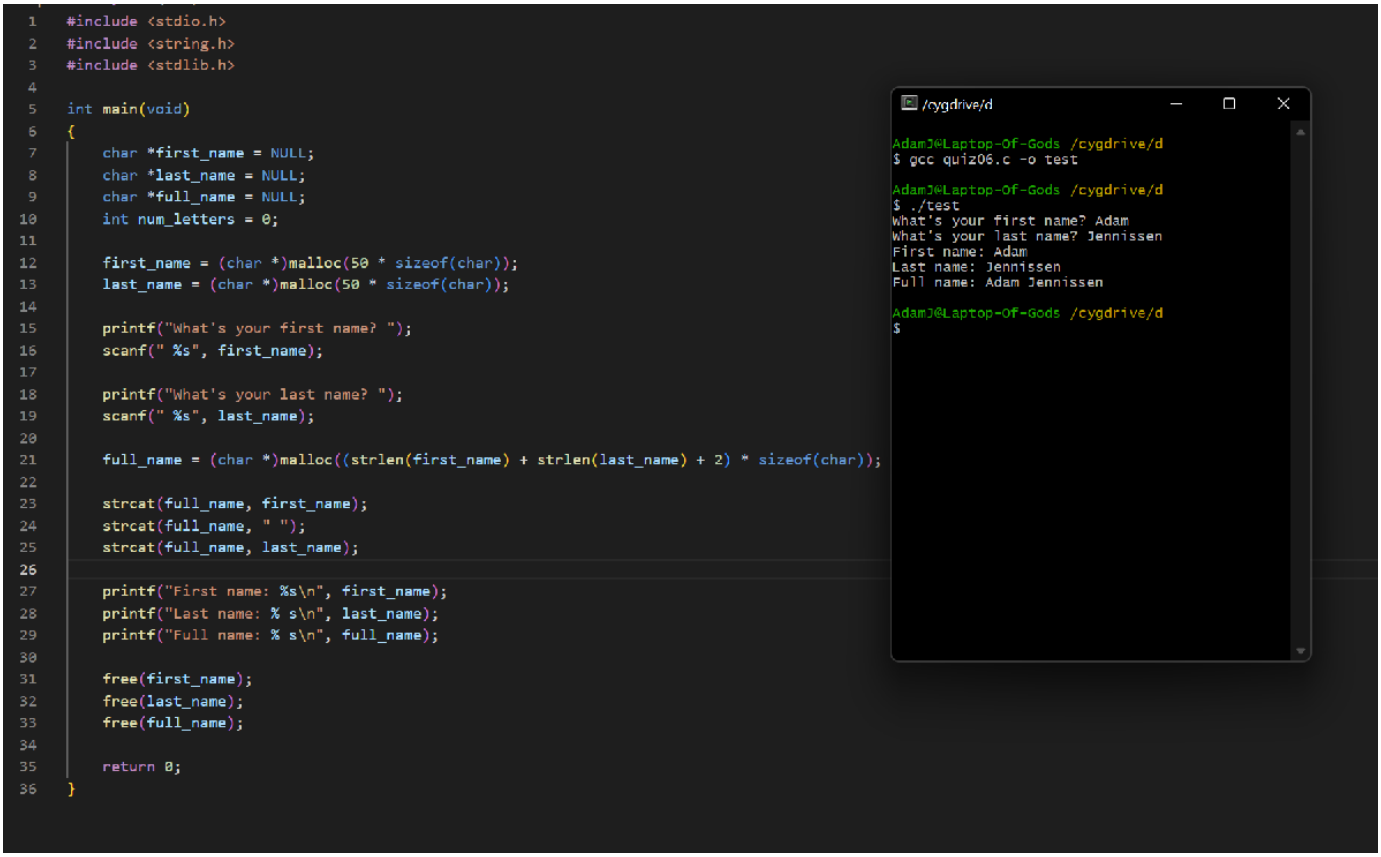
1. (100 points) Write a complete C code that scans a **first** and **last name** into **two separate char arrays** whose memory is **statically allocated**. Your program must put the first and last names together, separated by a space, into a single string (not the char arrays used for the first/last names). Your program must **use the strlen() function** to **dynamically allocate memory** to a **char pointer** which will serve as your final string.

Use a loop to iterate through your final string (char pointer) and count only the number of letters (no spaces, null characters, or other symbols). **Use pointer notation** instead of array notation. Your program must use **malloc() and free().**

Begin by creating these variables **(use these variable names)**:

```
char first_name[50], last_name[50];
char *full_name = NULL; int
num_letters = 0;
```

Inputs and outputs format:


#include <stdio.h>
#include <string.h>
#include <stdlib.h>
int main(void)
{
char *first_name = NULL;
char *last_name = NULL;
char *full_name = NULL;
int num_letters = 0;
first_name = (char *)malloc(50 * sizeof(char));
last_name = (char *)malloc(50 * sizeof(char));
printf("What's your first name? ");
scanf(" %s", first_name);
printf("What's your last name? ");
scanf(" %s", last_name);
full_name = (char *)malloc((strlen(first_name) + strlen(last_name) + 2) * sizeof(char));
strcat(full_name, first_name);
strcat(full_name, " ");
strcat(full_name, last_name);
printf("First name: %s\n", first_name);
printf("Last name: % s\n", last_name);
printf("Full name: % s\n", full_name);
free(first_name);
free(last_name);
free(full_name);
return 0;
}
/cygdrive/d
AdamJ@Laptop-Of-Gods /cygdrive/d
$ gcc quiz06.c -o test
AdamJ@Laptop-Of-Gods /cygdrive/d
$ ./test
What's your first name? Adam
What's your last name? Jennissen
First name: Adam
Last name: Jennissen
Full name: Adam Jennissen
AdamJ@Laptop-Of-Gods /cygdrive/d
$