

**Lab 10**

© INSTRUCTOR: DR. MD. MAHFUZUR RAHMAN

**100 Points**

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**Objectives:**

Today we will be covering the following topics:

1. Practice problems involving strings using a C program.

**Instructions:**

- Attendance is mandatory.
  - Labs must be completed individually.
  - If you have any questions, please do not hesitate to ask TA.
  - Follow submission instructions in the deliverable section.
  - Visit the broader grading criteria after the deliverable section. (last page)
  - Lab assignments are due by 5:00 PM the next day after your lab session.
1. Write a program to replace a particular word by another word in a given string. For example, the word “PASCAL” should be replaced by “C” in the text “It is good to program in PASCAL language.” If the word is not present in the original string, the modified string will be the original string (no modification).

Use the vi editor to create your program and save them as `lab10.c`.

**Hint:** Use `scanf("%[^\n]", str);` to read a string that may include spaces (e.g. "It is good to program"). You may also like to use `strncmp(const char *str1, const char *str2, size_t n);` function to compare only the first `n` characters from `str1` and `str2`.

Use the following output prompt:

```
Enter the string: It is good to program in PASCAL Language
Enter the string to replace: PASCAL
Enter the string to replace with: C
-----
```

```
It is good to program in PASCAL Language
It is good to program in C Language
```

Now, do the following tasks:

- (a) (15 points) Make sure your program generalizes over any strings.
- (b) (15 points) Make sure that you correctly replaced the word with the given word without having any unwanted spaces.
- (c) (15 points) Make sure you correctly used the prompt.
- (d) (30 points) Make sure that your code produces the correct output.
- (e) (10 points) Make sure that you explain your code to the TA or provide enough documentation in your submission.
- (f) (03 points) Start recording your session using the `script` utility.
- (g) (03 points) Show the contents of `lab10.c` using the `cat` command.
- (h) (03 points) Compile `lab10.c` with required flags for the object file name [use `-o`] and C version [`-std=c99`].

- (i) (03 points) Run your program using the appropriate command.
- (j) (03 points) Finish your recording (use the `exit` command).

### Deliverables

For today's lab, clean the text file (.txt) you recorded during your terminal session, if there are unwanted control characters. In other words, make it as you observed during your terminal session. Please name your text file as **last-name\_firstname\_lab10.txt**. You will need to submit the text file (terminal session record) and your C file **lab10.c** to the **Lab 10** dropbox in iCollege.

### Broader Grading Criteria

- If no C (.c) file is submitted (regardless if .txt file submitted or not), a student will receive only 40% for attendance. Submission will not be graded.
- If C file is given but no .txt file (terminal session) is given, a submission will receive maximum 70% (will vary between 40% to 70% based on the correctness of the C program).
- If a .txt file is given along with the .c file, but the .txt file is not clean and not comprehensible to the TA, a submission will receive maximum 80% (will vary between 40% to 80% based on the correctness of the C program).
- If both clean .txt file and the .c file are given, your submission will be normally evaluated based on the tasks and the corresponding point distributions.
- **Screenshots will not satisfy the requirements for code and/or the .txt files submission.**
- There should be compatibility between lab quiz performance and problem-solving (programming) performance. Otherwise, you may be called for an interview with Lab TA.