

ECE 175: Computer Programming for Engineering Applications

Homework Assignment 8

Conventions: Name your C programs as *hwx.py.c* where *x* corresponds to the homework number and *y* corresponds to the problem number. As an example the C program for hw1 problem 1 should be named as *hw1_p1.c*.

Submission Instructions: Use the dropbox on D2L to submit only the .c files.

1 Word Reverse

Write a C program that asks the user to enter a sentence from the keyboard, and prints the sentence with all the words spelled backwards.

Sample execution:

```
Enter a sentence: May the force be with you
yaM eht ecrof eb htiw uoy
```

2 Palindromes

A palindrome is a word that reads the same forward as it does backward. An example of a valid palindrome is the word “racecar”. An example of a word that is not a palindrome is “trust” (it reads backwards as “tsurt”). Develop a C program that identifies palindrome words. Your program should:

- Read words to be checked from a file called input.txt (You can find this file on D2L).
- If a word is a palindrome it prints it to a file named palindromes.txt

3 String Search

Develop a C program that searches a file for a given string. Your program should

- Ask the user to enter the file to be searched.
- Ask the user to enter the target string. The string can be longer than one word, but no longer than a line.
- Locate the target string in the file. Your program should be able to identify the target string as a part of another string. **You are not allowed to call the strstr function for this part, you have to implement your own.**
- Print the line number as well as the entire line for every match.

Sample execution:

File input:

Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It was popularized in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.

Target word: si

Output:

1. Lorem Ipsum is simply dummy text of the printing and typesetting industry.
2. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s,
3. recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.

Note that in your output, the matching text need not be red.

Submit files hw8_p1.c, hw8_p2.c, and hw8_p3.c via D2L dropbox. There will be no zyBooks submissions and submission of pseudocode is optional. COMMENTS ARE MANDATORY