Program Design (II)

Homework #3
Due: 2022/5/9 13:00 pm (CST)

NOTE: Please upload your C program to Domjudge before the due date and time.

1. (40%) Please finish Program Exercise #5 of the Quiz Section.

2. (60%) Please modify the `justify` program by rewriting the `line.c` file so that it stores the current line in a linked list. **Each node in the list will store a single word**. The `line` array will be replaced by a variable that points to the node containing the first word. This variable will store a null pointer whenever the line is empty. Please download the original version of the `justify` program from the *Justify_source_code* in the Writing Large Programs on the eCourse2. Also, please refer to pages 16 to 29 or pages 359 to 366 of the textbook for the introduction to the `justify` program. We will set the maximal length of one line as 60 characters (`#define MAX_LINE_LEN 60` in `line.c`) and the maximal length of one as 20 characters (`#define MAX_WORD_LEN 20` in `justify.c`). Please enter the inputs through the terminal ended with `EOF` by using the keyboard shortcut (in Windows, Control+Z; in Linux and Unix, Control+D).

When you submit your code to DOMjudge, please upload `line.c` **alone and choose the language "C_Hw3_Q2". If you did not use a linked list to store the current line, you cannot get the score of this question.** The table below shows the example input and output of the `justify` program.

Input	Output
This is a Course that introduces C	This is a Course that introduces C
Pneumonoultramicroscopicsilicovolcanoconiosis has 45 letters!	Pneumonoultramicrosc* has 45 letters!
This is an example	This is an example