Assignment 1
Deadline: 5:59PM on Oct 12

In assignment 1, you will work in a group of maximum 3 of your choice.

Requirements
In this assignment, you are BCIT version of Microsoft Word. In this term, your COMP2510 has one strange requirement that everyone submits a lab report via terminal output; however, he said that he is not sure what console size that he will be using to read your report. Unfortunately, he is asking you to make the number of characters in a line a command line argument.

Let's say that you have one file here.

```
>>cat input1.txt
I am a student at BCIT CST.
```

Now, you are running the program with 10 characters per line, you will get the following output.

```
>><executable> 10 input1.txt
I    am    a
student   at
BCIT   CST
```

You can see that each line is justified. You can see that additional spaces have been inserted in line 1 and 3. Because it is justified, you want to insert an equal number of spaces between words. In case of line 1, you have 4 characters, so 6 spaces can be inserted between words, so it is easy, you can just put 3 spaces inbetween words. Now, let's take a look at another example.

```
>>cat input2.txt
I am a boy.

>><executable> 13 input2.txt
I  am  a boy.
```

You realize that you only have 11 characters and your line length is 13. You have to insert 2 spaces to make a 13 character line. In this case, you will insert a space from the left side, so the first two spaces got additional space while the third space got no additional. It will be the same if you have to insert more spaces. Any remaining spaces will be inserted from the left to the right and in a round robin fashion. Below is another case.

```
>>cat input3.txt
I am a student at BCIT CST.
```

>><executable> 3 input3.txt
Error. The word processor can't display the output.

Can you actually do this. You can't do break students, which is 8 characters, into 3 characters. Your error message must be exactly the same as what is displayed above.

Lastly, there is a hyphenation rule. Consider the following input.

>>cat input4.txt
I am a BCIT-student in CST.

>><executable> 13 input4.txt
I am a BCIT-
student in
  CST.

The hyphenated word gets broken down as shown above. The hyphen will stay with the first word. The hyphen should be a start of a line. Lastly, if you are left with a single word, you are supposed to center it. This CST. Is a 4 character word. Make sure to count punctuations. Now, you have 9 spaces to place. Just like the previous rule, you will put 5 spaces before the word and 4 spaces after.

Restrictions

- You CANNOT use strtok function. Using this will result in 0.
- For any reason, if your code does not compile/run, it will result in 0.
- If you use any standard library functions other than stdio.h, stdlib.h, string.h, you must consult with me prior to using it.
- Every line must end with \n including the last line in the output.
- You are not allowed to have any trailing spaces in addition to \n in the last line of the output.
- You are not allowed to have any additional information printed except the output.

Grading

For any submission that does not compile or run due to not following instructions will get 0 (no exceptions). This includes not writing A numbers.

- (6 points) Generate correct solutions to the problems
- (4 points) Handle error cases to the problems

Submission Files

- You must push only one .c file named: **a1.c** (case sensitive)**.**
- Make sure to update your A numbers. Look at the top of the file and write your A number including leading 0's.
- Github link is in learning hub.