Homework 3 is due Friday, February 3rd at 5pm.

Problem 1:Reverse Lines

This problem is modified from textbook exercise 8.7
Write a program that reads each line in a file, **reverses its lines**, and writes them to another file. Suppose the users specifies `input.txt` and `output.txt` when prompted for the file names, and `input.txt` contains the lines

```
The sky is blue.
```

After the program is finished, `output.txt` should contain

```
The sky is blue.
```

Examples 2 :

```
The sun is up
the sky is blue
```

After the program is finished, `output.txt` should contain

```
the sky is blue
The sun is up
```

Problem 2: Reverse Words

This problem is modified from textbook exercise 8.7 Write a program that reads a file that only contains **one** line, **reverse words in the line**, and writes them to another file. Suppose the users specifies `input.txt` and `output.txt` when prompted for the file names, and `input.txt` contains the lines

```
The sky is blue
```

After the program is finished, `output.txt` should contain

```
blue is sky The
```

Examples 3 :

```
    the sky is blue
```

After the program is finished, `output.txt` should contain

```
blue is sky the
```

Examples 4 :

```
have a good                        day
```

After the program is finished,`output.txt` should contain

```
day good a have
```

- In problem 2, your reversed string should not contain leading or trailing spaces, see example 3

- In problem 2, you need to reduce multiple spaces between two words to a single space in the reversed string.

- You don't need to consider symbols show up in the input file.

Instructions

- All code must be written originally by yourself. You are not allowed to (even partially) copy code from anyone else. Incident of cheating or plagiarism will be reported to the Dean's office and results in a zero grade in this assignment.

- (5pt) Submit the files with exactly the name `reverse_lines.cpp` and `reverse_words.cpp`, and only submit them to Gradescope.

- (5pt) Add declaration in the beginning of each cpp file to show the ownership. Please put your name, UID, and discussion section in a comment at the top of your source files (before the include statements). A sample description may look like:

```
/*
    PIC 10A Homework 1, number.cpp
    Author: John Doe
    UID: 111111111
    Discussion Section: 1A
    Date: 01/01/2022
*/
```

- (40pt*2) Implement the program correctly.

- (5pt) Write the prompt correctly: ask user to input file names for input and output. You may use the following:

```
string filename;
cout << "Please enter the data file name:  ";
cin >> filename;
```

- (5pt) Write your code with good coding practices, including commenting your code, using descriptive variable names, using constant variables, etc.

- Code compiles with Visual Studio 2022 and solves the questions. Students may lose the majority of points if their code doesn't compile with VS 2022. To receive full credits, the output must look EXACTLY the same as instructed above, including words, spaces, symbols, etc. Your code should not only work for the above examples, but also work for other different inputs.