

Lab Assignment 2

CS 361 – Principles of Programming Languages I

Fall 2021

Problem

Write a C++ program that (i) reads a file *input.txt* line by line, (ii) reverses each word in each line (using the method `reverse` specified below), and (iii) outputs the changed line to the terminal.

Reading a File. You can read a file line by line using the code below.

```
#include <iostream>
#include <fstream>
using namespace std;

int main()
{
    ifstream file("input.txt");
    while (file.good()) {
        string line;
        getline(file, line);
        if (file.eof()) break;
        /* ... */
    }
}
```

Reversing Words. A *word* in this assignment is a maximal consecutive sequence of characters that does not contain a space (' '). You can consider a `string` object to be a `char`-array. For example, `line[5]` returns a reference to the character with index 5 from the string `line`. You can also change characters of a string that way. The length of a string can be determined with the method `length()`. For example, `line.length()` returns the length of the string `line`. To reverse a word in a string, implement a function

```
void reverse(string& str, int i, int j)
```

that reverses the substring of `str` in the range from `i` (inclusive) to `j` (exclusive). Inside that function, use the pre-implemented function `std::swap()` to swap two characters within the string.

Submission

For your submission, upload the file *reverse.cpp* with your implementation to Canvas.

This is an individual assignment. Therefore, a submission is required from each student.

Deadline: Sunday, October 10, 11:59 p.m.