

Homework 4

In this Homework, you are going to write a program that implements a **doubly linked list**.

The data must be read from the files and you can put the file names in your program.

Letters.txt contains 26 English Letters:

A

B

C

D

...

Z

Sequence.txt contains a list of numbers.

3,-3,19,-19,18,1,-2,3,-18,17,1,-3,-13,14

You need to

1. Create a doubly linked list by reading the 26 letters from Letters.txt.
2. Sequence.txt file contains a sequence of **relative** letter positions. The initial position is at the beginning of the list which is 'A'. The first number in the sequence is '3'. So the current position will move forward for three steps. Then the first letter to output is 'D' and now the current position is at 'D' as well. The second number in the sequence is '-3'. Then the second letter to output is the third element **backward** from **the current position** which is 'A'. You need to output all letters indicated in sequence.txt

Your need to

1. Create a **doubly linked list**
2. Implement putItem() method and use this method to create the doubly linked list
3. Correctly read the files and interpret the information
4. **Print out the letters**

Requirements:

1. **[will be 0 if it does not compile or crash]** The homework must be done in C++ and compatible to C++11. A readme.txt file about how to compile using g++ in command line

should be provided. Your submission must be in a .zip or .tar.gz file . You are **NOT** allowed to use Standard Template Library to create the linked list.

2. [5%] The Following identification information must be included at the beginning of your cpp file.

```
//Name: XXXXXXXX
```

```
//Email: XXXX@csueastbay.edu
```

3. [40%] Must implement Doubly Linked List
4. [45%] Must use relative positions to calculate the output using next and back points in the doubly linked list and correctly output the results
5. [10%] Correct I/O of the data file. You can put file names into the code instead of reading from command line. The content of the files must be read via file I/O.