Programming assignment #2

Linked List

Objective

1. To understand how an implementation of an ADT is used by an application program.

2. To become familiar with how to implement Linked List.

Problem Definition

有一群朋友在玩團康遊戲，每次當一個單字出現時，他們會一個一個輪流說出該單字的字母。說到最後一個字母的人就算出局，在他出局時，要說出他的編號以及每一個字母。

如果最後一個字母是母音，則下個單字開頭由照著原本方向的隔壁朋友開始；否則為相反方向的隔壁朋友開始。如果是順時針，字母放入最後一個；逆時針，字母從前面放入。

遊戲結束條件為只剩一個人(溫拿)的時候，最後溫拿再輸出自己的編號與全部的字母。

I/O Format

程式將會以下面的方式執行：

./a.out   input_file_name   output_file_name

Input file example ("//"符號為註解，不會在測資裡出現)

```
6      //遊戲由6號開始
35 98 6 27 1 -7      //讀到負數，人數結束，共5人
bello      //依序給單字，一開始順序為順時針(6=>27=>1=>35=>98=>6...)
muak
dul
poopaye
```

每次有人出局，都要輸出他喊出過的字母。直到最後，輸出溫拿。

Output file example

```
98 o
35 lk
6 lbm
27 ueupoae
1 dlaopy      //溫拿
```

Program Submission

1. Please use C/C++ language and your program **must** be written in **only one** source file.

2. Your source file must be named as "Student_ID_number_pa2.cpp" and please make sure that all characters of the filename are in **lower case**. For example, if your student number is 0510101, the name of your program file should be "0510101_pa2.cpp".

Report

1. Your report must contain the flow chart or the pseudo code of you program. You have to describe how your approach works. The analysis of time complexity should be included as well.

2. The report file name must be "Student_ID_number_pa2.pdf" and please make sure that all characters of the filename are in lower case. For example, if your student number is 0510101, the name of your program file should be "0510101_pa2.pdf".

Grading

You need to submit both your source code and report. Remember the submission rules mentioned above, or you will be punished on your grades.

You should **not use vector, stack, queue and deque libraries** in this assignment.

- Unique and compilable source code   30 %
- Five cases   50 %
- Report   20 %

Due Date

Upload your report and program to the e3 platform. All of your files must be archived to only one file named "**Student_ID_number_pa2.zip**" or "**Student_ID_number_pa2.rar**".

The upload deadline is **23:59 Nov. 2**.

Pic. 1

Pic. 2

Pic. 3

Pic. 4

Pic. 5