Phill-DS-1018

Stack Linked List

- 不受 maximum size 限制

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

struct Node{
  int data;
  Node* next;
};

class StackList{
  private:
    Node* top;

  public:
    StackList() : top(nullptr) {}

    void push(int data){
      Node* newNode = new Node;
      newNode->data = data;
      newNode->next = top; //新增的節點在左邊
      top = newNode; //指向最後加入的新節點
    }

    int pop(){
      if(top == nullptr){//沒東西 pop
        cout << "stack underflow" << endl;
        return -9999;
      }
      Node* current = top; //暫存要刪掉的節點
      top = top-> next; //把top 位置先調到下一個
      int value = current-> data; //先存return 值
      delete current;
      return value;
    }

    bool isEmpty(){
      return (top==nullptr);
    }

    ~StackList(){
      while(!isEmpty()){
        pop(); //會照 traverse 方式 free
```

```
      }
    }
};
```

練習 → stack 來做字串反轉

- 要用以上的 class

```
string abc = "hello world";
```

解答

```
int main()
{
    string abc= "hello world!";
    StackList st;

    for(char c : abc){
      st.push(c);
    }

    string reverseAbc ="";
    while(!st.isEmpty()){ //不是空的就繼續彈
      reverseAbc += st.pop();
    }

    cout << reverseAbc << endl;

    return 0;
}
```