In this exercise, we will use [Standard Template Library List](https://www.geeksforgeeks.org/list-cpp-stl/) (click open in other tab to show more) to implement a Data Log.

This is a simple implementation in applications using undo and redo. For example in Microsoft Word, you must have nodes to store states when Ctrl Z or Ctrl Shift Z to go back or forward.

DataLog has a doubly linked list to store the states of data (an integer) and iterator to mark the current state. Each state is stored in a node, the transition of states is depicted in the figure below.

Your task in this exercise is implement functions marked with /\*  \* TODO   \*/.

class DataLog

{

private:

list<int> logList;

list<int>::iterator currentState;

public:

DataLog();

DataLog(const int &data);

void addCurrentState(int number);

void subtractCurrentState(int number);

void save();

void undo();

void redo();

int getCurrentStateData()

{

return \*currentState;

}

void printLog()

{

for (auto i = logList.begin(); i != logList.end(); i++) {

if(i == currentState) cout << "Current state: ";

cout << "[ " << \*i << " ] => ";

}

cout << "END\_LOG";

}

};

Note: Normally, when we say a List, we talk about doubly linked list. For implementing a singly linked list, we use forward list.

We have include <iostream> <list> and using namespace std;

