```
Script started on 2024-04-03 12:28:45-05:00 [TERM="xterm-256color" TTY="/dev/pts/0" COLUMNS="254" LINES="58"]
p[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Lab/Lab_17[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Lab/Lab_17[00m$ pwd
[?2004l
/home/jovyan/CS2/Lab/Lab_17
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Lab/Lab_17[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Lab/Lab_17[00m$ ls -la
[?2004l
total 44
drwxr-sr-x  2 jovyan users  4096 Apr  3 12:28 [0m[01;34m.[0m
drwxr-sr-x 18 jovyan users  4096 Apr  2 11:22 [01;34m..[0m
-rw-r--r--  1 jovyan users    69 Apr  3 11:25 datafile.dat
-rw-r--r--  1 jovyan users  1817 Apr  3 12:27 LinkedList.cpp
-rw-r--r--  1 jovyan users   494 Apr  2 11:23 LinkedList.h
-rw-r--r--  1 jovyan users   831 Apr  3 12:28 ll_test.cpp
-rw-r--r--  1 jovyan users     0 Apr  3 12:28 Sabin_Lab_17.log
-rwxr-xr-x  1 jovyan users 18440 Apr  3 12:20 [01;32mtest[0m
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Lab/Lab_17[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Lab/Lab_17[00m$ cat -n
LinkedList.h
[?2004l
     1  #ifndef _LINKEDLIST_H
     2  #define _LINKEDLIST_H
     3
     4  // A structure defining the node.
     5  struct Node {
     6
     7    int data;    // some data
     8    Node *next;  // Pointer to another Node
     9  };
    10
    11  class LinkedList {
    12  private:
    13    Node *head; // pointer to first item in list
    14
    15  public:
    16    LinkedList();               // How do I initialize my object?
    17    void push_back(int value);  // add elements to the end of our LL
    18    void print() const;         // print all elements
    19    void push_front(int value); // push to front
    20  };
    21
    22  #endif[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Lab/Lab_17[01;32mjovyan@jupyter-
tes4j[00m:[01;34m~/CS2/Lab/Lab_17[00m$ cat -n LinkedList.cpp
[?2004l
     1  #include "LinkedList.h"
     2  #include <iostream>
     3
     4  // TODO: Implement the functions below.
     5  LinkedList::LinkedList() {
     6      //Create head at address 0
     7      head = nullptr;
     8  }
     9
    10  void LinkedList::print() const {
    11      //check to see if the head is a nullptr
    12      if(head == nullptr){
    13          std::cout << "Current List:  empty...\n";
    14      }else{
    15          //Create a temp node
    16          Node *temp = head;
    17          std::cout << "Current List: ";
    18          //If the temp is not a nullptr
    19          while(temp != nullptr){
    20              //Print out the data
    21              std::cout << ' ' << temp->data;
    22              //Go to the next node
    23              temp = temp->next;
    24          }
    25          std::cout << '\n';
    26      }
    27  }
    28
    29  void LinkedList::push_front(int value) {
    30      //Create a new node
    31      Node *newNode = new Node;
    32      //Insert the value into the data portion
    33      newNode->data = value;
    34      //The next portion will point what the head was pointing to
    35      newNode->next = head;
    36      //This sets the head to the newly created node (Head points to the new node and makes it the first node in the
list)
    37      head = newNode;
    38  }
    39
    40  void LinkedList::push_back(int value) {
```

```
    41      //Create a new node
    42      Node *newNode = new Node;
    43      //Have the new node point to null
    44      newNode->next = nullptr;
    45      //Insert the value into the data section
    46      newNode->data = value;
    47      //if the head is a nullptr, replace the head for the new node (since the list is empty)
    48      if(head == nullptr){
    49          head = newNode;
    50      }else{
    51          //Create a temp node
    52          Node *temp = head;
    53          //While the 'next' section is not a nullptr
    54          while(temp->next != nullptr){
    55              //set the temp to look at the next node
    56              temp = temp->next;
    57          }
    58          //Once it is a nullptr, have the 'next' point to the new node
    59          temp->next = newNode;
    60      }
    61  }
    62
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Lab/Lab_17[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Lab/Lab_17[00m$ cat -n
ll_test.cpp
[?2004l
     1  /*
     2  Tyler Sabin
     3  Section 004
     4  Lab 17- Linked Lists
     5  In this lab we are going to practice creating
     6  functions for linked lists and get more practice
     7  with pointers
     8  */
     9
    10  #include "LinkedList.h"
    11  #include <fstream>
    12  #include <iostream>
    13
    14  int main() {
    15    std::string filename;
    16    std::cout << "Enter a data file: ";
    17    std::cin >> filename;
    18    std::ifstream datafile;
    19    datafile.open(filename);
    20    if (!datafile) {
    21      std::cout << "ERROR: " << filename << " could not open...\n";
    22      return 0;
    23    }
    24    std::cout << '\n';
    25    LinkedList values;
    26    int value;
    27    char side;
    28    int count{0};
    29    values.print();
    30    datafile >> side >> value;
    31    while (datafile) {
    32      if (side == 'f') {
    33        values.push_front(value);
    34      } else if (side == 'b') {
    35        values.push_back(value);
    36      }
    37      values.print();
    38      datafile >> side >> value;
    39    }
    40
    41    datafile.close();
    42  }[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Lab/Lab_17[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Lab/Lab_17[00m$
g++ -Wall -Wextra -WQ[Kerror ll_test.cpp LinkedList.cpp -o test
[?2004l
[01m[Kll_test.cpp:[m[K In function â€˜[01m[Kint main()[m[Kâ€™:
[01m[Kll_test.cpp:28:7:[m[K [01;31m[Kerror: [m[Kunused variable â€˜[01m[Kcount[m[Kâ€™
[[01;31m[K]8;;https://gcc.gnu.org/onlinedocs/gcc/Warning-Options.html#index-Wunused-variable-Werror=unused-variable]8;;[m[K]
   28 |   int [01;31m[Kcount[m[K{0};
      |       [01;31m[K^~~~~[m[K
cc1plus: all warnings being treated as errors
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Lab/Lab_17[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Lab/Lab_17[00m$ g++ -Wall
-Wextra -Werror ll_test.cpp LinkedList.cpp -o test
[?2004l
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Lab/Lab_17[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Lab/Lab_17[00m$ ./test
[?2004l
Enter a data file: datafile.dat

Current List:  empty...
```

```
Current List:  667
Current List:  67 667
Current List:  67 667 248
Current List:  67 667 248 68
Current List:  891 67 667 248 68
Current List:  891 67 667 248 68
Current List:  891 67 667 248 68 778
Current List:  228 891 67 667 248 68 778
Current List:  228 891 67 667 248 68 778 162
Current List:  441 228 891 67 667 248 68 778 162
Current List:  441 228 891 67 667 248 68 778 162 504
Current List:  441 228 891 67 667 248 68 778 162 504
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Lab/Lab_17[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Lab/Lab_17[00m$ ./test
[?2004l
Enter a data file: datafile.dat

Current List:  empty...
Current List:  667
Current List:  67 667
Current List:  67 667 248
Current List:  67 667 248 68
Current List:  891 67 667 248 68
Current List:  891 67 667 248 68
Current List:  891 67 667 248 68 778
Current List:  228 891 67 667 248 68 778
Current List:  228 891 67 667 248 68 778 162
Current List:  441 228 891 67 667 248 68 778 162
Current List:  441 228 891 67 667 248 68 778 162 504
Current List:  441 228 891 67 667 248 68 778 162 504
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Lab/Lab_17[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Lab/Lab_17[00m$ ./test
[?2004l
Enter a data file: datafile.dat

Current List:  empty...
Current List:  667
Current List:  67 667
Current List:  67 667 248
Current List:  67 667 248 68
Current List:  891 67 667 248 68
Current List:  891 67 667 248 68
Current List:  891 67 667 248 68 778
Current List:  228 891 67 667 248 68 778
Current List:  228 891 67 667 248 68 778 162
Current List:  441 228 891 67 667 248 68 778 162
Current List:  441 228 891 67 667 248 68 778 162 504
Current List:  441 228 891 67 667 248 68 778 162 504
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Lab/Lab_17[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Lab/Lab_17[00m$ ./test
[?2004l
Enter a data file: noname.dat
ERROR: noname.dat could not open...
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Lab/Lab_17[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Lab/Lab_17[00m$ ./test
[?2004l
Enter a data file: datafile.dat

Current List:  empty...
Current List:  667
Current List:  67 667
Current List:  67 667 248
Current List:  67 667 248 68
Current List:  891 67 667 248 68
Current List:  891 67 667 248 68
Current List:  891 67 667 248 68 778
Current List:  228 891 67 667 248 68 778
Current List:  228 891 67 667 248 68 778 162
Current List:  441 228 891 67 667 248 68 778 162
Current List:  441 228 891 67 667 248 68 778 162 504
Current List:  441 228 891 67 667 248 68 778 162 504
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Lab/Lab_17[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Lab/Lab_17[00m$ ./testg++
-Wall -Wextra -Werror ll_test.cpp LinkedList.cpp -o test
[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C./test[K
[?2004l
Enter a data file: datafile.dat

Current List:  empty...
Current List:  667
Current List:  67 667
Current List:  67 667 248
Current List:  67 667 248 68
Current List:  891 67 667 248 68
Current List:  891 67 667 248 68
Current List:  891 67 667 248 68 778
Current List:  228 891 67 667 248 68 778
Current List:  228 891 67 667 248 68 778 162
```

```
Current List:  441 228 891 67 667 248 68 778 162
Current List:  441 228 891 67 667 248 68 778 162 504
Current List:  441 228 891 67 667 248 68 778 162 504
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Lab/Lab_17[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Lab/Lab_17[00m$ exit
[?2004l
exit

Script done on 2024-04-03 12:31:22-05:00 [COMMAND_EXIT_CODE="0"]
```