```
#include <iostream>
#include <string>
#include <fstream>

using namespace std;


struct listtype {
string last;
string first;
int id;
listtype *link; };

void CreateList(listtype *&head, listtype *&tail) {
    head = new listtype;
    tail = new listtype;
    head -> last = "  AAAA";
    tail -> last = "zzzzzz";
    head -> link = tail;
    tail -> link = NULL;
}

bool EmptyList(listtype *head, listtype *tail) {
    return (head -> link == tail);
}

void InsertList(listtype *head, listtype *tail, string last, string first, int id) {
    listtype *before, *after, *insert;
    insert = new listtype;
    insert -> last = last;
    before = head;
    after = head -> link;
    while (after != tail && insert->last > after->last) {
        before = after;
        after = before -> link; }
        before -> link = insert;
        insert -> link = after; }

void ReadData(listtype *head, listtype *tail, ifstream &inf, string last, string
first, int id) {
    while (!inf.eof()) {
        inf >> last >> first >> id >> ws;
        int position = last.find(",");
        last.erase(position,1);
        InsertList(head, tail, last, first, id);
    }
}

void TraverseList(listtype *head, listtype *tail) {
    listtype *c;
    if (!EmptyList(head, tail)) {
        c = head -> link;
        while (c!= tail) {
            string temp = c -> first + " " + c -> last;
```

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54                  cout << temp << endl;
55              }
56          }
57          else cout << "The List Is Empty" << endl;
58          c = c-> link;
59      }
60
61
62      int main(){
63      ifstream inf;
64      inf.open("program2datafile.txt");
65      listtype *head, *tail;
66      CreateList(head,tail);
67      ReadData(head, tail, inf, last, first, id);
68      TraverseList(head,tail);
69      system("pause");
70      }
71
```