

CS 323_33

Programming Language: C++

Mock Final 2

Selection Sort LinkList

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Source Code

```
#include <iostream>

#include <string>

#include <fstream>

using namespace std;

class Node{

    public:

    int data = -9999;

    Node* prev;

    Node* next;

    Node(int d){

        data = d;

        next = NULL;

    }

};

class selectionSort{

    public:

    Node* head = new Node(-9999);

    int N = 0;

    void createList(ifstream& inFile){

        int data;
```

```

while(!inFile.eof()){

    inFile >> data;

    Node* newNode = new Node(data);

    N++;

    Node* temp = head->next;

    head->next = newNode;

    newNode->prev = head;

    newNode->next = temp;

}

}

void selectionSorting(){

    Node* position = head->next;

    while(position->next->next != NULL){

        Node* lowestFound = position;

        Node* findingNode = position->next;

        while(findingNode->next != NULL){

            if(findingNode->data < lowestFound->data){

                lowestFound = findingNode;

            }

            findingNode = findingNode->next;

        }

        if(lowestFound->data < position->data){

            Node* temp;

            temp->next = lowestFound->next;

```

```

        temp->prev = lowestFound->prev;

        lowestFound->next = position->next;
        lowestFound->prev = position->prev;

        position->next = temp->next;
        position->prev = temp->prev;

        delete temp;

    }

    position = position->next;

}

}

void printList(ofstream& outFile){
    Node* spot = head->next->next;
    while(spot->next != NULL){
        outFile << spot->data << endl;
        spot = spot->next;
    }
}

};

int main(int argc, char* argv[]){
    ifstream inFile(argv[1]);

```

```
    ofstream outFile(argv[2]);

    selectionSort S;

    S.createList(inFile);

    // S.selectionSorting();

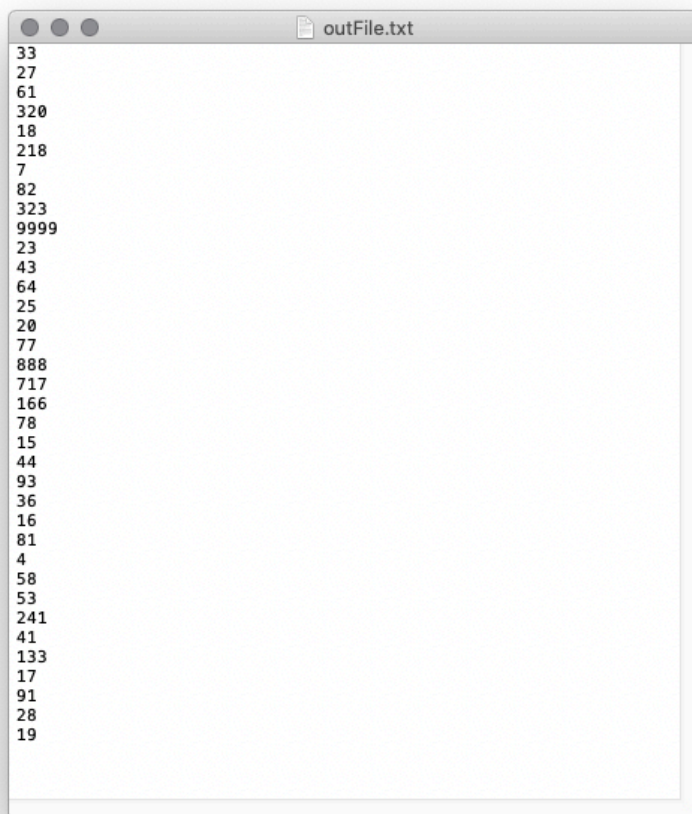
    S.printList(outFile);

    inFile.close();

    outFile.close();

}
```

Output (selections sort not work)



A screenshot of a text editor window titled "outFile.txt". The window displays a list of numbers, each on a new line. The numbers are: 33, 27, 61, 320, 18, 218, 7, 82, 323, 9999, 23, 43, 64, 25, 20, 77, 888, 717, 166, 78, 15, 44, 93, 36, 16, 81, 4, 58, 53, 241, 41, 133, 17, 91, 28, and 19. The list is not sorted, indicating that the selection sort algorithm did not work as intended.