

CSE 225 Section 6

Assignment 1

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main.cpp

```
#include <iostream>

#include "sortedList.h"

using namespace std;

int main()
{
    sortedList L;

    L.insert(3);
    L.insert(7);
    L.insert(5);
    L.print();
    L.remove(5);
    L.print();

    cout << L.search(7);
    return 0;
}
```

sortedList.h

```
#ifndef SORTEDLIST_H
#define SORTEDLIST_H

#include <iostream>

class sortedList
{
public:
    sortedList();
```

```
    void insert(int);  
    int search(int);  
    void remove(int);  
    void print();  
private:  
    int length;  
    int data[50];  
};  
  
#endif // SORTEDLIST_H
```

sortedList.cpp

```
#include <iostream>  
#include "sortedList.h"  
using namespace std;  
  
sortedList::sortedList()  
{  
    length = 0;  
}  
  
void sortedList::insert(int num)  
{  
    int j = length - 1;  
    while (j >= 0 && data[j] > num)  
    {  
        data[j + 1] = data[j];  
        j--;  
    }  
}
```

```
    }  
    data[j + 1] = num;  
    length++;  
}
```

```
int sortedList::search(int value )
```

```
{  
    int first, middle, last;  
    first = 0;  
    last = length - 1;  
    while (true)  
    {  
        middle = (first + last) / 2;  
        if (data[middle] == value)  
            return middle;  
        else if (first > last)  
            return -1;  
        else if (value < data[middle])  
            last = middle - 1;  
        else  
            first = middle + 1;  
    }  
}
```

```
void sortedList::remove(int num)
```

```
{  
    int index = -1;  
  
    for (int i = 0; i < length; i++)
```

```

{
    if (data[i] == num)
    {
        index = i;
        break;
    }
    else if (data[i] > num)
    {
        break;
    }
}

if (index == -1) return;

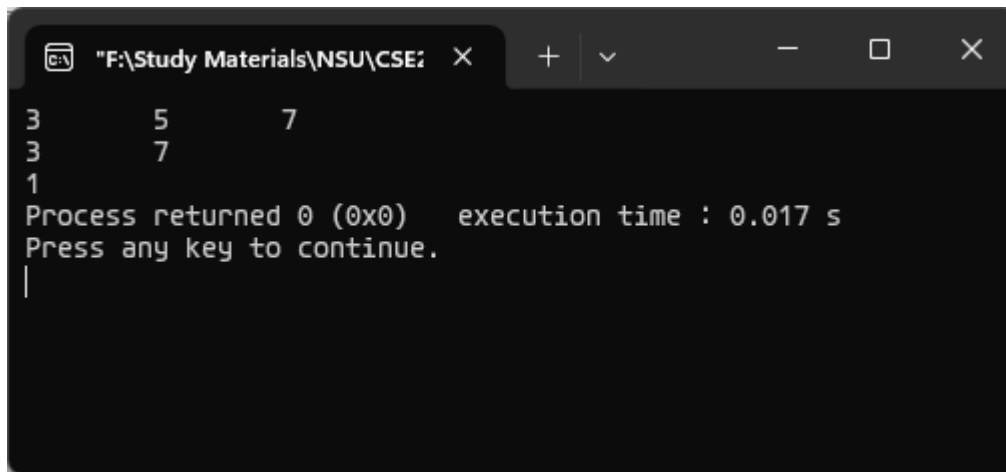
for (int i = index; i < length - 1; i++)
{
    data[i] = data[i + 1];
}

length--;
}

void sortedList::print()
{
    for (int i=0; i<length; i++)
    {
        cout << data[i] << "\t";
    }
    cout << endl;
}

```

}



A screenshot of a Windows command prompt window. The title bar shows the file path "F:\Study Materials\NSU\CSE:". The window contains the following text: a 3x3 grid of numbers (3, 5, 7 in the first row; 3, 7, 1 in the second row; 1 in the third row), followed by the message "Process returned 0 (0x0) execution time : 0.017 s" and "Press any key to continue." with a cursor on the next line.

```
"F:\Study Materials\NSU\CSE:  X  +  v  -  □  X
3      5      7
3      7
1
Process returned 0 (0x0)  execution time : 0.017 s
Press any key to continue.
|
```