Ceng 241 Lab Work 7

Operator Overloading II: overloading the subscript operator and Composition:Objects as Members of Classes

Implement a **Time** class, where the time will be represented with the forms as 22:35:08. The public interface consists of methods to

- Compute the difference between two Times by overloading substraction operator

- Compute the addition of two Times by overloading addition operator

- Overload stream insertion ($>>$) operator for entering data from keyboard

- Overload stream extraction ($<<$) operator for displaying data on the screen

- Compare two times by overloading "==",">=" and ">" operators

- Overload the assignment operator(=) for assigning to Times

Implement a **Set** class, where a set is an unordered collection of zero or more elements with no duplicates. For this exercise, the elements should be **Time**s. The public interface of Set class consists of methods to

- Remove a specified element from a Set

- Enumerate the elements in the Set

- Add a new element to a set using array subscript operator(i.e. overload the subscript operator "operator[]")

- Overload stream extraction ($<<$) operator for displaying data on the screen

Sample Test Program:

```
#include "Set.h"
#include <ctime>
#include <iostream>
using std::endl;
using std::cout;
using std::cin;
```

```
int main(){

    const int size=10;

    Set a(size);

    srand(0);
    for(int i=0;i<size;i++){
        Time temp(rand()\%25,rand()\%60,rand()\%60);
        a[i]=temp;
    }
    cout<<a;

    a.enumerate();
    cout<<a;

    a.remove(a[5]);
    cout<<a;

    return 0;
}
```