

The program reads in events from a user, and stores them in a double linked list. When the user is done entering events, the list saves them into a file. The DateTime class is derived from the Date class, and contains an int hour, and int minute. The DateTime class has two methods, a normal constructor and print(). Note that the ListNodes actually store pointers to Date.

```
int main(int argc, char* argv[])
{
    List list;
    char month[10];
    int day, hour, minute;
    cout << "Event: ";
    cin >> month >> day >> hour >> minute;

    while (day > 0)
    {
        if(hour >= 0)
            list.insert((Date*) new DateTime(month, day, hour, minute));
        else
            list.insert(new Date(month, day));

        cout << "Event: ";
        cin >> month >> day >> hour >> minute;
    } // while day > 0

    list.save(argv[1]); // argv[1] contains the name of the file
    return 0;
}
```

```
[ssdavis@lect1]$ a.out test.txt
```

```
Event: April 17 -1 0
```

```
Event: February 27 12 0
```

```
Event: February 29 23 59
```

```
Event: October 31 -1 0
```

```
Event: June 7 8 3
```

```
Event: June 16 18 10
```

```
Event: January -1 0 0
```

```
[davis@lect15 mid2b]$
```

```
[davis@lect15 mid2b]$ cat test.txt
```

```
February 27 12:00
```

```
February 29 23:59
```

```
April 17
```

```
June 7 8:03
```

```
June 16 18:10
```

```
October 31
```

```
[ssdavis@lect1]$
```

list.h contains:

```
class ListNode {
    Date *data;
    // edited by Sean to hide whether this is a double linked list
    ListNode *next;
    ListNode(Date *d, /*more editing */ ListNode *n);
    friend class List;
}; // class ListNode

class List
{
    ListNode *head;
public:
    List();
    void insert(Date *d); // sorted using Date < operator
    void save(const char *filename);
}; // class List
```

date.h contains:

```
class Date
{
    char month[10];
protected:
    int day;
public:
    Date(const char *m, int d);
    const char* getMonth()const;
    bool operator< (const Date &d) const;
    virtual void print(ostream &os)const;
}; // class Date
```