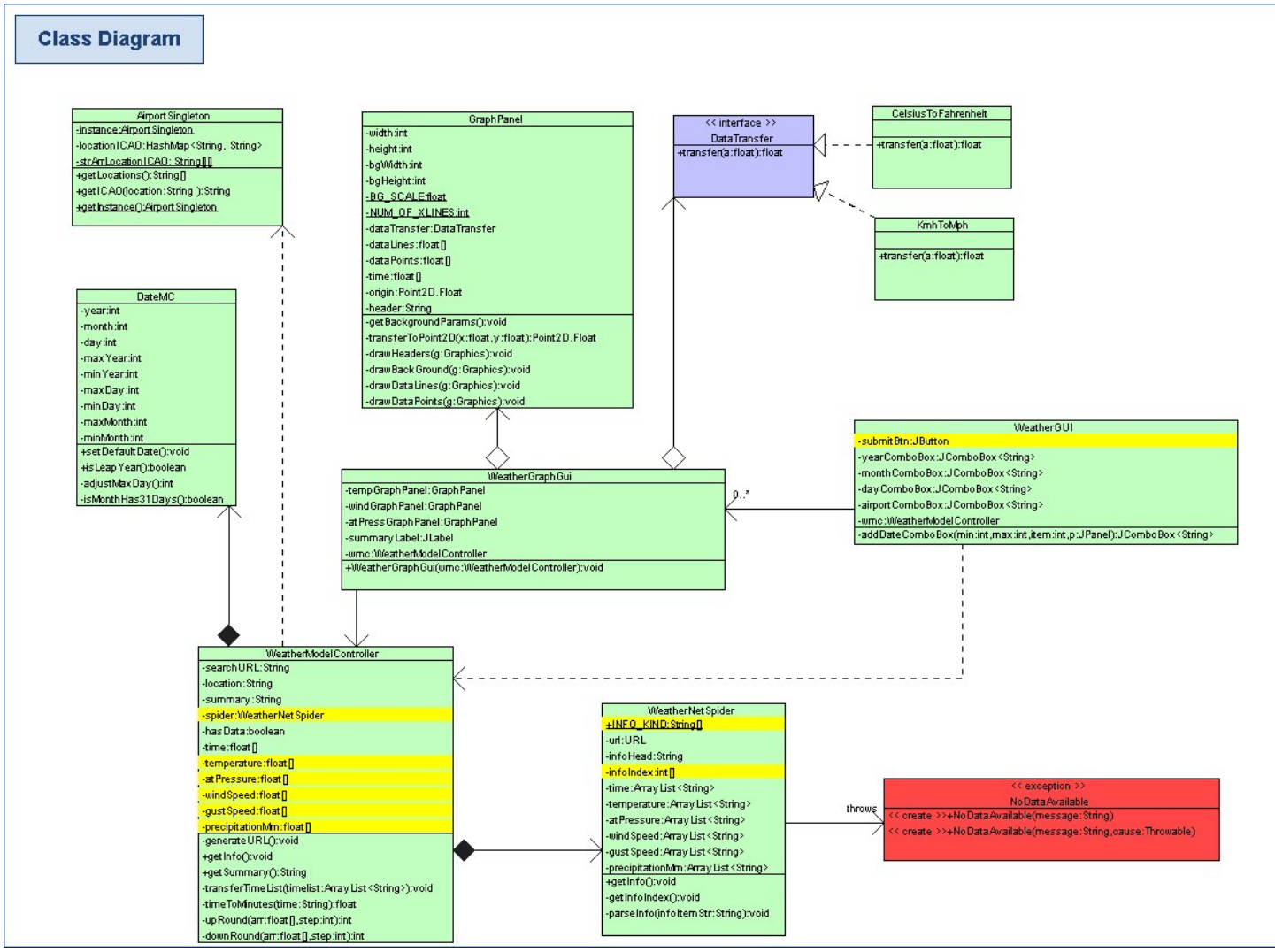
1 UML class diagram



note: you can zoom the pdf to see this class diagram more clearly

2 Design

1) code structure:

I use a weather spider class to get all the raw data needed for the project. Then use a modelController to process all data for drawing. The graphPanel class just check whether it has certain elements. Then draw all the elements get from the weather model controller. The code is designed quite flexible, easy to maintain and efficient. For example, you can set header or interface datatransfer in GraphPanel.

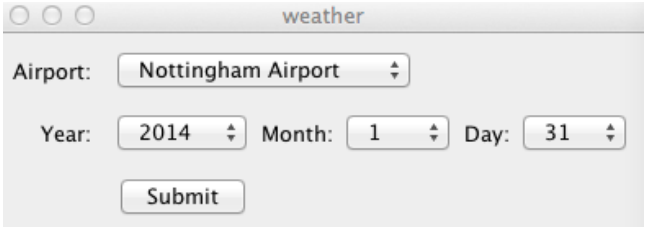
2) code details

I implement a dateModel to judge the max day of a month such as judge Feb has 28 or 29 days.

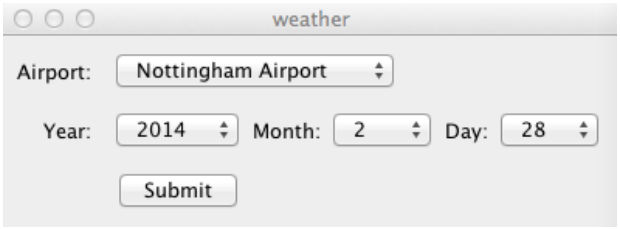
I implement a singleton to maintain the airports. The const data is stored in two diminutional array but the singleton class initialised by putting the data in hash table in case of large num of airports.

3) GUI :

1. The date selecting part:
First, the date is set today's date.

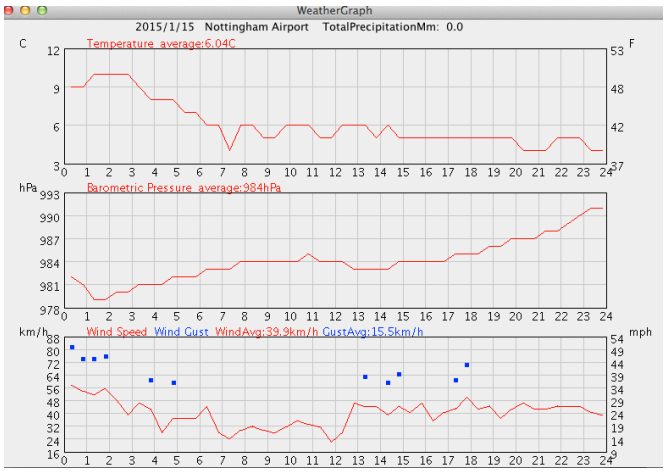


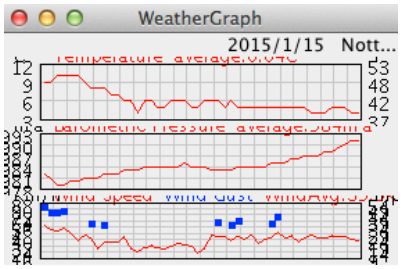
Second, when you change the month or day, the day will change automatically to the max day. For ex, when you change the month of the graph above to Feb, the Day will automatically change to 28, since the max day for Feb 2014 is 28.

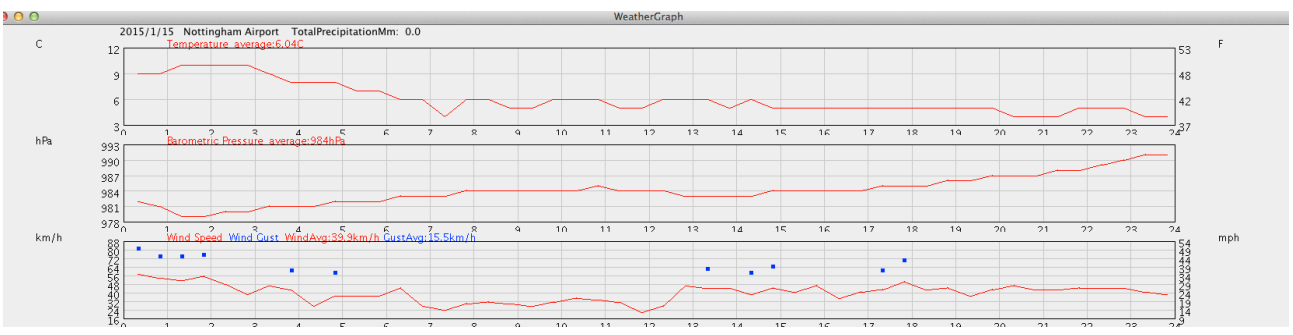


2 the graph part

The graph part can be stretched. So it is easy for users to compare different graphs.







3 Testing

The testing is in each class's main method.
The development was basically test-driven. The testing order is first in independent class. Then use successful test case as the base of the dependant classes testing.