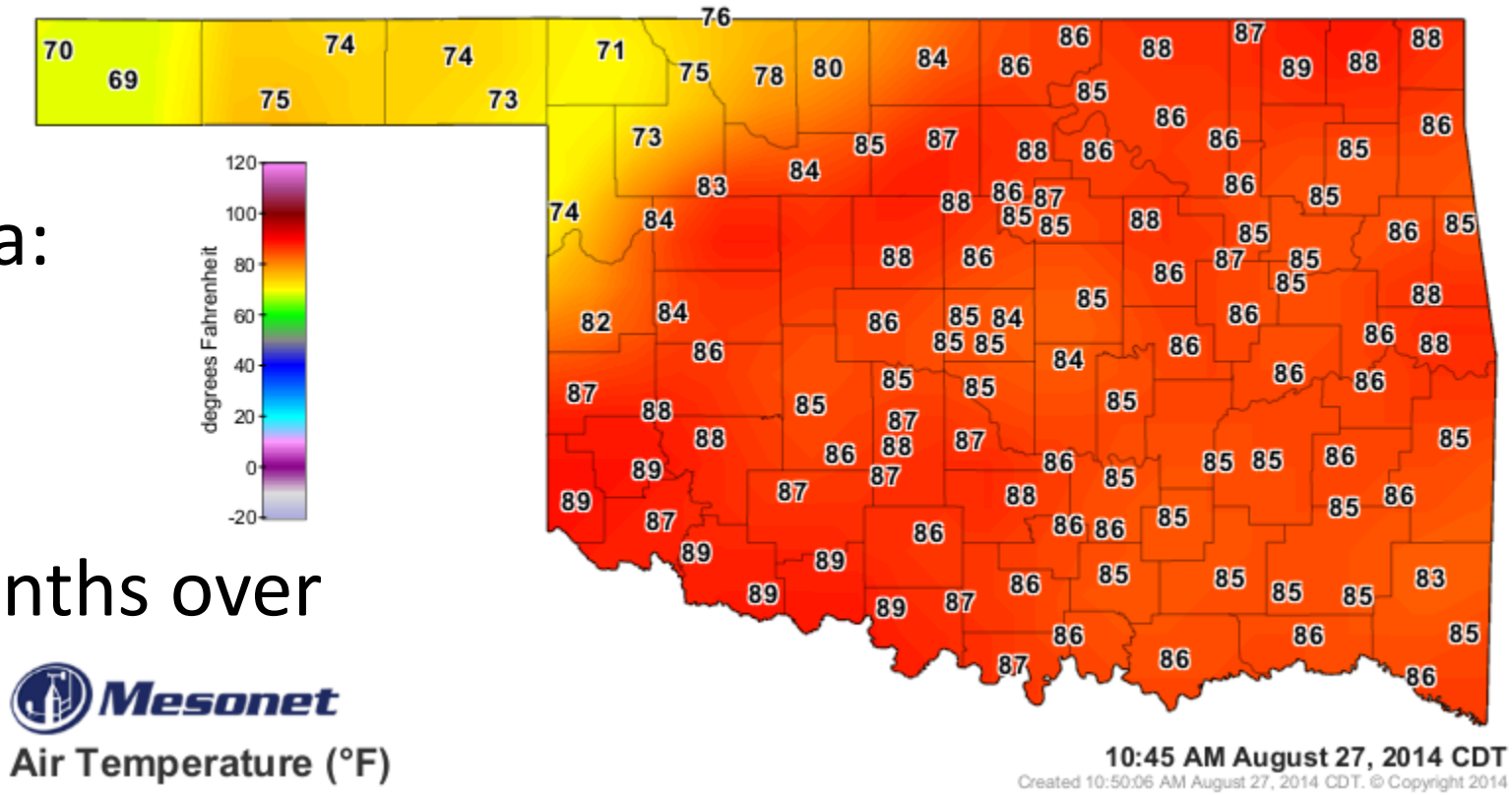
CS 2334: Project 2
Class Abstraction

Project 2

Expanded Mesonet data:

- Wind data
- Additional stations
- Larger data set: all months over twelve years
- More invalid data



High-Level Task: User Selects Data to be Summarized

Through System.in:

- User selects station (one specific one or “all”)
- User selects years to summarize (one specific one or “all”)

- Your program loads in the data set and displays the high-level statistics

- Demonstration ….

Objectives

- Make an interactive menu for a user and handle errors in
- Automatically load a set of files in a directory (folder)
- Create and use abstract objects and interfaces in appropriate ways
- Make use of polymorphism in code
- Continue to exercise good coding practices for Javadoc and for unit testing

Recall Project 1…

- MonthlyData computed statistics over all days in a month
- DataSet computed statistics over all months in a data set

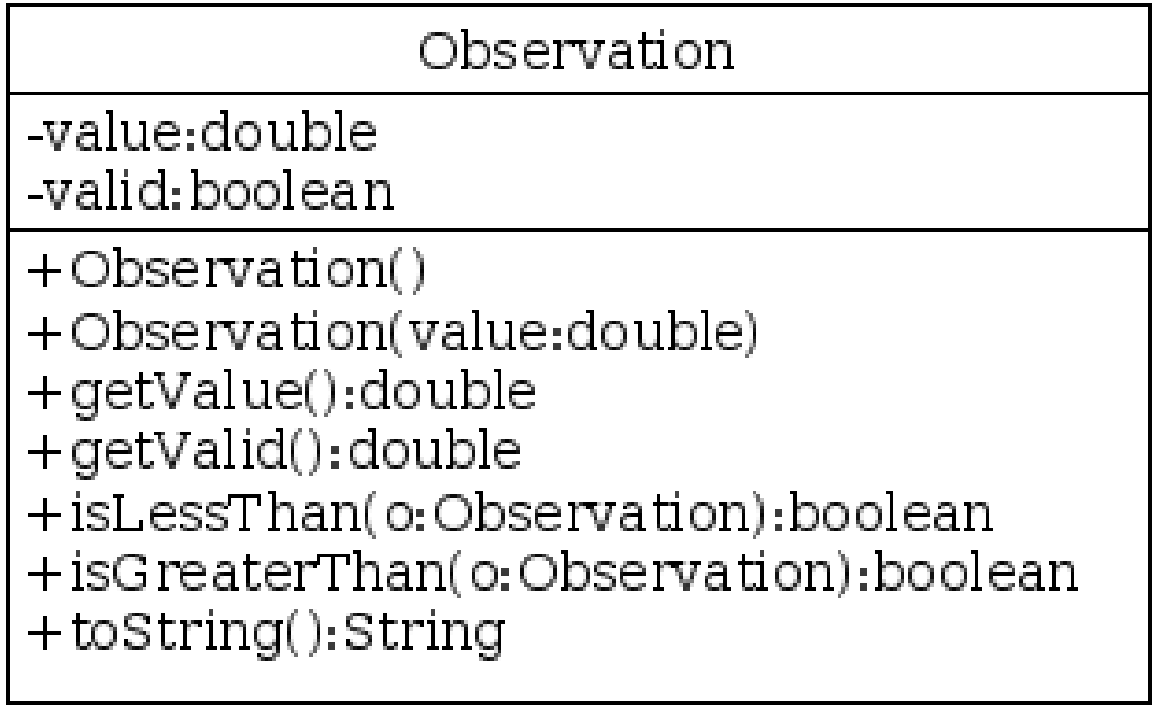
- Separate, but very similar statistics code…

Project 2

- For this project, we have several “notions” of higher level statistics: months, years and entire data sets
- We want to be able to write our statistics computation code once for all of these

- Class hierarchies will make this “easy”

Observation Class

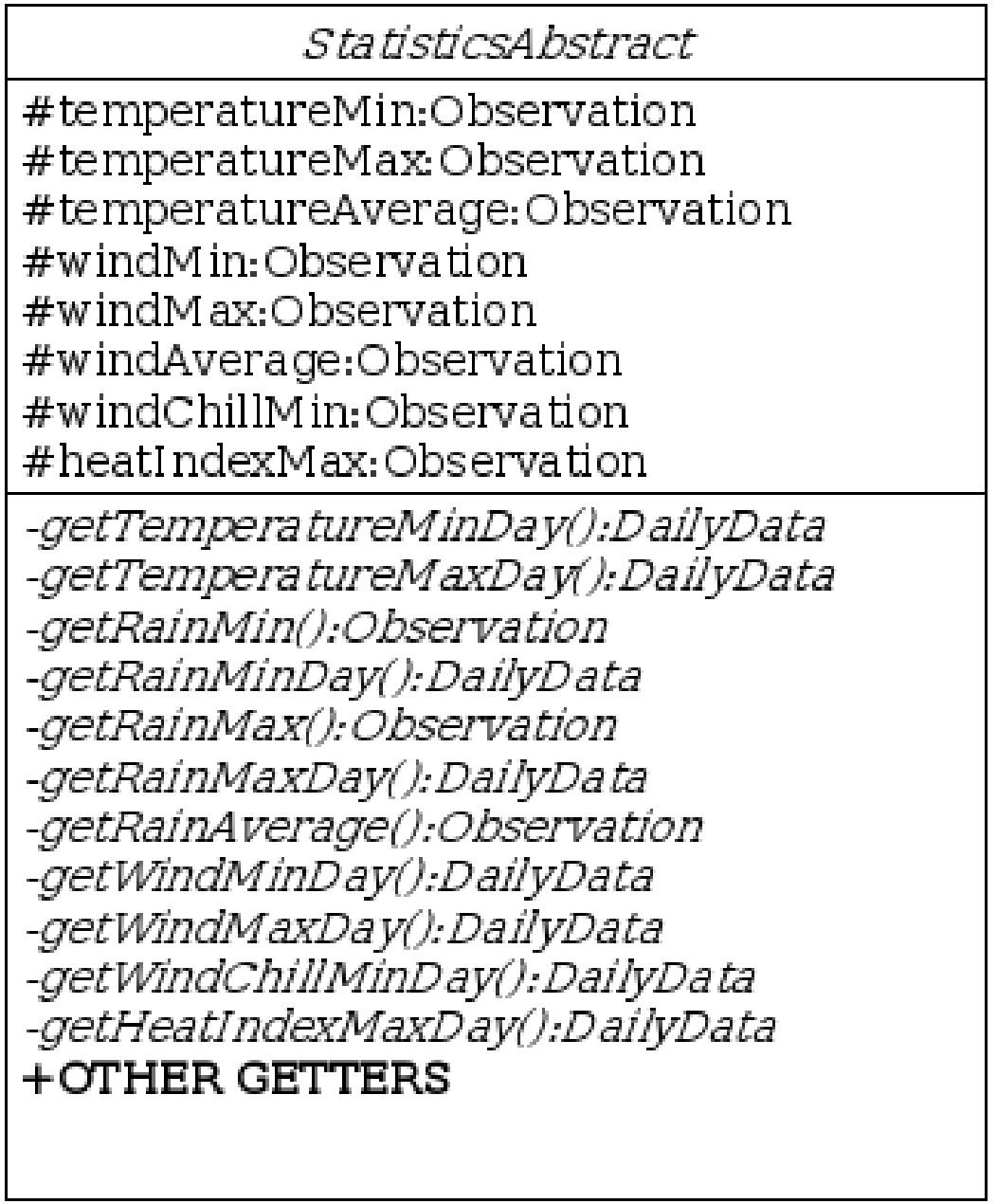


isLessThan() example on board…

StatisticsAbstract

Any class about which statistics can be computed

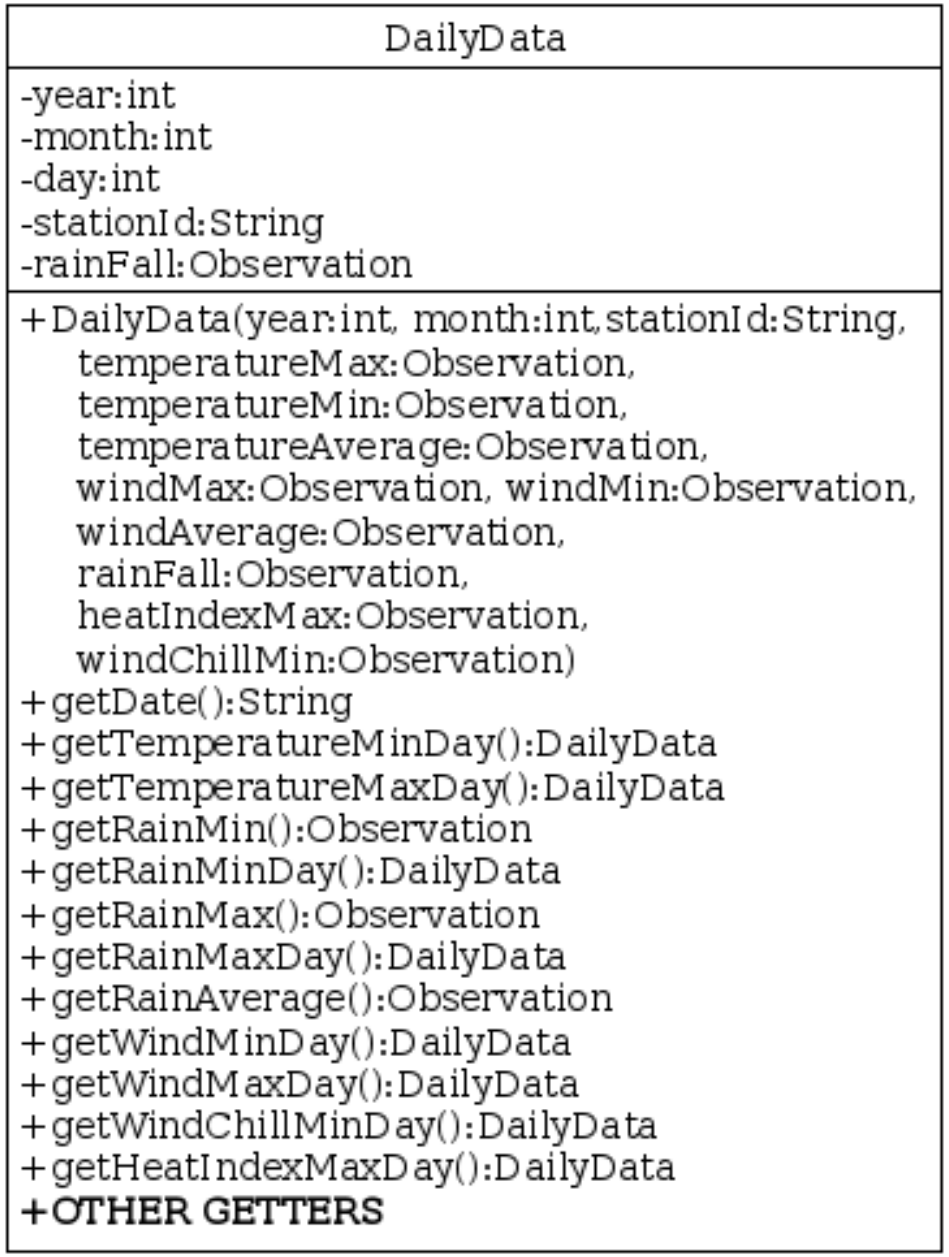
- Defines some properties and getters that are common to all subclasses
- Defines a set of abstract methods that also must be in common (but can't provide an implementation of)



Daily Data

Extends StatisticsAbstract

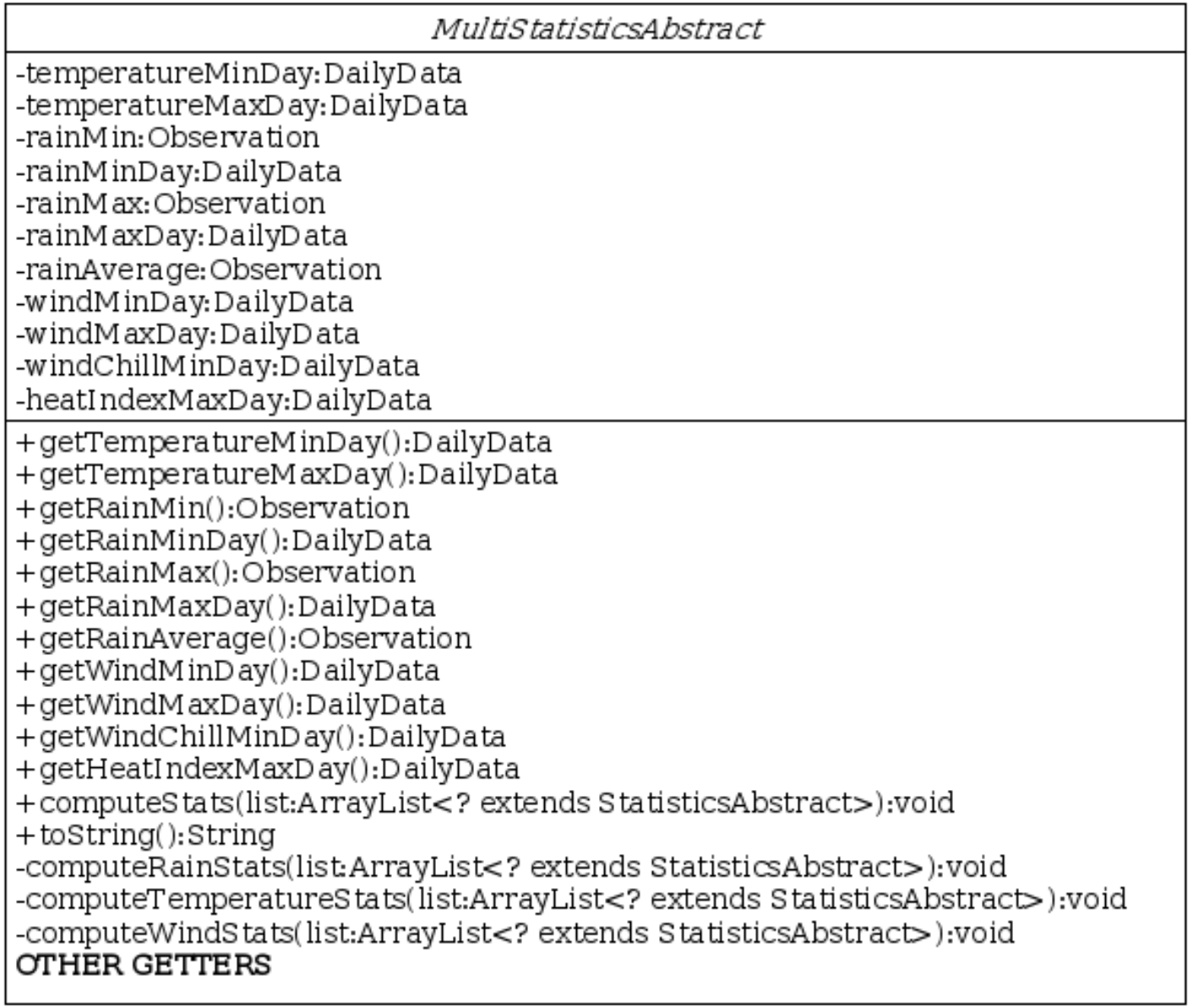
- Adds a small number of additional properties
- Implements a large set of abstract methods

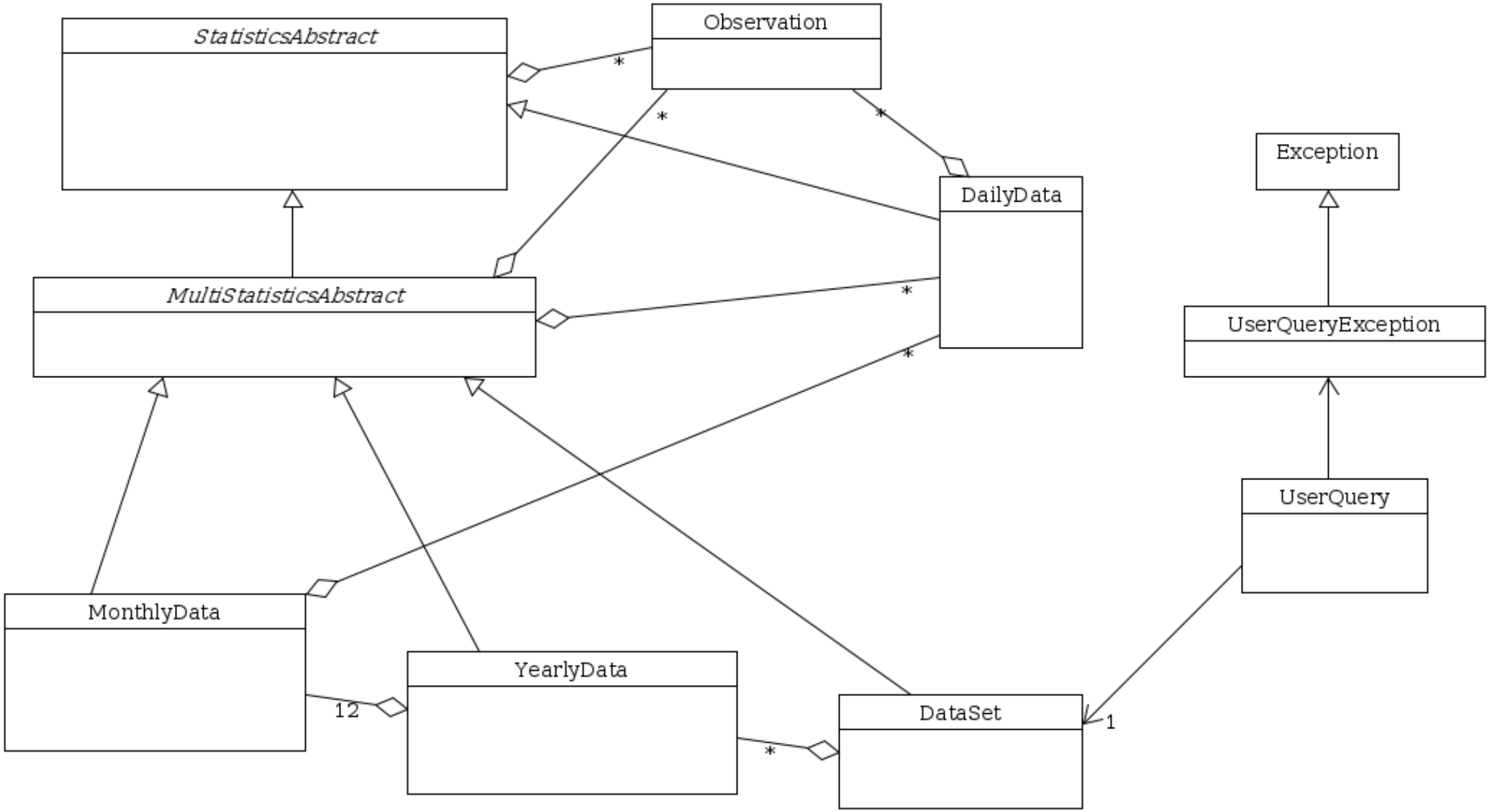


MultiStatisticsAbstract

Extends StatisticsAbstract

- Describes any class that computes statistics about multiples of another class
- Defines a common set of properties and methods
- All statistics computations defined here




StatisticsAbstract
Observation
DailyData
Exception
MultiStatisticsAbstract
UserQueryException
UserQuery
MonthlyData
YearlyData
DataSet
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Notes

- For a single day's Observations, some may be valid while others are invalid (this was true in project 1, also)
- For a given Observation type (e.g., windMax), it is possible for an entire month to have invalid data. So, a month's windMax must also be an Observation (not a double)
  - This is addressed in our definition of StatisticsAbstract (but you need to provide implementation)

Deadlines

- Project must be submitted by Wednesday, Oct 14th @1:29pm
- Code review must be completed by Friday, Oct 23rd