MF 703 C++ for Mathematical Finance
Fall 2015
Homework Assignment 1

Objectives:

- Computing basic stats
- Working with objects on the example of IO from files

Mean, Standard Deviation, and Smallest/Largest number of sequence.

Write an application that reads in floating point numbers from the screen until it encounters EOF and computes the

- Mean
- Standard Deviation
- Smallest and largest number

The application should

- Print a screen message stating what it computes
- Prompt for input
- Verify read in value by echoing it on the screen
- Print a message when it encounters EOF
- Print the results (with explanation) on the screen.

Structure your application in such a way that you can later reuse blocks of code in other programs. After you test your program modify it to read the input from a file "data.txt".

To read data from a file you must include the file stream library **fstream** and define and open a file stream object (called infile in the example below) as follows

```
#include <fstream> //similar to #include <iostream>

ifstream infile; //input file stream object
infile.open("data.txt");
```

The statement for reading values from a file has the same form as reading with cin, e.g.

```
infile >> price;  //same as cin >> price;
```

and **ifstream** objects can call the same functions as **cin** objects, e.g.

```
infile.fail(); infile.eof(); etc.
```

When work with file stream object is completed the file must be closed (usually at the end of the program)

```
infile.close();
```