Processing Numeric Data

- Even when the file contains numeric data, it is on disk as a **set of characters**
- In order to process any numeric data, it must be converted **after being read**
- Use built in methods to convert a string to a double or integer

Included in java.lang.*

Method	Description
`parseDouble(String text)`	Returns the `double` value in the String `text`
parseInteger(String text)	Returns the `int` value in the String `text`

Example Program: AvgScore (reads test scores that are stored one score per line in a text file and then reports the average)

```
import java.io.*;

/**
 * A program that calculates the average from a set of scores
 * stored in a text file containing one numeric score per line.
 */
public class AvgScore {

      public static void main(String[] args) {
            File dataFile = new File("scores.dat");
            FileReader in;
            BufferedReader readFile;
            String score;
            double avgScore;
            double totalScores = 0;
            int numScores = 0;

            try {
                  in = new FileReader(dataFile);
                  readFile = new BufferedReader(in);
            while ((score = readFile.readLine()) != null ) {
                  numScores += 1;
                  System.out.println(score);
                  totalScores += Double.parseDouble(score);
            }
            avgScore = totalScores / numScores;
            System.out.println("Average = " + avgScore);
                  readFile.close();
                  in.close();
            } catch (FileNotFoundException e) {
                  System.out.println("File does not exist or could not be
found.");
                  System.err.println("FileNotFoundException: " +
e.getMessage());
            } catch (IOException e) {
                  System.out.println("Problem reading file.");
            System.err.println("IOException: " + e.getMessage());
      }
      }
 }
```

Output:

```
88
92
76
95
67
82
91
Average = 84.42857142857143
```

Programming Exercise:

Create a Statistics application that reads names and scores from a data file named test1.data (supplied for you). The file contains a student name on one line followed by the student's test score on the next line. The Statistics application should read and display each name and score. After all the scores have been displayed, the lowest score, highest score, and average score should be displayed.

Submit your source code to the Google Doc "ICS4U – Activity Submission Form"