February 17, 2017

Purpose: To input a data file of naturally occurring numbers to a histogram.

Output:

Wind Average in Illinois (mph)
* = approximately 52 occurrences

First digits of Wind Speed average (mph)

```
 0: *
 1: **********************************
 2: ***************
 3: ****************************
 4: ****************************
 5: ************************
 6: ************************
 7: ******************
 8: ***************
 9: ************
```

```
Sample data file
4.2
2.6
3
4.8
4.5
3.7
4.4
7
6.2
5.4
3.9
4.2
5.3
5.6
7.6
6.4
4.6
3.4
3
6.6
4.8
6.2
8.2
8.2
5.5
4.4
2.2
3.8
3.7
2.9
2.4
7.2
11.1
4.2
2.1
7.4
5.7
2.7
2.3
4
3
8.6
6.1
4.5
4.9
7.4
6.8
8.5
5.4
6.7
7.2
7.6
6.7
12.4
13.3
12.5
10.8
7
5.7
```

Reflection:

My data source is the average wind speed in Illinois from August 8, 1989 to December 31, 2016 taken from 19 different stations. From the histogram, it shows that the digit 1 occurs the most whereas 0, 2 and 9 the least. However, 1,3,4,5, and perhaps 6 shows they occur *roughly* more in the data source. I'm somewhat unclear how this connects to stats from taking the first digit of the data. My only conclusion from this is the histogram shows the probability of each first digits occurring. The 1's will occur the most then the numbers preceding it will occur less slightly curving the histogram such as it is shows with the wind average histogram.

This project took me about an hour to complete. I received help from CSC tutors at the PIT from Thomas Plonski. I was confused on how to print out the histogram. He helped me understand line 21 (graph.submit(Integer.parseInt(lines.substring(0,1)));) because at first the histogram was showing the ASCII of the text file. The histogram graphed from the 50s, which did not made sense since there are digits from 0-20 and first digits from 0-9.

```
package histogram_Illinois;
import java.io.*;
import java.util.Scanner;

public class AvgWindHisto {

	public static void main(String[] args) throws FileNotFoundException
	{
				Histogram graph = new Histogram(0,9); // contructor
		Scanner in = new Scanner(new File("avg_wind_speed.txt"));

	String  lines;


	 while (in.hasNextLine())
	 {
	    lines = in.nextLine();

	  //  System.out.println(Integer.parseInt(lines.substring(0,1))); //displays the first  digits
	   //parseInt(String s) – This returns an integer (decimal only).
	   //substring is a subset of another string.
	     // substring of lines integer.parseInt to turn String to numbers
	    graph.submit(Integer.parseInt(lines.substring(0,1)));


	 }
	 System.out.println(graph);
	     in.close();

	}

}
```