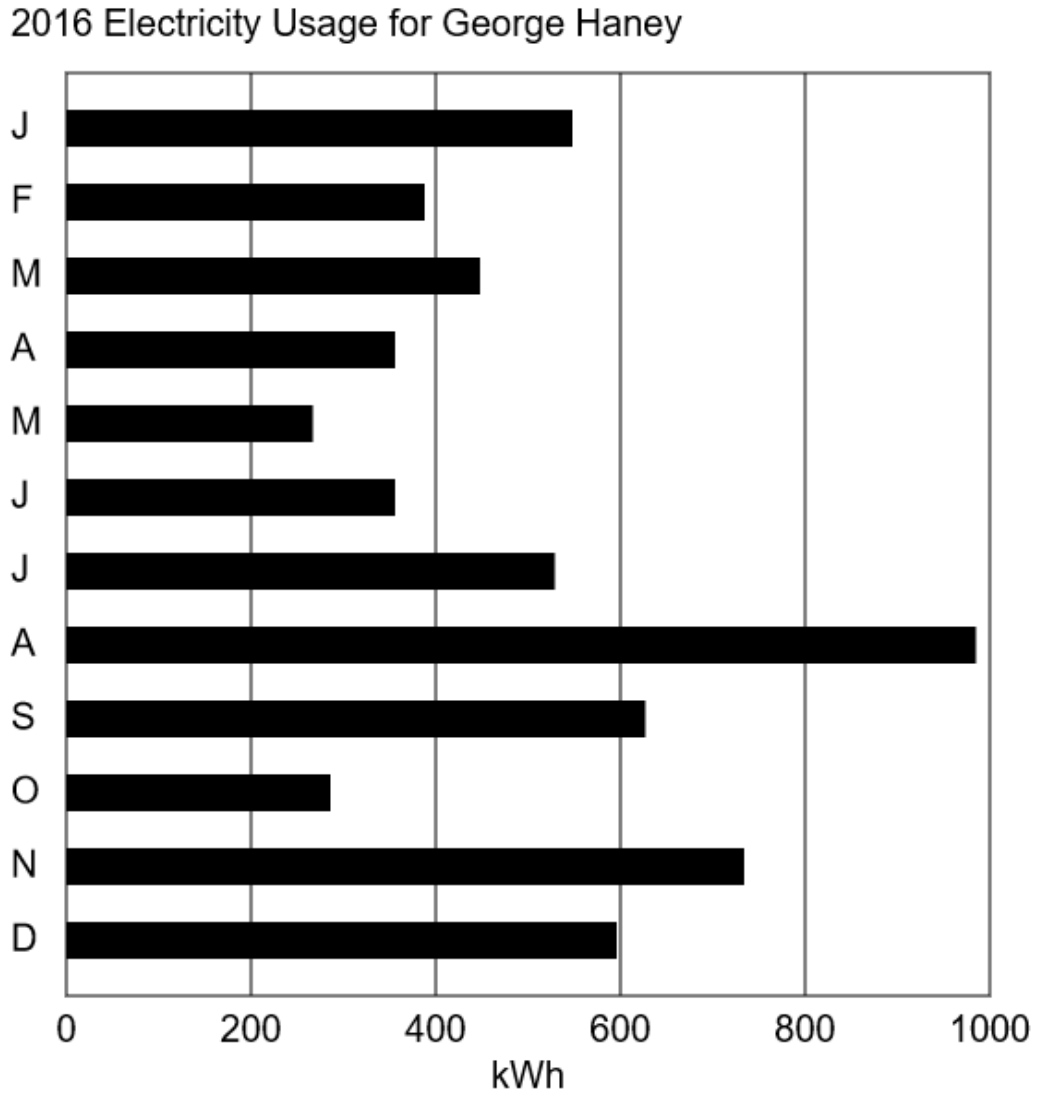
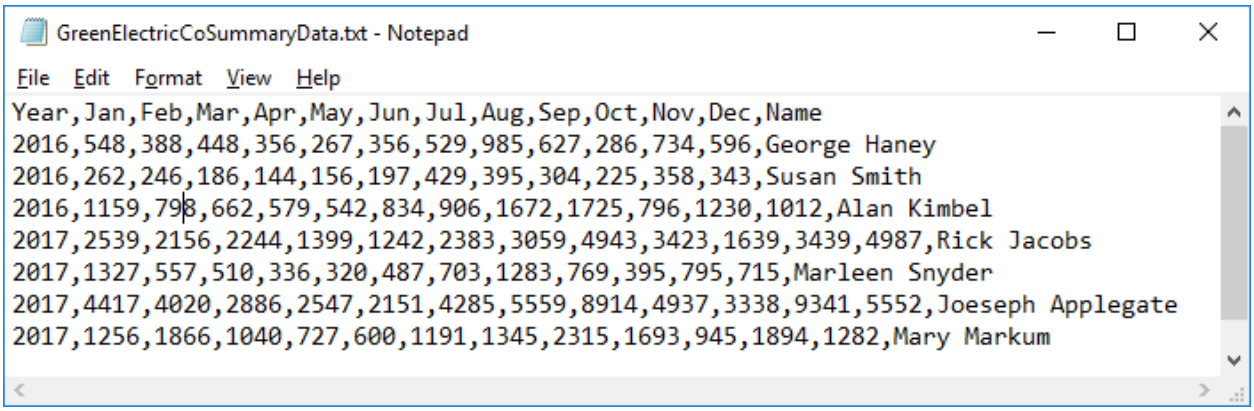
Team JavaScript Programming Project

In order to promote environmental awareness, *Green Electric Company* is planning on providing an end of year summary of electric usage for its residential customers. Included in this summary will be a chart showing monthly kWh (kilowatt-hour) usage. The chart will appear something like the one shown below.



A line at the top of the chart shows two things: the year of electric service and the name of the person who has the account with *Green Electric*. The left side of the chart has one-letter abbreviations for each of the twelve months in the year. Each month has a bar whose length corresponds to the number of kWh consumed during that month. The bottom of the chart contains labels with the number of kWh represented by each of the vertical gridlines on the chart.

Information for each customer is contained in a comma-delimited .txt file on the Web server. A test file with several customers' data is provided for you in your project folder. This file appears as follows when opened in Notepad:



The top line contains field headers, and each line thereafter contains data for a *Green Electric* customer: the year of service, the number of kWh consumed for each of the twelve months of the year, and the customer's name. This file is named **`GreenElectricCoSummaryData.txt`** and should be uploaded to the server along with your completed HTML file, and the file **`myAjaxLib.js`.** You are to use this Ajax library along with its **`doAjax()`** function in order to download the customer data from the server to the browser.

There should be a button that appears as follows on the bottom of your web page:

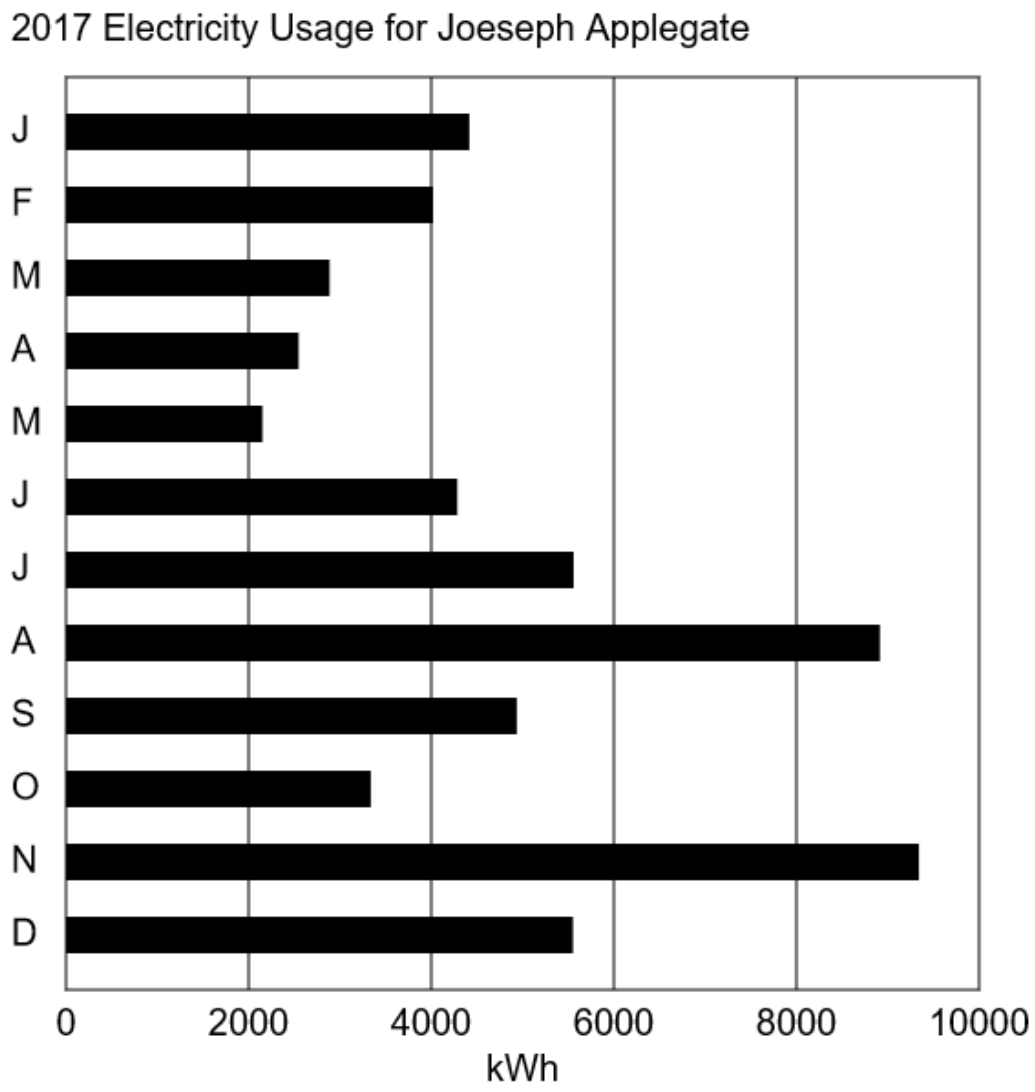
The first time this button is clicked, it should display the chart for George Haney. Each time the button is clicked thereafter, it should display the chart for the next person in the summary data file. When Mary Markum's (the last person in the data file) chart is on display, a click of the button should cycle back to the beginning and display the chart for George Haney, with this process continuing in a cyclical fashion until the user closes the browser.

More about the chart…

Every chart is to be exactly the same size in pixels, 500 pixels from the vertical line at 0 kWh to the vertical line on the right (marked 1000 for George Haney's chart shown on the previous page). The chart will always display exactly six vertical grid lines each separated by 100 pixels. The number of pixels from the horizontal line at the top of the chart to the horizontal line at the bottom should also be 500. Each bar should be 20 pixels wide, and there should be 20 pixels between each of the bars on the chart. The chart itself, the line of text at the top of the chart, the axis labels and numbers are all part of the canvas.

The challenge in this project comes from noticing that the maximum number of kWh used in a month varies from one customer to another. The numbers at the bottom of the chart will depend upon the maximum number of kWh used by a given customer. George Haney's maximum monthly kWh is 985,

while Joseph Applegate's maximum is 9341. As a result George's chart goes from 0 to 100 kWh, while Joseph's goes from 0 to 10000 and would appear as follows:



Therefore, to keep all charts exactly the same size, *the number of kWh per pixel on the chart will vary from one customer to the next*. In addition, *the number scaling at the bottom will also vary from one customer to the next*. You should design the application so that the number at the bottom right corner of the chart will always be one of the following: 500, 1000, 1500, 2000, 2500, 5000, or 10000 kWh. You can compare each of these numbers in sequence to the maximum monthly kWh for a given customer. As soon as you get to the point where the number in the sequence exceeds the maximum monthly kWh, then that sequence number becomes the value that should appear in the lower right corner of the chart. For example, 1000 exceeds George Haney's maximum (985) monthly kWh when you reach 1000 in the sequence, so 1000 is the number that should appear in the lower right corner of the chart. As another example, 2000 is the first number in the sequence that exceeds Alan Kimbel's maximum (1725) monthly kWh, so 2000 is the number that should appear in the lower right corner of the chart for Alan. ***You may assume that the maximum monthly kWh for any residential customer will never exceed 10000 kWh.***

Your application should work perfectly well for any file that follows the structure of the data in the file **`GreenElectricCoSummaryData.txt`**, but this file is the one that is to be loaded onto the server and used to test your application.

Two cautions…

1. When the txt file is read via Ajax, remember that all kWh numbers in the text file are treated as strings. In order to use these numbers in computations and comparisons you will need to use **`parseInt()`** to convert them to integers.
2. Since this Web application involves Ajax, in order to test/debug your application, you will need to load all files into the web server.
3. Don't forget to include the reference to **`myAjaxLib.js`** in your html file:

```
<script src="myAjaxLib.js"></script>
```