

# Team 18 First Prototype Testing Report

To: Professor Pisano  
From: Greener Living  
Team: 18  
Date: 11/19/2020  
Subject: Team 18 First Prototype Testing Report

## 1.0 Introduction

In our senior design project so far, we have started the technical parts of our project. As of right now, we have looked into the two integral parts of the project, which is the database (InfluxDB) and our website. We are still holding off on the hardware (iotaWatt) until we are able to get pictures of the circuit breakers from our customer. In our demo, we showed our end-to-end demonstration of the database into the website.

## 2.0 Demo

### 2.1 Equipment and Setup Summary

There are two major parts of the database that we used (one is InfluxDB and the other is a graphical software called Grafana). For InfluxDB, version 1.8.3 was used. In order to run the InfluxDB locally, we ran the application file *influxd* to start the server on localhost:8086 and ran the application file *influx* to open the CLI. Using the InfluxDB CLI, We downloaded a database called NOAA\_water\_database which contained sample data. We then set up Grafana, which we used to visualize the data. Downloading the latest version, we created a custom conf file which will determine the settings the Grafana server will run on. The settings we had in the custom.conf file allowed the graphs on our server to be embedded. Running Grafana on localhost:3000, we link our InfluxDB with Grafana to allow us to use the data in NOAA\_water\_database.

```
D:\InfluxDB\influxdb-1.8.3-1\influxd.exe
tsm", "id": 0, "duration": "1.007ms"}
2020-11-22T02:55:14.995701Z info Opened file {"log_id": "0QcTs_kG000", "engine": "tsm1", "service": "filestore", "path": "C:\\Users\\Brian\\.influxdb\\data\\_internal\\monitor\\2\\000000001-000000001.tsm", "id": 0, "duration": "0.000ms"}
2020-11-22T02:55:14.998694Z info Reading file {"log_id": "0QcTs_kG000", "engine": "tsm1", "service": "cacheloader", "path": "C:\\Users\\Brian\\.influxdb\\wal\\_internal\\monitor\\1\\_00001.wal", "size": 845255}
2020-11-22T02:55:15.020634Z info Opened shard {"log_id": "0QcTs_kG000", "service": "store", "trace_id": "0QcTs_kG000", "op_name": "tsdb_open", "index_version": "inmem", "path": "C:\\Users\\Brian\\.influxdb\\data\\_internal\\monitor\\1\\", "duration": "61.833ms"}
2020-11-22T02:55:15.033635Z info Opened shard {"log_id": "0QcTs_kG000", "service": "store", "trace_id": "0QcTs_kG000", "op_name": "tsdb_open", "index_version": "inmem", "path": "C:\\Users\\Brian\\.influxdb\\data\\_internal\\monitor\\2\\", "duration": "69.848ms"}
2020-11-22T02:55:15.524205Z info Opened shard {"log_id": "0QcTs_kG000", "service": "store", "trace_id": "0QcTs_kG000", "op_name": "tsdb_open", "index_version": "inmem", "path": "C:\\Users\\Brian\\.influxdb\\data\\_internal\\monitor\\1\\", "duration": "562.413ms"}
2020-11-22T02:55:15.538168Z info Open store (end) {"log_id": "0QcTs_kG000", "service": "store", "trace_id": "0QcTs_kG000", "op_name": "tsdb_open", "op_event": "end", "op_elapsed": "768.825ms"}
2020-11-22T02:55:15.540165Z info Started monitor service {"log_id": "0QcTs_kG000", "service": "monitor"}
2020-11-22T02:55:15.541175Z info Registered diagnostics client {"log_id": "0QcTs_kG000", "service": "monitor", "name": "build"}
2020-11-22T02:55:15.544158Z info Registered diagnostics client {"log_id": "0QcTs_kG000", "service": "monitor", "name": "runtime"}
2020-11-22T02:55:15.549599Z info Registered diagnostics client {"log_id": "0QcTs_kG000", "service": "monitor", "name": "network"}
2020-11-22T02:55:15.550593Z info Registered diagnostics client {"log_id": "0QcTs_kG000", "service": "monitor", "name": "system"}
2020-11-22T02:55:15.552588Z info Starting precreation service {"log_id": "0QcTs_kG000", "service": "shard-precreation", "check_interval": "10m", "advance_period": "30m"}
2020-11-22T02:55:15.552588Z info Storing statistics {"log_id": "0QcTs_kG000", "service": "monitor", "db_instance": "_internal", "db_rp": "monitor", "interval": "10s"}
2020-11-22T02:55:15.553583Z info Starting snapshot service {"log_id": "0QcTs_kG000", "service": "snapshot"}
2020-11-22T02:55:15.556575Z info Starting continuous query service {"log_id": "0QcTs_kG000", "service": "continuous_querier"}
2020-11-22T02:55:15.558571Z info Starting HTTP service {"log_id": "0QcTs_kG000", "service": "httpd", "authentication": false}
2020-11-22T02:55:15.561563Z info opened HTTP access log {"log_id": "0QcTs_kG000", "service": "httpd", "path": "stderr"}
2020-11-22T02:55:15.563557Z info Listening on HTTP {"log_id": "0QcTs_kG000", "service": "httpd", "addr": "[::]:8086", "https": false}
2020-11-22T02:55:15.565555Z info Starting retention policy enforcement service {"log_id": "0QcTs_kG000", "service": "retention", "check_interval": "30m"}
2020-11-22T02:55:15.565555Z info Listening for signals {"log_id": "0QcTs_kG000"}
2020-11-22T02:55:15.568544Z info Sending usage statistics to usage.influxdata.com {"log_id": "0QcTs_kG000"}
[httpd] :1 - [- 21/Nov/2020:21:55:17 -0500] "GET /ping HTTP/1.1" 204 0 "-" "InfluxDBShell/1.8.3" 26d14797-2c6e-11eb-8001-88d7f63aef0e 22868
```



numbers would not functionally make sense. As said before, the Grafana software is very integral to our data representation for our senior design project. They offer customizations of all influxDB databases into their graphing software through the creation of dashboards and panels. In the future, we will make sure to try and at least find some electricity data and if possible, make it also real-time.



### 2.3 Website

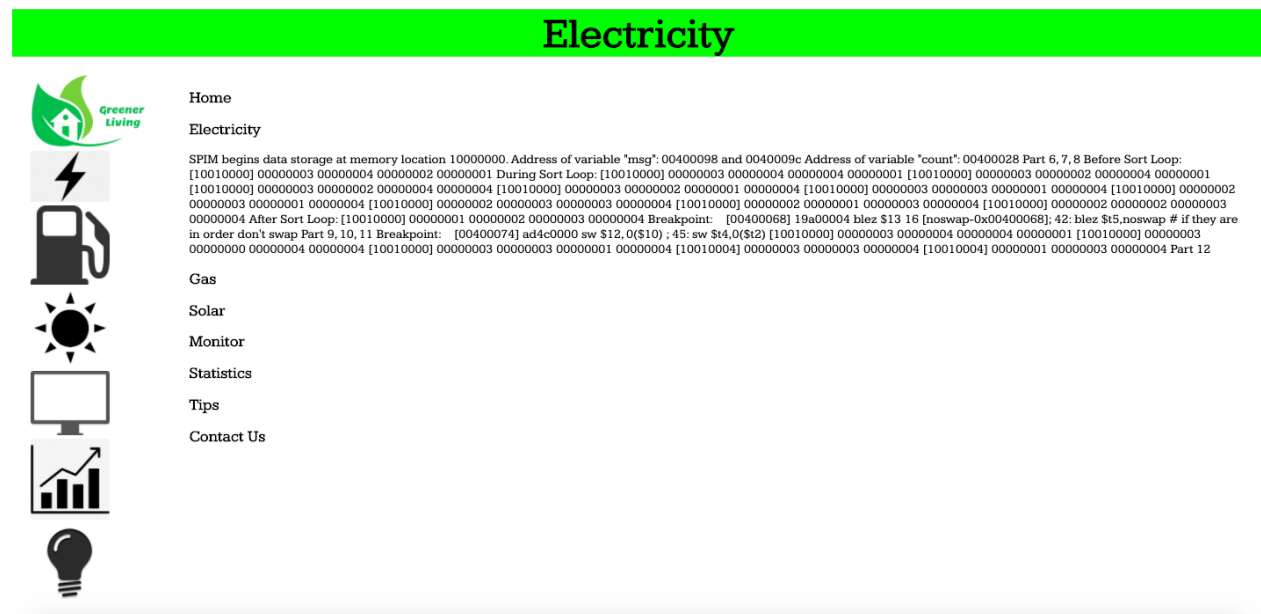
The website design includes several sections for monitoring and displaying electricity and gas usage. It also has sections for displaying the solar energy being produced. Lastly, it has sections that will include general energy saving tips and contact information for our group. It will have our logo in the top left corner of the website and under it, the left 10-15% of the screen will be used for the section titles. The rest of the space will be used to display information.

The website is still in development and comes with our logo and the sections we intend to have in it. Aside from that, it has a few images to get a general sense of the layout, as well as a paragraph that is unrelated to the design for learning purposes. The last bit of content is a green bar that I added behind the title of the page so that it resembles the design slightly. The website folder currently consists of two files: one is an HTML file and the other is a CSS file. The HTML file basically sets up the website with information and images we want to display, while the CSS file adds color and formats the content. There is also a folder within the set of files that contains the images being used in the website. There will be javascript incorporated later in order to add better functionality to the website.

Design:



### Current Implementation:



### **3.0 Measurable Criteria**

- Grafana is able to integrate with InfluxDB
- Grafana is able to create dashboard or panels that satisfies customer's needs
- Embedded graphs are shown correctly on web application
- Website is set up and needs graph input and general design edits

### **4.0 Conclusion**

We think our demo did show a great implementation of our current end-to-end product. However, Professor Pisano did make a great point that our project will have a real-time data component, and we were only able to show a historic data component with the data we had. We think moving forward, our team will find a way to create “fake” real-time data, whether it would be through a python script or etc, to show that influxDB and Grafana actually work. We also think that although our website was not finished, it was great to show that we would be able to offer time or range customization for the customer to understand their own history, which is the biggest part of our frontend. However, we think we were able to show that we are able to achieve our four measurable criteria (the minimum at least) in our first prototype testing plan.