



Capstone 2019: IPL RFFD Device Final Report

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Project purpose and significance

- Create a website with a stable backend and frontend for the RFFD
- Improve the RFFD's software, primarily accuracy
- Able to be used on Phone's and Tablet Devices
- Furthen the future of this project by providing feedback
- Overall, hopefully prevent power blowouts throughout Indianapolis

Method and implementation



- Improved the Hardware by creating a 5mph buffer; the device will not send a ping unless the vehicle is moving
- Can now load online and offline; if offline, it will store the files in a text file and send it as soon as the device connects to the internet
- Using Node.js (at first) I tested the front end of the web server locally
- Using MySQL, I created a local database in order to store the data (used to be stored via json format)
- Stopped using Node.js and switched to Apache to host PHP applications, MySQL, and the front end GUI
- Heavily researched PHP since I had not used in prior to this semester
- Tested PHP scripts in Tesla
- Researched best web hosting software, such as AWS, Google Cloud, settled using Siteground (\$5 a month!) while practicing their methods
- Moved the locally hosted files to Siteground; complications did occur, primarily server side scripting issues



So, does it work?

- **Mostly yes, it is functional with some components missing:**
 - Advanced filter for Severity Page
 - Image Upload/Capture to store in Database
 - Simple Database, not Complex but can easily be improved on
 - A fully functional Admin panel where the admin team can C.R.U.D (Must use Siteground admin panel to change it)
 - Search Bar and Heatmap Overlay **DO NOT** like each other
- **It's not over though!**

I will be continuing this project during the Summer as I hunt for a job and fix up, improve and patch the glaring issues; Fall is when the next group will go on from my position

[DEMO!](#)



Concluding Thoughts

- With my familiarity with C/C++, it definitely helped with the first part of the project
- I have had experience creating a front end website in past courses
- I had no experience prior with working in server side programming (Such as PHP, Node.js and web hosting)
- Because of this, I had to self-teach myself the in's and out's of creating an entire backend portion of a website! (Which had little to none initially)
 - AWS has great tutorials and "classes" that demonstrate how to do this
- Very similar to a Full Stack Web Developer/Engineer (Which is done in teams)
- Since it was, it sparked many opportunities and has been a magnet on my resume!