Revitalizing Solar Insights: A Dashboard for West Tennessee Solar Farm

Joshua Chamberlain & Andy Lum

Mentor: Dr. Justin R. Sims

UT Martin

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Introduction

Motivation

Can we build an interactive dashboard to improve research and education accessibility, optimize power production, and advance sustainable energy practices?

R-Shiny & Functionalities

1. Provides an easier and more integrated way to creating web-based dashboards without needing to learn web development languages like HTML.

2. Provides Real-Time Data Visualization, Interactive Maps, Sensor Information Panel, Historical Data Analysis, User-Friendly Interface, Responsive Design, Dashboard Hosting and Export Data.

List of Technologies

1. **MySQL**: stores and manages sensor data in a table containing minute by minute data separated by data for each sensor.
2. **Python**: Retrieves data from the MySQL database and updates a Google Drive CSV for data simulation.
3. **R-Shiny**: Develops an interactive dashboard for data visualization.
4. **Shinyapps.io**: Hosts a web server to allow users from all major operating systems to be able to access the dashboard.
5. **Google Cloud Console**: Safeguards API information for enhanced data security.

Project Goals

1. **Streamlined Data Pipeline**
2. **Continuous Data Maintenance**
3. **R-Shiny Dashboard**: encompasses all of the aforementioned functionalities.
4. **Cross-Platform Accessibility**: Ensure inclusivity by designing a webpage that accommodates diverse laptop operating systems, guaranteeing a seamless user experience.
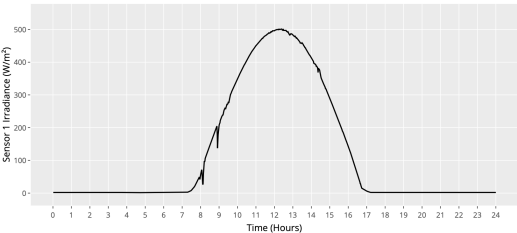
Dashboard Demo

Any Questions?

Comments?

Joshua Chamberlain: jospcham@ut.utm.edu.

Andy Lum: andlum@ut.utm.edu.