

# Revitalizing Solar Insights: A Dashboard for West Tennessee Solar Farm

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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

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  - Dashboard Hosting
  - Export Data

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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.

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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



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- 1 Streamlined Data Pipeline
- 2 Continuous Data Maintenance

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- ① **Streamlined Data Pipeline**
- ② **Continuous Data Maintenance**
- ③ **R-Shiny Dashboard**

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# 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

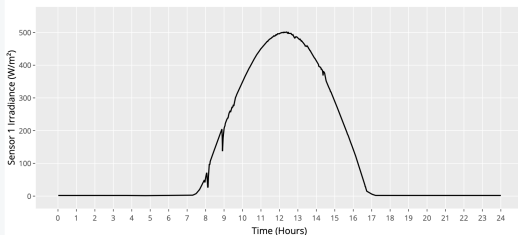
## West Tennessee Solar Farm



Live Data

Daily Data

Sensor 1 Plot



### Tomorrow's Forecast

Date	Metric	Value
2023-09-24	Predicted Average Cloud Cover (%)	82.62
2023-09-24	Predicted Average Temperature °F	72.96
2023-09-24	Weather Outlook	Overcast
2023-09-24	Predicted UV Radiation	7.21



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## ① Predictive Analysis

# Future Work

- 1 **Predictive Analysis**
- 2 **Notifications**

# Future Work

- ① **Predictive Analysis**
- ② **Notifications**
- ③ **Video Tutorial**

# Conclusion

The dashboard creates:

- ① An educational tool for people to learn about the Solar Farm Process
- ② A research tool that provides public data to study



# Any Questions?

Comments?

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