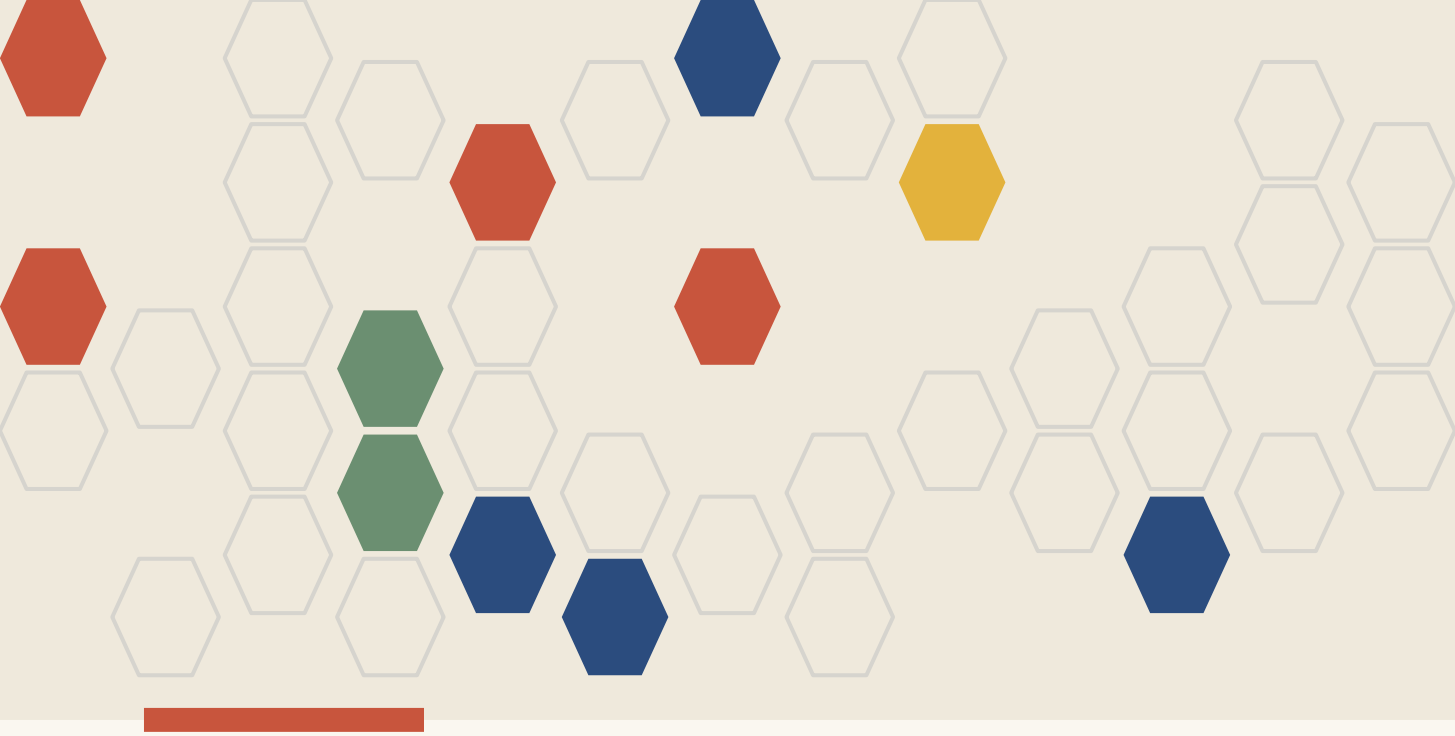




Solar Power Monitoring Dashboard

Live generation tracking for rooftop solar

Aarav Sharma · Diya Patel · Prof. R. K. Mehta · Electrical Engineering, 2025–26

Agenda

- 01** Introduction
 - 02** Literature & Gap
 - 03** Proposed System
 - 04** Implementation
 - 05** Results
 - 06** Conclusion
-



KEY IDEA

Solar plant monitoring is still handled manually in most places — slow, error-prone and hard to track.

Why this project matters

Introduction

- Solar plant monitoring matters to homeowners and installers every day
- Current methods are manual, slow and hard to scale
- Affordable technology now makes automation practical
- This project builds solar power monitoring dashboard as a working prototype

CONTEXT

Most homeowners and installers we surveyed still rely on paper or spreadsheets for solar plant monitoring.

Problem statement

1

Manual work

Solar plant monitoring takes hours of repetitive effort.

2

Errors

Mistakes creep in and are hard to trace.

3

No insight

Homeowners and installers lack data to make decisions.

Literature survey

Study	Approach	Limitation
Study A	Rule-based automation	Not adaptive
Study B	Mobile data collection	No analytics
Commercial tools	Full-featured suites	Costly and complex

Representative summaries — replace with your own citations.

Existing vs proposed system

Existing system

- ✓ Manual records
- ✓ Slow turnaround
- ✓ No reports

Proposed system

- Automated workflow
- Real-time dashboard
- One-click reports

System architecture

1	Input	Data captured from users or sensors
2	Process	Core logic validates and analyses
3	Store	Secure database and backups
4	Output	Dashboard, alerts and reports

Block diagram

Every module talks through one simple, testable interface.

The system is built in layers: an input layer, a processing service, a database and a dashboard. Each layer can be tested independently, which keeps solar power monitoring dashboard simple to maintain and extend.



Block diagram / flowchart

Technology stack

1

INA219 sensors

Voltage and current

2

ESP32

Data logger

3

InfluxDB

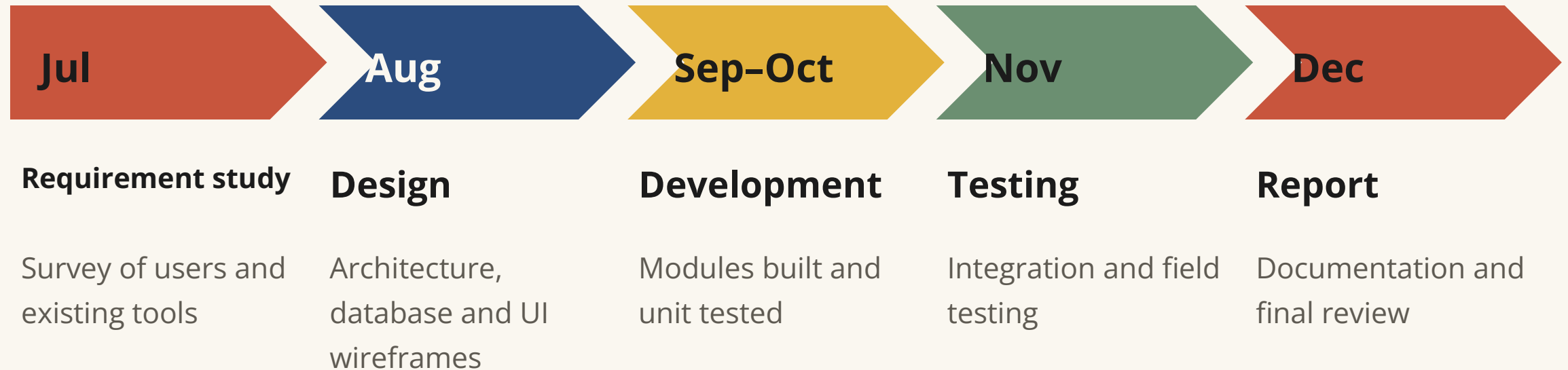
Time-series data

4

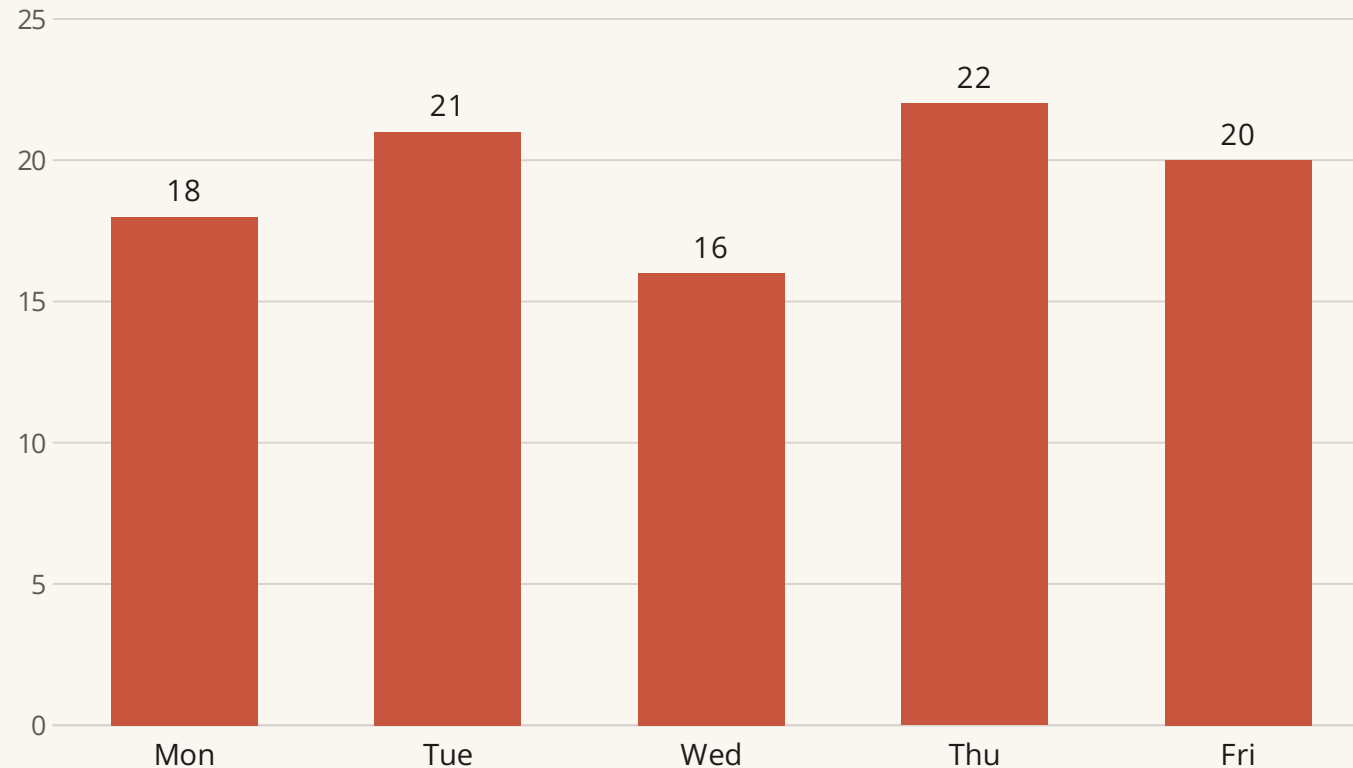
Grafana

Dashboard

Project timeline



Results



Sample data for illustration — replace with your own figures.

12%

more yield after fault alerts

The prototype improved steadily over the evaluation period (sample data).

Key outcomes

12%

more yield after fault
alerts

100%

records digitised

< 1 s

average response

Figures from our test setup (sample data).

Conclusion

- Solar Power Monitoring Dashboard meets its main objectives
- Automation saves time and reduces errors for homeowners and installers
- The design is simple to extend and maintain

Future scope

1

Mobile app

Native apps for Android and iOS

2

AI insights

Predictions from historical data

3

Scale-up

Deploy across more sites

Thank you

Questions and suggestions are welcome.

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