

FINAL YEAR PROJECT • B.TECH ENVIRONMENTAL
ENGINEERING

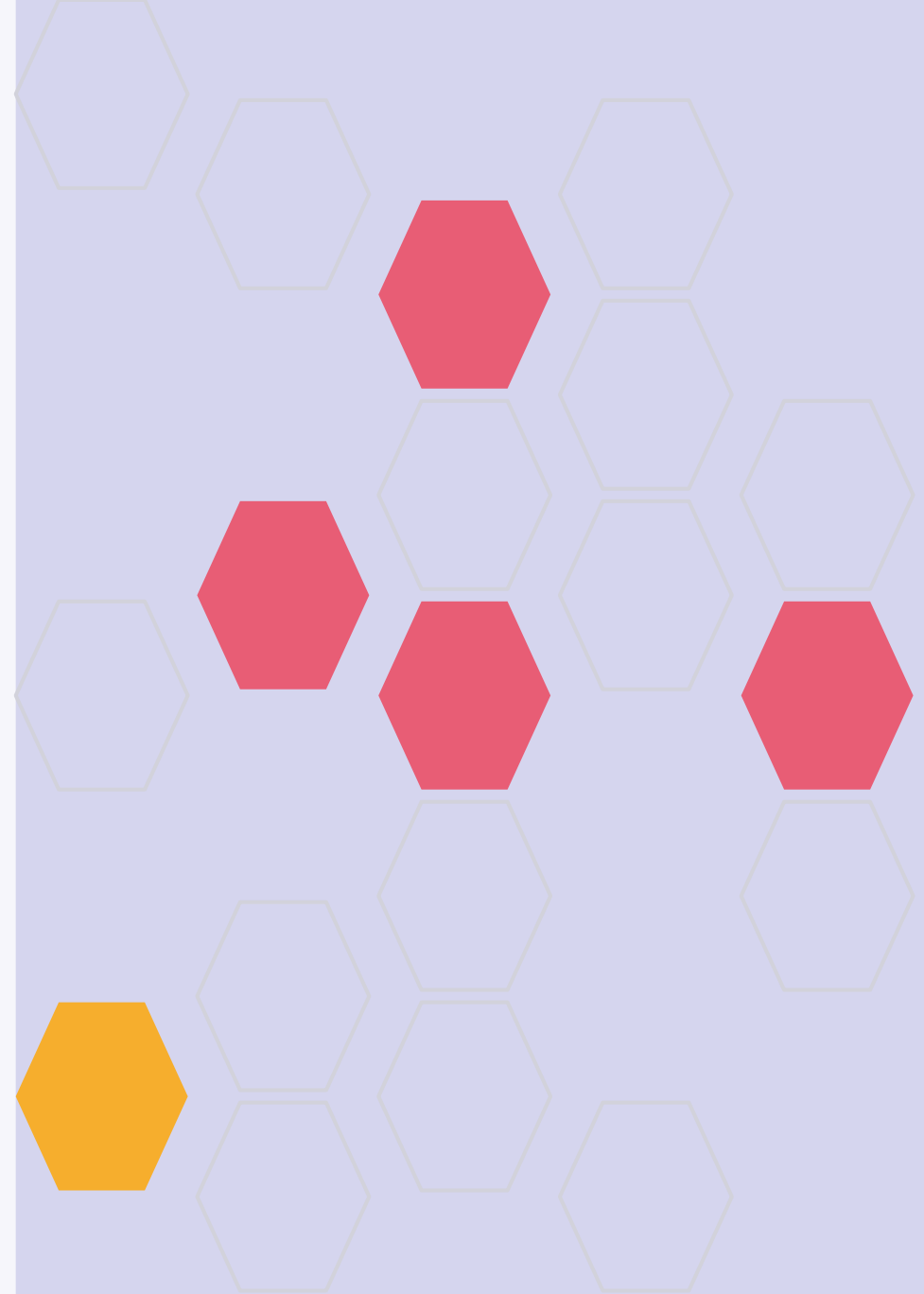
Air Quality Monitoring Network

Low-cost sensors mapping pollution across
a campus

PRESENTED BY
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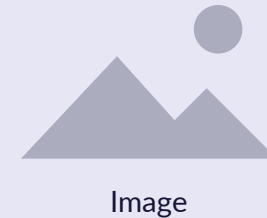
GUIDED BY
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DEPARTMENT
**Environmental
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Agenda

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

Air quality can change block
by block, but most cities
have only a few monitors.

Why this project matters

Literature survey

Study	Approach	Limitation
Kim et al.	Low-cost PM sensors	Drift without calibration
City AQ networks	Dense sensor grids	Proprietary platforms
Patel & Joshi	LoRa-based nodes	Small pilot only

Representative summaries — replace with your own citations.

Existing vs proposed system

Existing system

- Few official stations
- Hourly, delayed data
- No local alerts

vs

Proposed system

- Dense low-cost node network
- Minute-level live map
- Threshold alerts

System architecture



Measure

PMS5003 and CO₂
sensors in each node



Transmit

LoRa sends readings to a
gateway



Calibrate

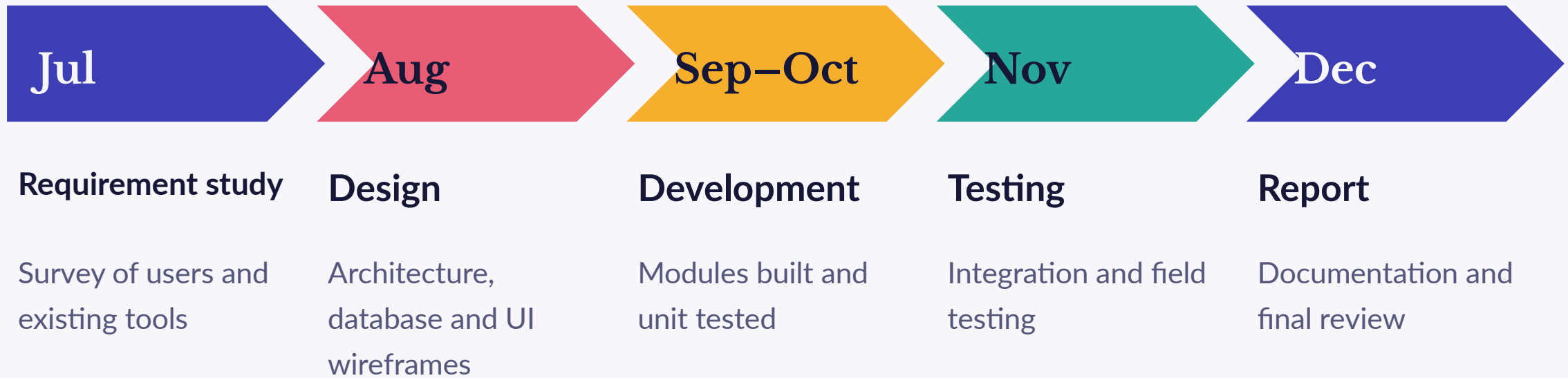
Correction model on the
server



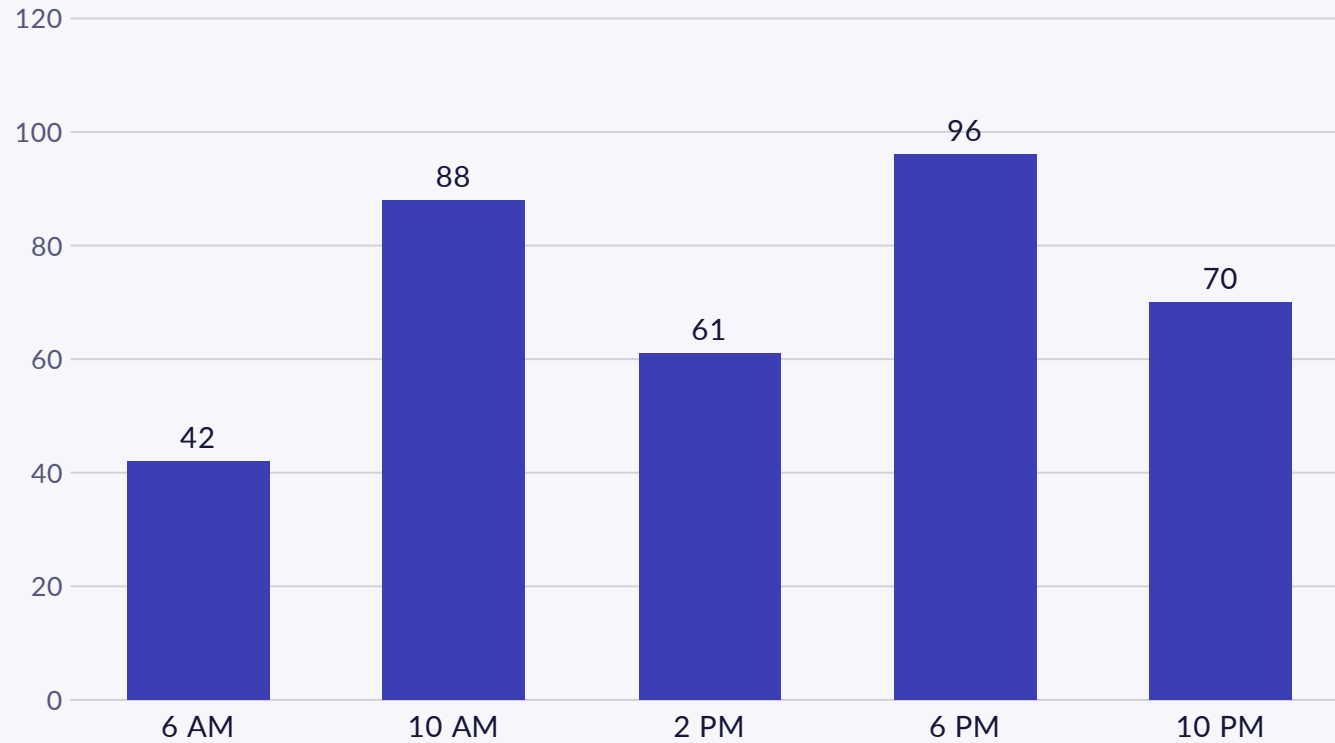
Visualise

Live map and alerts

Project timeline



Results



Sample data for illustration — replace with your own figures.

0.91

correlation with the reference monitor

Readings peak with morning and evening traffic, matching the reference station trend.

Conclusion

- ▶ Low-cost nodes give useful, local air-quality data
- ▶ Calibration is essential for accuracy
- ▶ A live map raises awareness quickly

Thank you

Questions and suggestions are welcome.

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