



FINAL YEAR PROJECT • B.TECH CIVIL ENGINEERING

Water Quality Monitoring Buoy

Floating sensors for lakes and ponds

PRESENTED BY

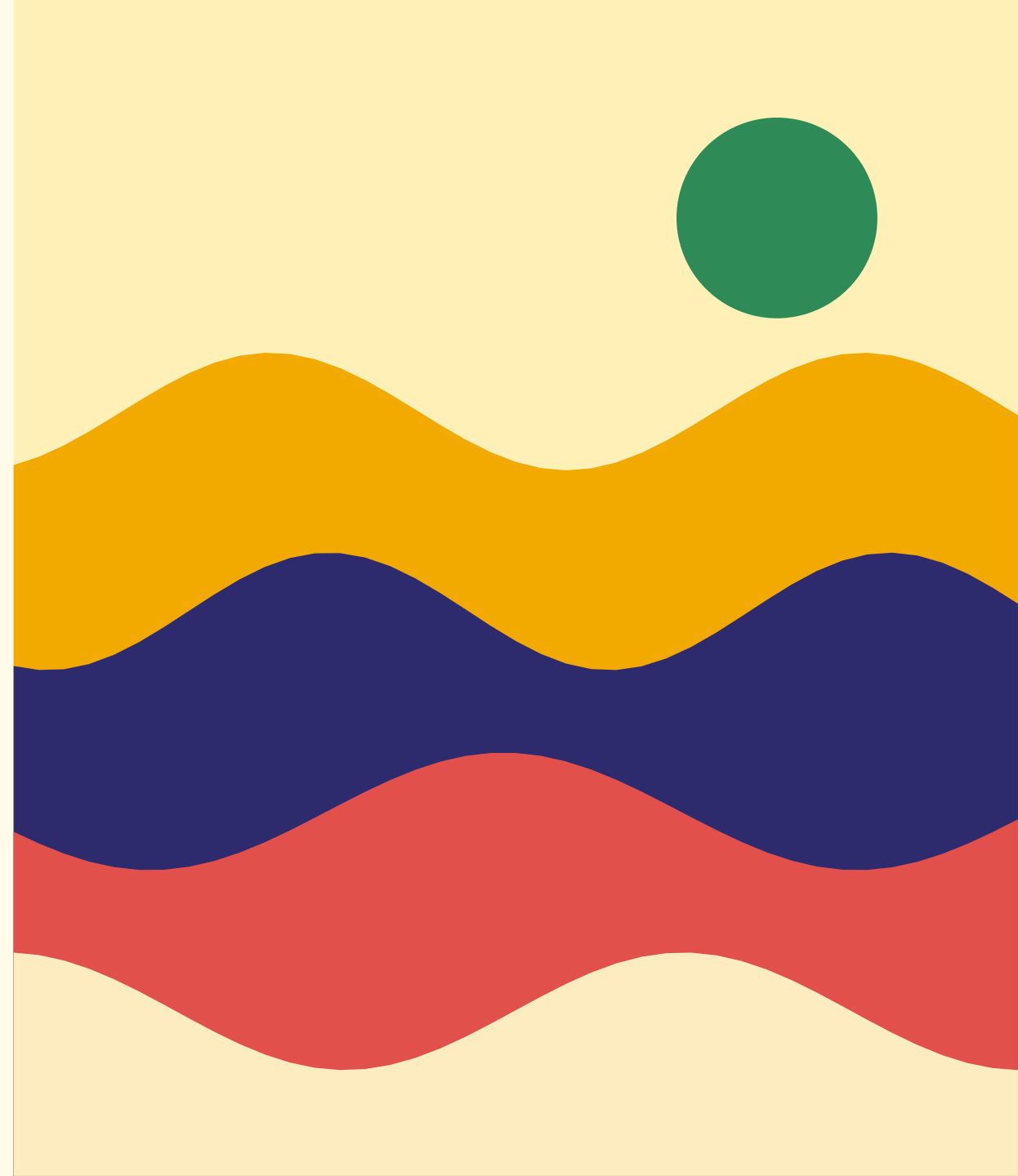
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GUIDED BY

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DEPARTMENT

**Civil Engineering,
2025–26**



Agenda

01

Introduction

02

Literature & Gap

03

Proposed System

04

Implementation

05

Results

06

Conclusion

01

INTRODUCTION

KEY IDEA

Lake water quality testing is still handled manually in most places — slow, error-prone and hard to track.

Why this project matters

Problem statement

01

Manual work

Lake water quality testing takes hours of repetitive effort.

02

Errors

Mistakes creep in and are hard to trace.

03

No insight

Municipal staff and researchers lack data to make decisions.

02

LITERATURE & GAP

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

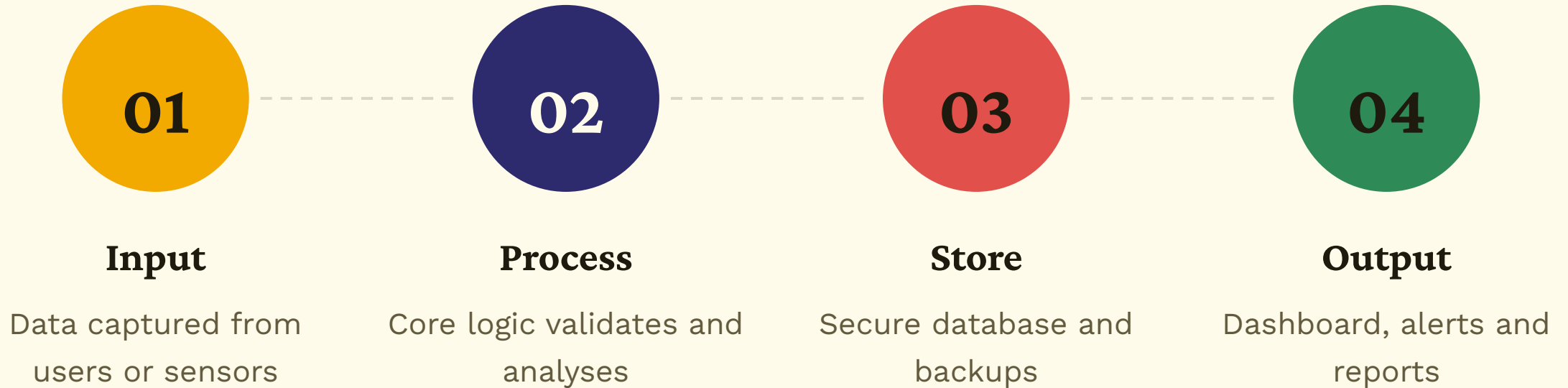
Proposed system

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

03

PROPOSED SYSTEM

System architecture



Block diagram

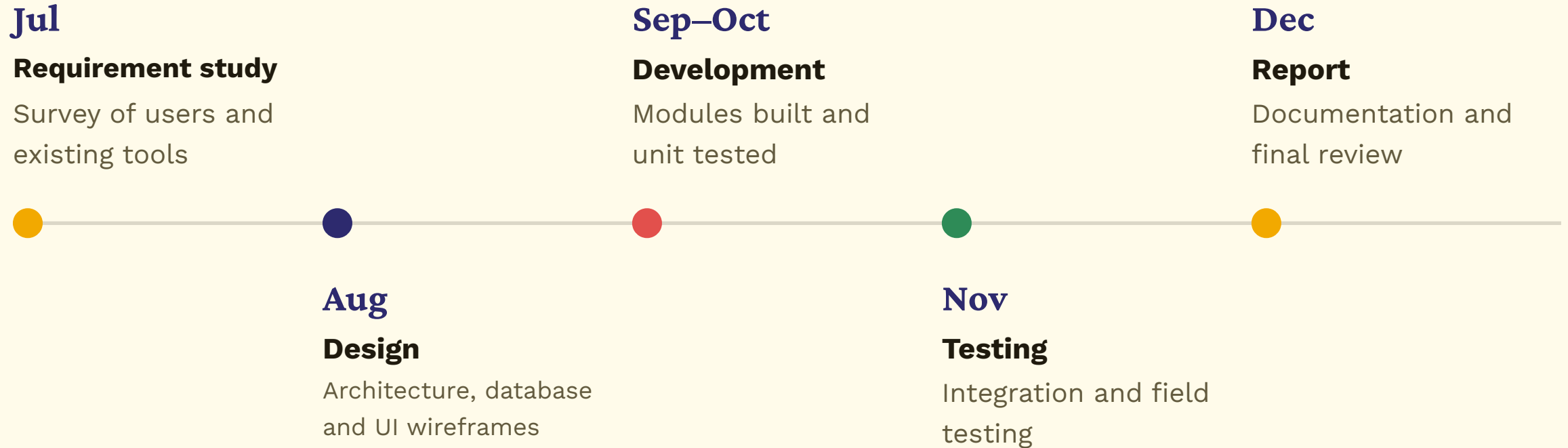
Every module talks through one simple, testable interface.

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 water quality monitoring buoy simple to maintain and extend.



Block diagram / flowchart

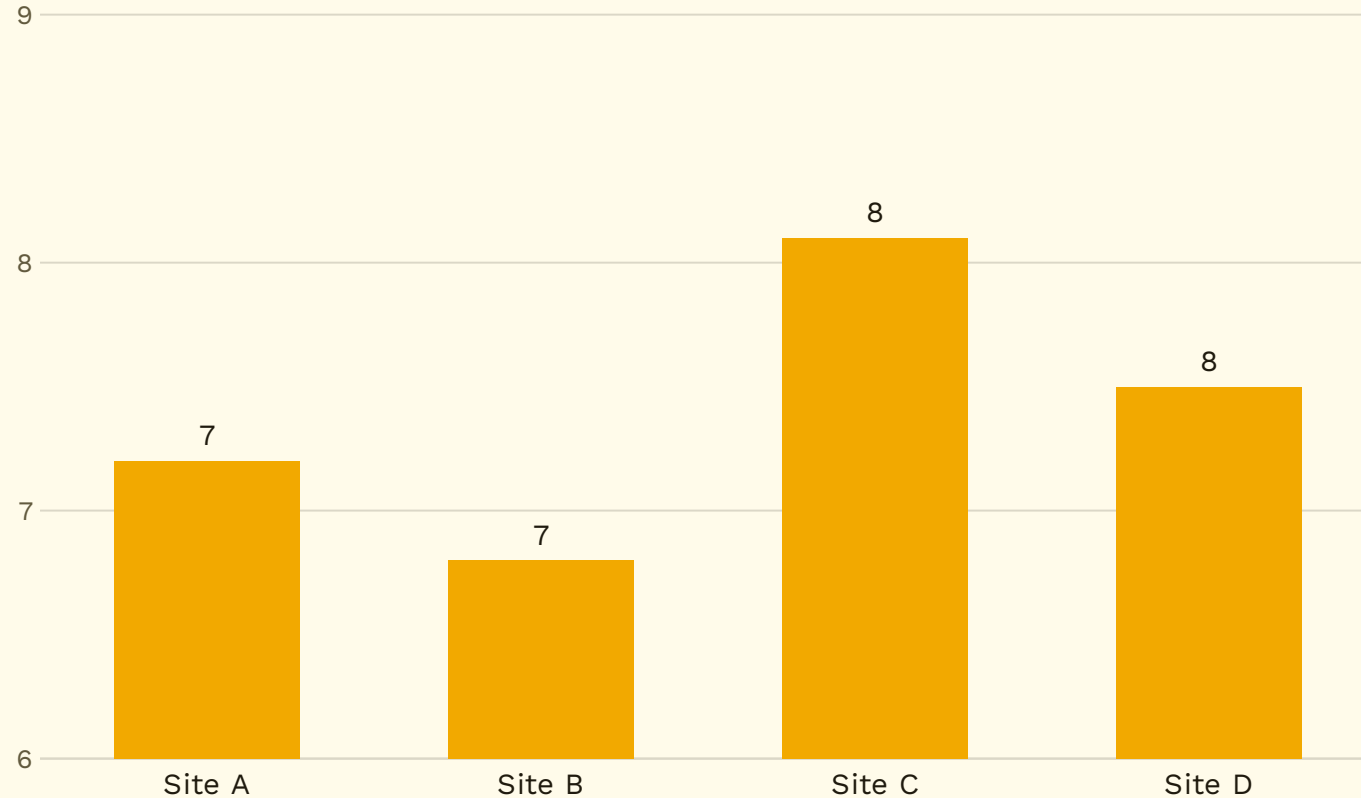
Project timeline



04

RESULTS

Results



Sample data for illustration — replace with your own figures.

24/7

continuous monitoring

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

Key outcomes

24/7

continuous monitoring

100%

records digitised

< 1 s

average response

Figures from our test setup (sample data).

Conclusion

- Water Quality Monitoring Buoy meets its main objectives
- Automation saves time and reduces errors for municipal staff and researchers
- The design is simple to extend and maintain



Image

Future scope

01

Mobile app

Native apps for Android
and iOS

02

AI insights

Predictions from
historical data

03

Scale-up

Deploy across more sites

Thank you

Questions and suggestions are welcome.

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