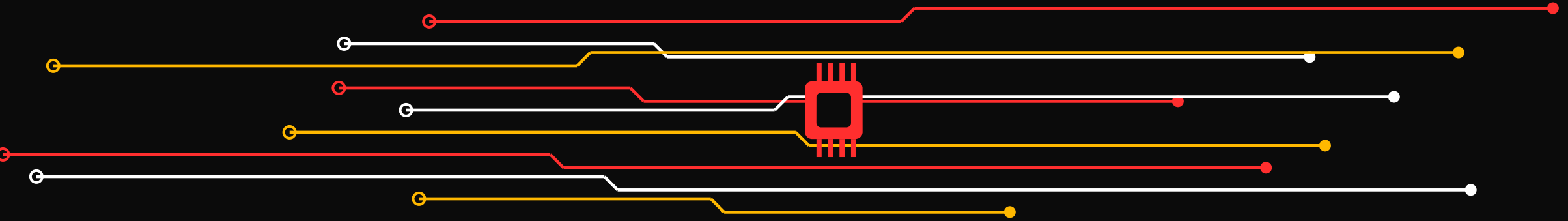


FINAL YEAR PROJECT · B.TECH CIVIL ENGINEERING

Water Quality Monitoring Buoy

Floating sensors for lakes and ponds

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



Agenda

01

Introduction

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Literature & Gap

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05

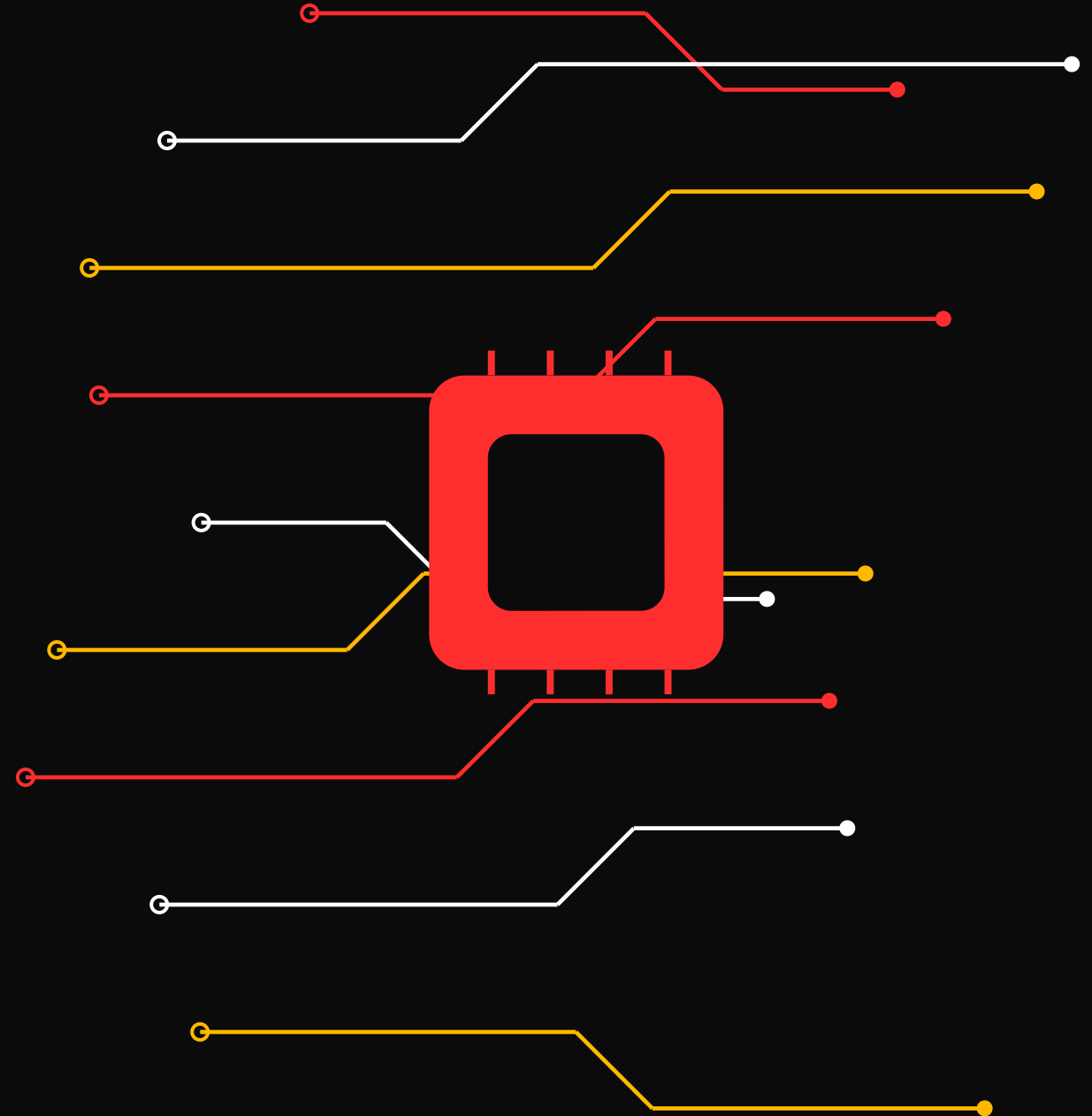
Results

06

Conclusion

01

INTRODUCTI ON



KEY IDEA

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

Why this project matters

Introduction

- Lake water quality testing matters to municipal staff and researchers every day
- Current methods are manual, slow and hard to scale
- Affordable technology now makes automation practical
- This project builds water quality monitoring buoy as a working prototype

CONTEXT

Most municipal staff and researchers we surveyed still rely on paper or spreadsheets for lake water quality testing.

Objectives

- Automate the core steps of lake water quality testing
- Give municipal staff and researchers a simple, mobile-friendly interface
- Store data securely and generate reports
- Evaluate the system against the existing process



Image

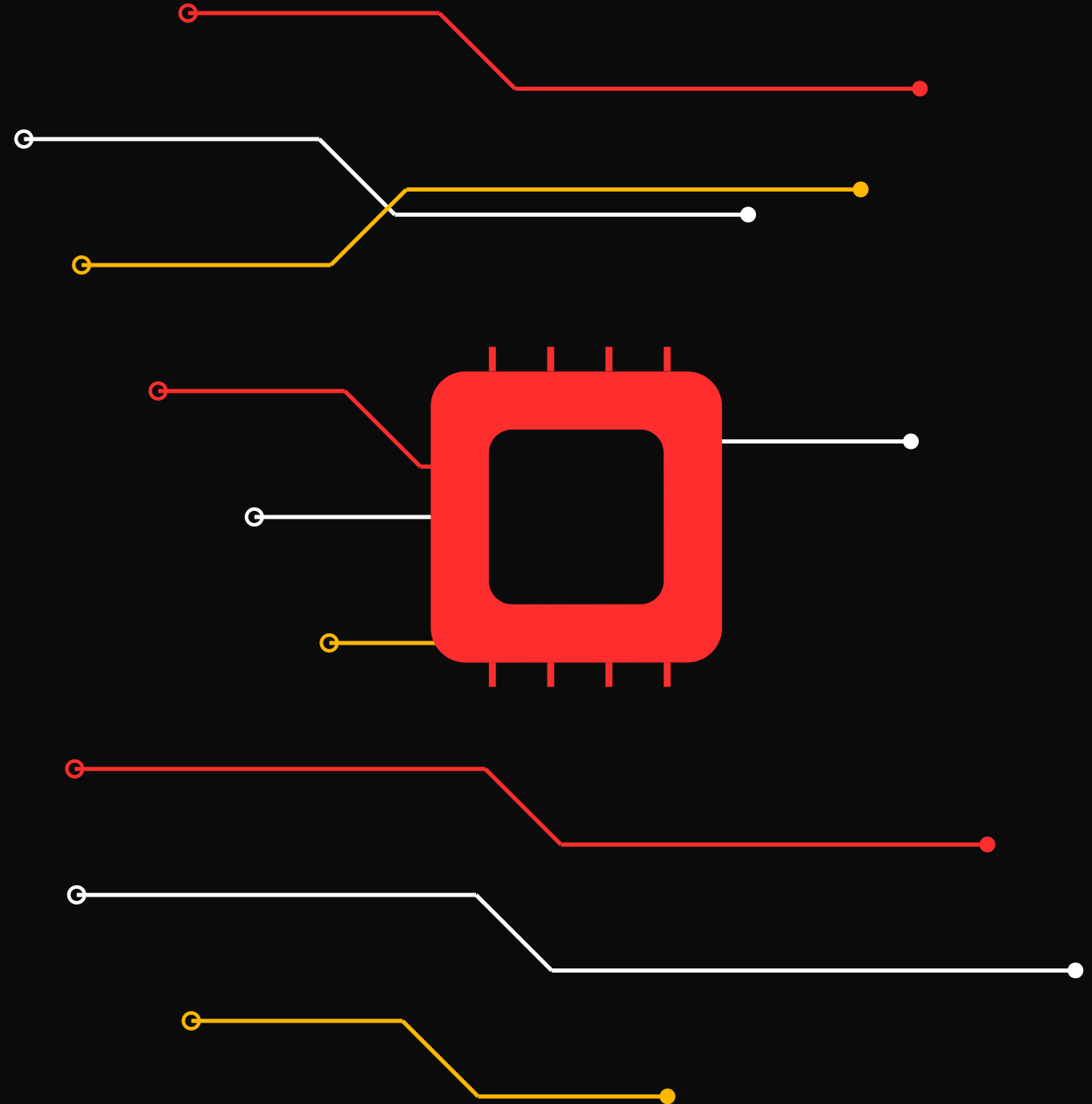
Literature survey

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

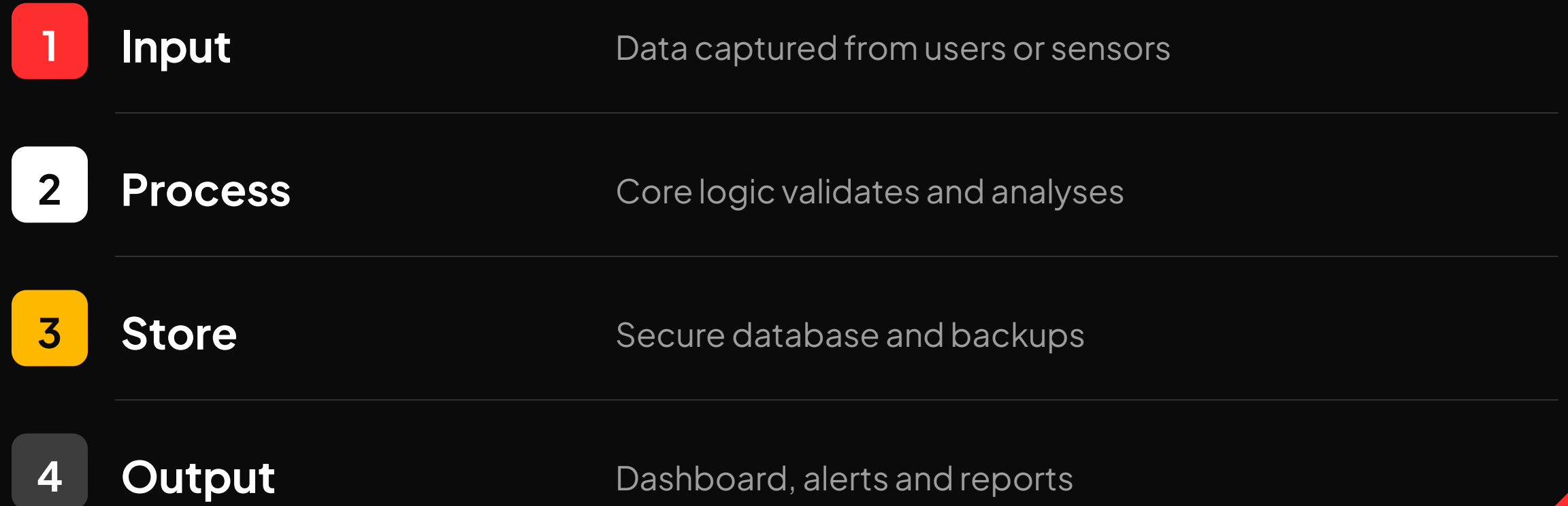
Representative summaries — replace with your own citations.

02

PROPOSED SYSTEM



System architecture



Block diagram



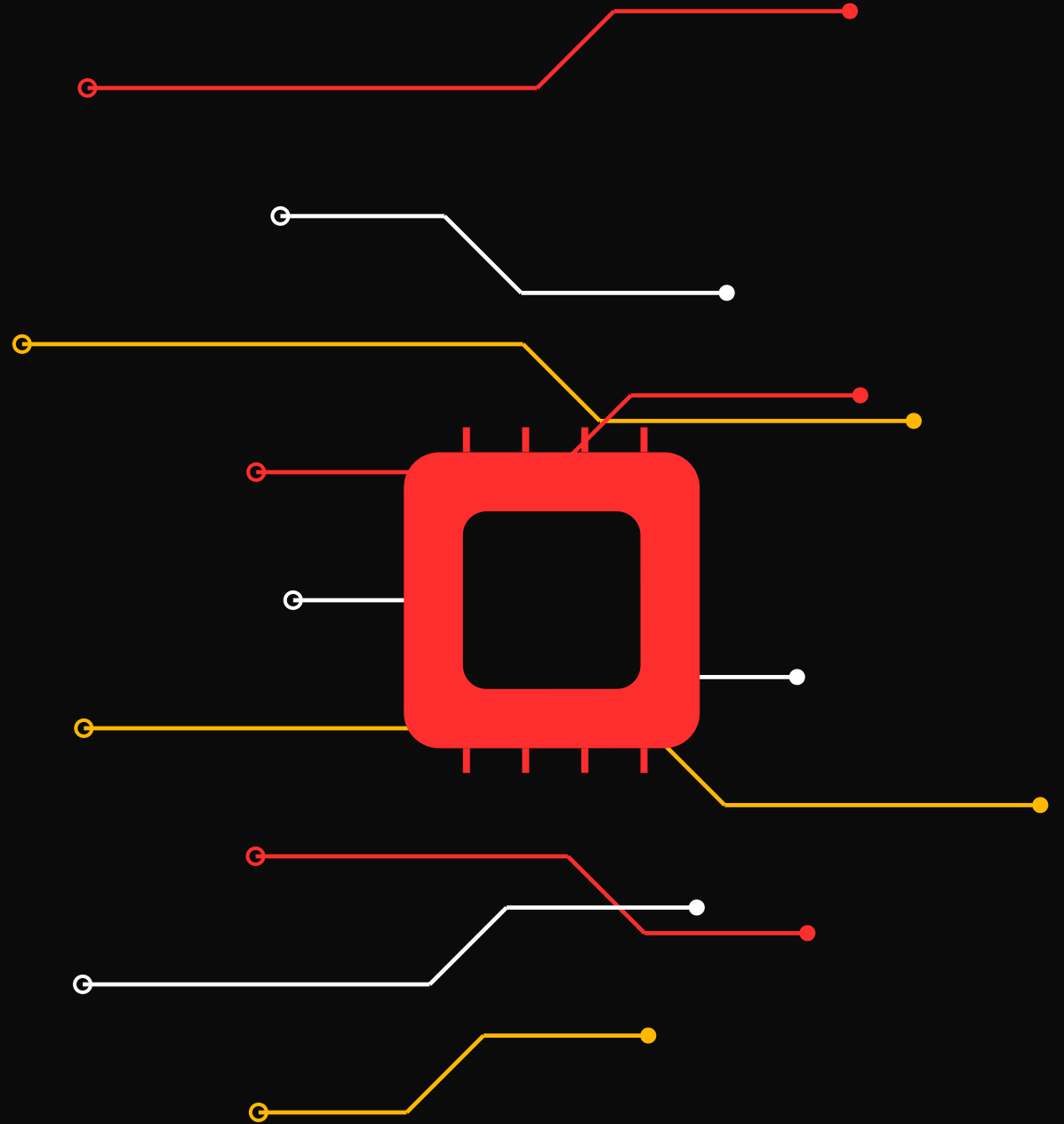
Block diagram / flowchart

Every module talks through one simple, testable interface.

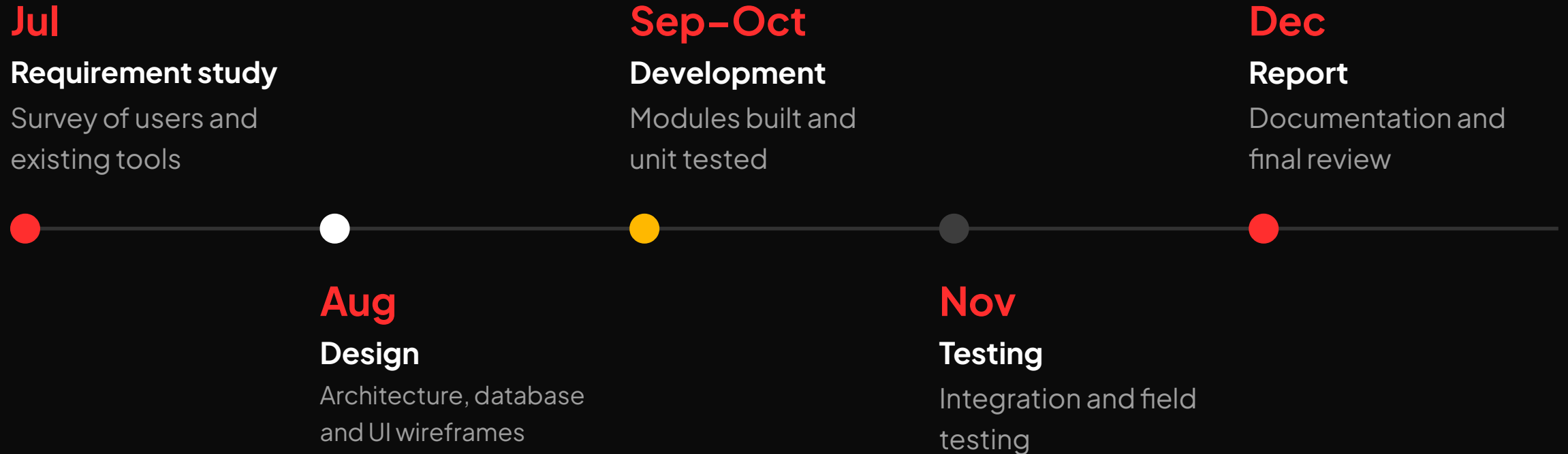
The system is built in layers: an input layer, a processing service, a database and a dashboard. Each layer can be tested independently, which keeps water quality monitoring buoy simple to maintain and extend.

03

IMPLEMENTATI ON



Project timeline



Implementation snapshots



Image 1

Main dashboard

Overview of live data



Image 2

Data entry

Simple forms with validation



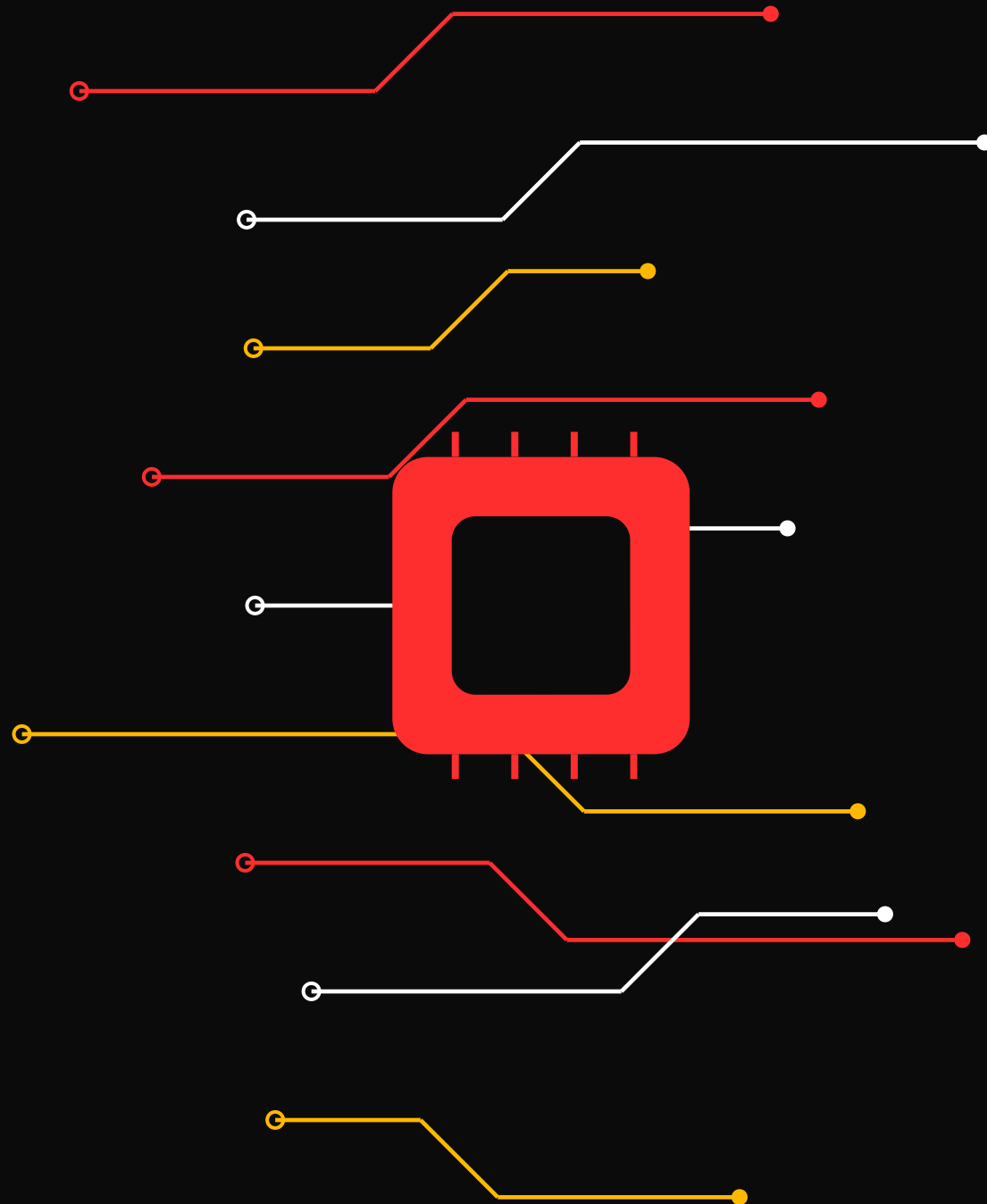
Image 3

Reports

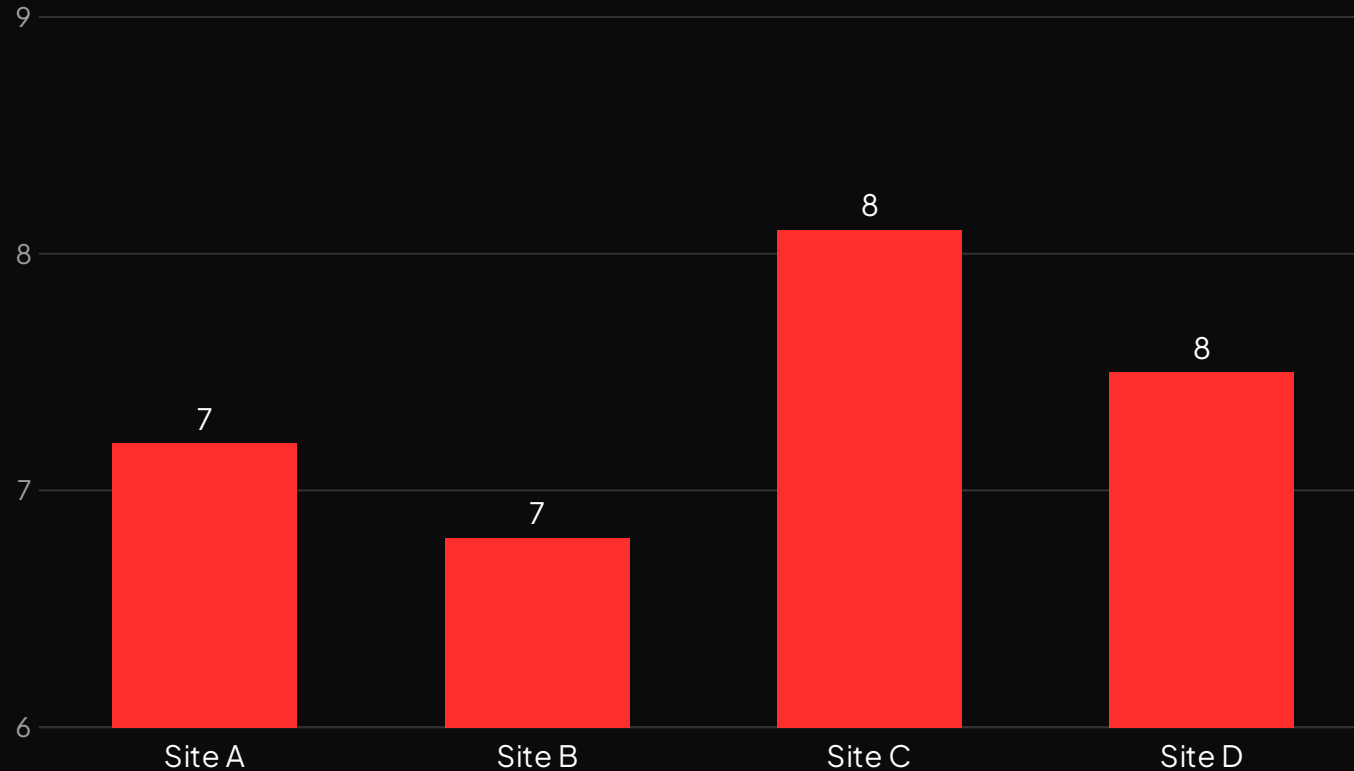
Exportable summaries

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



Future scope



Mobile app

Native apps for Android
and iOS



AI insights

Predictions from historical
data



Scale-up

Deploy across more sites

Thank you

Questions and suggestions are welcome.