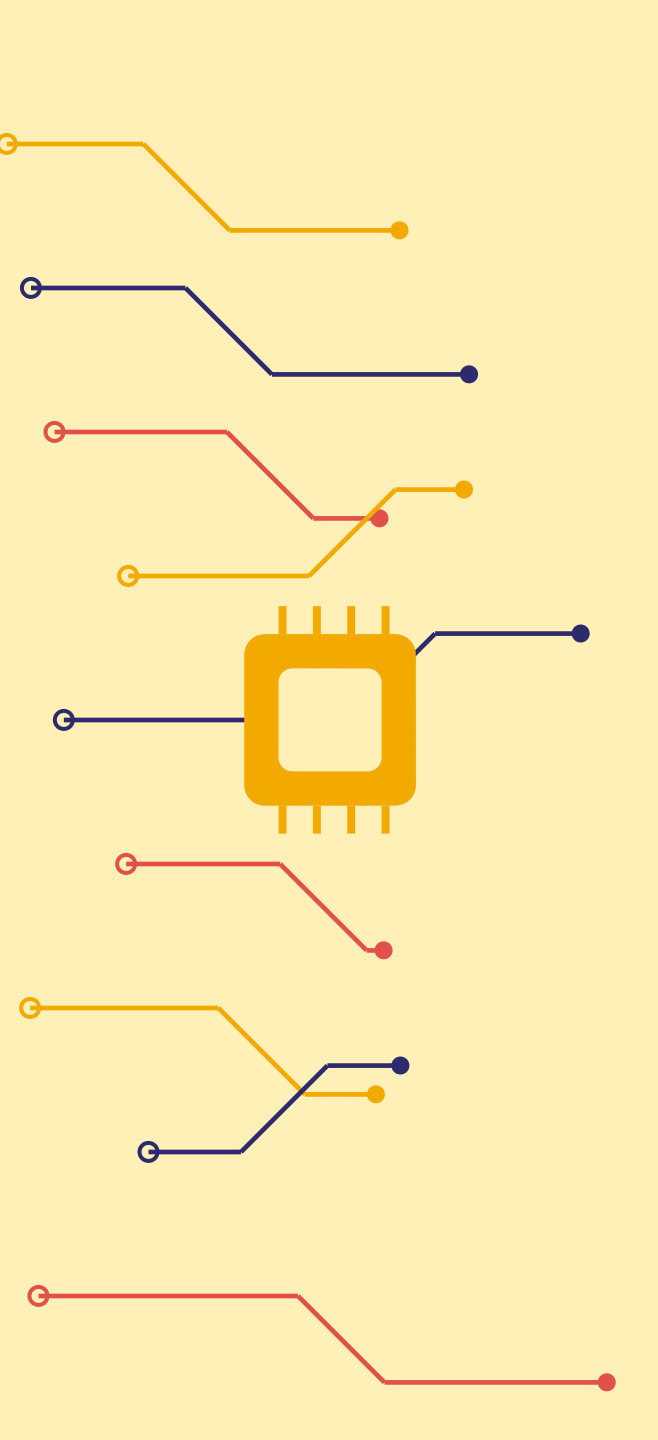




FINAL YEAR PROJECT · B.TECH ELECTRONICS & COMMUNICATION

Smart Parking Management System

Find a free parking slot in seconds

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DEPARTMENT
**Electronics & Communication,
2025-26**

02 | Agenda

01 Introduction

02 Literature & Gap

03 Proposed System

04 Implementation

05 Results

06 Conclusion



Image

01

INTRODUCTION



**Parking slot management is
still handled manually in
most places — slow, error-
prone and hard to track.**

Why this project matters

05 | Introduction

- Parking slot management matters to drivers and mall operators every day
- Current methods are manual, slow and hard to scale
- Affordable technology now makes automation practical
- This project builds smart parking management system as a working prototype

CONTEXT

Most drivers and mall operators we surveyed still rely on paper or spreadsheets for parking slot management.

06 | Objectives

- Automate the core steps of parking slot management
- Give drivers and mall operators a simple, mobile-friendly interface
- Store data securely and generate reports
- Evaluate the system against the existing process



02

LITERATURE & GAP

08 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.

09 | 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

11 | 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

12 | 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 smart parking management system simple to maintain and extend.

13 | Technology stack



Ultrasonic sensors

Slot occupancy



Raspberry Pi

Edge controller



MQTT

Live updates



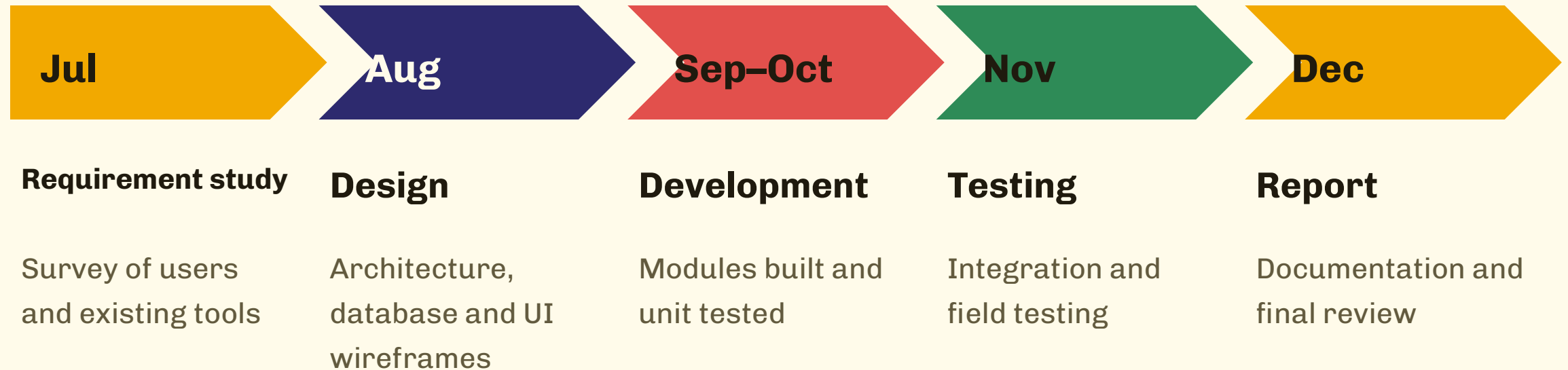
Flutter

Driver app

04

IMPLEMENTATION

15 | Project timeline



16 | Implementation snapshots



Image 1

Main dashboard

Overview of live data



Image 2

Data entry

Simple forms with validation

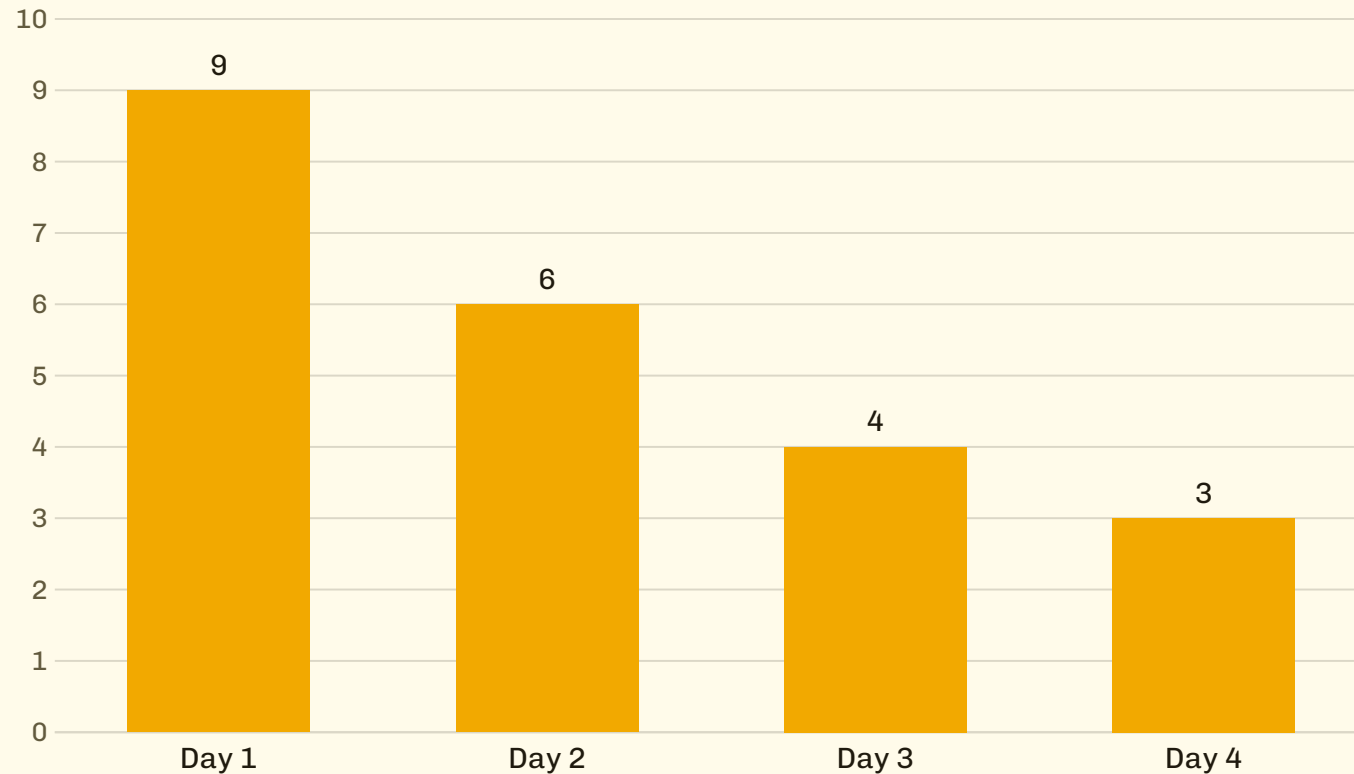


Image 3

Reports

Exportable summaries

17 | Results



Sample data for illustration — replace with your own figures.

3x

faster slot finding

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

18 | Key outcomes

3x

faster slot finding

100%

records digitised

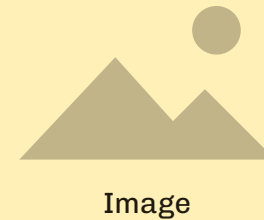
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average response

Figures from our test setup (sample data).

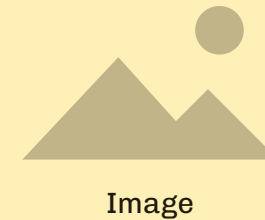
19 | Conclusion

- Smart Parking Management System meets its main objectives
- Automation saves time and reduces errors for drivers and mall operators
- The design is simple to extend and maintain



20 | References

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Thank you

Questions and suggestions are welcome.

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