Namal University Mianwali
Department of Computer Science

Electric Buses Location Tracker App

Project Proposal

Team Members

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Stakeholder

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Table of Contents

Contents

1 Introduction

The increasing focus on transportation by the Government of Punjab has led to the introduction of electric buses in the Mianwali district. These buses provide transportation facilities to the citizens of Mianwali. However, a challenge remains — there is currently no system for monitoring transportation, especially in Mianwali. People lack reliable information about bus schedules and arrival times.

The Electric Bus Tracking System addresses this issue by enabling real-time monitoring of these buses. This system integrates GPS tracking to provide accurate location details and offers a user interface for passengers to view routes, live locations, and arrival times. It benefits both passengers and transportation authorities by improving service reliability, reducing waiting times, and ensuring better control over bus operations.

2 Problem Statement

The electric bus system in Mianwali currently lacks a reliable and real-time information service for passengers. Transport administrators face difficulties managing routes and monitoring live locations of buses, especially in cases of technical or operational issues.

The absence of a tracking system negatively impacts operational decision-making, and passengers cannot track buses in real time. Therefore, a real-time Electric Bus Tracking System is needed to show accurate live locations, estimated arrival times, and schedule updates. Implementing this system will allow passengers to trace live bus movements and improve overall service efficiency.

3 Objectives

The main objective of this project is to design and document a complete software-based solution that enables real-time tracking and management of electric buses in Mianwali.

Objectives of the system:

- Identify system requirements through consultation with stakeholders in Mianwali District.
- Develop a system that uses GPS for real-time bus tracking.
- Design a user-friendly interface for passengers to view live bus locations, estimated arrival times, and routes.
- Enable transport administrators to monitor bus operations and respond promptly to issues.
- Improve public transport reliability, reduce waiting times, and promote the use of electric buses.

4 Stakeholder Identification

Our project, **Electric Buses System**, is based on the new electric "green buses" service introduced in various Punjab cities by the government. The system focuses on improving the public transport experience in Mianwali by helping passengers and management track buses efficiently.

Main stakeholders:

- **Passengers:** Main users of the system to check bus routes, timings, and live updates.
- **Drivers:** Share live locations and report delays or issues in real time.
- **Management Department:** Monitors buses, routes, and reports for better oversight.
- **Government Officials/Admin:** Use system data for planning, making improvements, and maintaining quality.
- **Project Team:** Gather requirements, design prototypes, and prepare complete documentation.

5 Software Development Methodology

This project uses the **Agile Scrum Methodology**, which promotes teamwork, flexibility, and continuous feedback. The methodology divides work into small, manageable phases called *sprints*, allowing iterative development and adaptation to changing requirements.

Main sprints:

- Understanding user and system requirements
- Creating use case diagrams
- Designing the software interface
- Final documentation and prototype creation

Scrum ensures scalability and adaptability, making it possible to incorporate new features or improvements at any stage. It helps ensure that the final design aligns with real-world user needs.

Project Schedule (Agile Scrum Methodology)

Activity / Sprint	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Requirement Gathering												
Requirement Analysis												
System Modeling (Use Case + Diagrams)												
UI/UX Prototyping (Figma)												
Final Documentation												

6 Tools and Technologies

Since the project's main focus is requirement gathering and prototyping, the following tools will be used:

- **Designing Tool:** Figma — for wireframes and interactive prototypes.
- **Documentation Tool:** LaTeX — for report writing and organization.
- **Version Control:** GitHub — to store project materials and files.
- **Diagram Tools:** Draw.io or Lucidchart — to create use case, DFD, and ER diagrams.

7 Agreement Contract

This Agreement is made on this 09 **day of** Nov, **20**25.

Between:

Stakeholder: Asiya Batool

Designation: Lecturer, Namal University Mianwali

Phone/Email: asia.batool@namal.edu.pk

And:

Developer Team: Ali Abbas, Laiba Tajj, Mehroz Ali Khan

Designation: 2nd Year CS Students, Namal University Mianwali

Emails: bscs24f06@namal.edu.pk, bscs24f31@namal.edu.pk, bscs24f34@namal.edu.pk

Terms & Conditions:

1. Stakeholder agrees to provide full, clear requirements, meeting times when needed, and support if issues arise.
2. Developer team agrees to develop the app with full integrity, fulfilling all requirements and ensuring a well-designed final product.
3. Start Date: Nov 09, 2025 End Date: Nov 09, 2026
4. Payment/Compensation Details: Free Of Cost
5. Either party may terminate this agreement within one week of the start date by written notice.
6. Both parties agree to act honestly and fairly throughout this project.

Signatures:

Stakeholder Signature: _____ Date: Nov 09,2025

Stakeholder Printed Name: **Asiya Batool**

Developer Team Signatures: (1) _____ (2) _____ (3) _____ Date: Nov 09, 2025

Developer Team Printed Names: **Ali Abbas, Laiba Tajj, Mehroz Ali Khan**