PROBLEM DEFINITION DOCUMENT

For

Road Repair and Tracking System

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Project Title

Road Repair and Tracking System

Problem Statement

The chief component in the infrastructure of any major city corporation is its roads, and hence maintaining and managing these roads are an extremely important and humungous task. Carrying out this incredibly complex task manually might invariably lead to a number of issues, including book-keeping and scheduling mistakes, mishandling resources, plain old human error and more. So, there is a dire need to automate and in turn optimize this entire process of road repairs and its precise tracking by any large city corporation. This project aims to solve this problem.

Problem Objectives

This project aims to solve the above-mentioned issue by keeping the following objectives in mind:

1. Automate and Optimize Road repair work for a large city corporation
2. Enable branch offices of different suburbs to
    1. add complaints made by residents using phone or written complaints to the system
    2. track area-wise list of complaints and coordinate with supervisors to initiate repair works
3. Enable city officials including the *Mayor*, *Corporation Administrators* and *Area Supervisors* to keep track of
    1. complaints submitted by residents
    2. inspection of submitted complaints
    3. machines, personnel and raw materials required for road repairs
    4. schedules of road repairs
    5. all types of repair work including ongoing, overdue, etc.
    6. Statistics of repair work

Preliminary Ideas

Extensive discussions with several residents and city officials have revealed a few issues that need to be solved and some possible ways to solve them:

- Tracking resident complaints: Branch offices in suburbs need a system to efficiently enter and later retrieve the complaints made by citizens via call or written complaint.
- Examining and reporting on complaints: Area supervisors tasked with visiting different areas and examining complaints need a system to check exact complaint that was lodged and submit their analysis, which can be later tracked and used by the system.
- Tracking personnel and machinery: City corporation administrators need a system to be able to keep a track of all their resources.
- Overview of road repair activities: The Mayor of the city has expressed that in the past during budget meetings or status report meeting it has been difficult to produce an overview of the repair activities going on in the city and the resources/budget required for upcoming works. A system is needed to analyse all the data and produce a concise overview of the city's situation including budget, resources.

Project Scope

This project aims to develop a platform that enables reporting of road issues and city corporations to track and manage its repair activities efficiently. Key features include:

- Issue reporting: System to track and maintain citizen complaints.
- Repair tracking: Monitoring of repair progress
- Database management: Centralized storage of reported issues, repairs, resources.
- Reporting and Analytics: Tools for authorities to assess repair activities and team performances.
- Out of Scope items would include:
    - Integration with any external road network maintenance
    - Advanced machine learning algorithms for predictive maintenance at this stage
- Estimated Cost of Development (excluding hosting costs):
    - Hourly rate**: *Rs. 500/-*** (freelance rate)
    - Total cost**: *Rs. 2,00,000/-*** (approx. 400 hours)

Feasibility Study

The feasibility study of this project will assess the *technical*, *operational* and *financial* viability. Estimated cost:

- Estimated time: ***60 hours***
- Estimated cost: ***Rs. 60,000/-***