Introduction

• Potholes are dangerous, it is one of the main reasons for accidents and vehicular damage.
• Current systems do not have an user friendly reporting system, ability to track the priority of potholes and notifying immediately to concerned authorities.
• The data collected from users is very minimal which leads to difficulty for data analysis.

Goal

• Develop an efficient web application for the public works manager and road crew manager.
• Record all the information submitted by a citizen into a database.
• Generate reports to keep check on the status of potholes, assign work to road crew for repair.
• Recorded data can be used to analyze trends, find root causes of the potholes and will be helpful to extract other vital information to take necessary actions and minimize the number of potholes.

Use case Diagram

Fig 1.1 Use case diagram

Architecture

Fig 1.2- Architecture

Key Features of Application

• Access to the reported pothole records
• Ability for authorized users to create, retrieve, update and insert pothole records
• Application is secure to prevent common attacks like SQL Injection and Cross Site Scripting
• Different levels of user authorizations
• Well defined and easy to use User Interface
• Secure login for the application
• Generation of report of key data
• Triggers email to concerned authorities on arrival of high priority potholes and periodically send updates of pothole information via email.
• Regular backup of database to prevent loss of critical data.
• Important critical real time data is available which can be used for data analysis and mining key information.

Implementation

• Understood the use cases of the application
• Requirement gathering of key fields to be inserted into the database
• Designed the database to minimize number of tables and joins for efficient data retrieval as report generation is a key aspect of my application
• Implemented the XAMP environment as a setup to establish a connection to Android application and the MySQL database.
• Developed the front end of the application using HTML, CSS and Javascript. PHP as a backend programming language and performed all operations on MySQL database using SQL programming.
• MVC pattern.

Results & Conclusion

• User friendly front end of the application for complete access and making changes to all the tables in the MySQL database.

Reference