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An Implementation on Mobile App for Addressing Social Issue to PMC Using React Native

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ABSTRACT: The Pune Municipal Corporation offers a wide range of services to Pune residents, including those related to urban biodiversity and eco-systems, water and waste water management, sanitation, solid waste management, traffic and transportation (PMPL), energy, and climate change. Although occasionally problems arise as a result of delivering services to them, they nonetheless offer this service to every resident of Pune with the appropriate concern and instruction. And someone, somewhere, needs to make the Pune Municipal Corporation aware of these problems so that they can be fixed for the good of the locals.It is difficult for the PMC to keep track of such a huge region because they are responsible for managing a large portion of Pune, or around 243.96 sq. km.It can be challenging to identify little issues at a specific site, which could delay the resolution of a specific problem. All that is left to be done is to imagine what would occur if we created a project that would work with PMC and try to assist them in solving these issues with the aid of Pune residents.It can be challenging to identify little issues at a specific site, which could delay the resolution of a specific problem. All that is left to be done is to imagine what would occur if we created a project that would work with PMC and try to assist them in solving these issues with the aid of Pune residents.

KEWORDS: grievance, react, reporting, system, native addressing, citizen reporting system, significant.

I. INTRODUCTION

More than half of the world's population is currently online, using a variety of channels, the largest of which is social media. Social media is highly significant in daily life since it allows us to contact with one click with everyone in the world, share information, and provide feedback. It also gives us a platform to present our argument to a global audience. In-depth study has been done on the topic of e-services for municipal corporation use. Understanding the usability and value of services offered by a municipal corporation utilizing more advanced technology is the aim. Studies that focus on the usability of e-services for the citizen group that is physically challenged have also been undertaken. The Pune Municipal Corporation is responsible for maintaining the city. The municipal corporation has a number of departments to handle various facets of city maintenance and administration. For the municipal corporation to effectively address the problematic areas, it is critical to be aware of the issues that exist in the city as well as when they arise imagine how it will assist us for resolving the problem that PMC and we have with handling very minor social concerns that have arisen anyplace in Pune. The users can post photos, the location of the issue actually created, and a description to it by raising their issue almost anywhere in Pune, and they can tag the appropriate PMC Officer depending on the type of problem brought up. As a result, our app serves as an interface between the users and the specific officials of the PMC.

Therefore, any user who believes that a problem brought up by a third party is legitimate and ought to be resolved by the Pune Municipal Corporation can like the post and intensify the debate so that PMC will take the problem into consideration and resolve it as quickly as feasible. A green Checkmark can be added to the post by the PMC once the problem has been resolved, letting users know that their problem has been taken care of.

A. *Motivation of the Project*
The Municipal Corporation is the governing body in charge of managing the affairs of the city of Pune is known as the Pune Municipal Corporation (PMC). A PMC's primary responsibilities include, among many other things, resolving any complaints that municipal residents may have. In order to maintain a huge city, the PMC must be informed of any issues, either by monitoring (sensors/cameras) or by enabling the public to report them. Due to a sense of community,

the second choice is frequently chosen therefore, if a citizen has a problem with the services provided by PMC, he or she may file a complaint against it. To file a complaint, a person must visit the local PMC office or PMC care facility, but since life today is so busy, no one has time to travel there, wait in line, and file a complaint. Therefore, a mechanism like a mobile application that can receive complaints from residents 24 hours a day, seven days a week would be beneficial from both the citizens and the PMC in order to tackle this problem.

B. *Brief description*
The Pune Municipal Co-operation (PMC) is making significant progress in maintaining and controlling the social problems Pune City is facing, however no single authority or organization is able to manage the 729km of territory. Pune is 729 km in length, We created an app to help Pune Municipal Co-operation (PMC) manage social issues in specific areas of Pune. Users can take photos of problems and post them online, tagging the relevant PMC office. The officer will respond with a completed message on the post, keeping people updated. This helps the PMC maintain and control social problems in manageable areas. Social media is an excellent way to reach people in different locations and promote new understanding. The app addresses issues such as mobility, public transportation, garbage, healthcare, water and solid waste management, traffic, and climate change.

C. *Benefits and risks*
Benefits of reporting social issues to Pune Municipal Corporation with our smartphone app:
- Easy accessibility: Residents can easily report social issues to the local government via a smartphone app, wherever they are. On their smartphones, which they typically carry with them, citizens can use the app.
- Real-time Reporting: Using the smartphone app, users can immediately report social issues. This means that local government agencies can immediately learn about a social issue and take the required steps to address it.
- Better Tracking: Municipal officials can keep track of reported social issues with the use of the mobile app. This enables the government to set priorities and address the most pressing problems first.
- Effective Resolution: Municipal authorities can effectively address social concerns with the aid of a mobile app. The authorities can access the reported social issues, examine them, and then take the necessary action to address them.

II. PROBLEM STATEMENT

Pune is expanding, and this expansion is causing certain changes to the immediate environment. Many problems that Pune municipal corporations (PMC) encounter while providing services to residents have been brought up, including mobility and piss-poor public transport, as well as garbage problems and pretty subpar healthcare facilities, unsatisfactory water waste management, pretty mediocre solid waste management, traffic, and climate change.Pune is growing, and this growth is changing the surrounds and the environment. There have been many concerns raised about the challenges Pune municipal corporations (PMC) face when providing services to residents, including traffic, piss-poor public transport, garbage issues, subpar healthcare facilities, unsatisfactory water waste management, pretty mediocre solid waste management, and climate change. The project's objective is to create a platform that allows Pune people to discuss problems that Pune municipal corporations (PMC) have when providing services to locals. This would aid the PMC in resolving any tiny problems that might develop anywhere in Pune. Both the general public and the PMC employees concerned with the problem must gain from such solutions.

A. *Goals and Objective*
- Our application will provide a platform for Users to report and resolve issues with the PMC's services. The app will work with PMC to better assist Pune residents in resolving their issues
- Users may upload images, a description of the problem they produced, and the exact location of the issue they've caused, essentially anywhere in Pune. Users can also tag the appropriate PMC Officer depending on the nature of the issue.
- As a result, our software serves as a conduit between consumers and the appropriate PMC authorities. Any user may like a post and promote debate if they believe a third- party concern is genuine and should be addressed by the Municipality. It will encourage PMC to investigate the issue and find a quick solution.
- Taking a small step towards cleaning up Pune.

B. *Statement of scope*

In order to increase openness and accountability between the Pune Municipal Corporation (PMC) and its residents, the main goal of this smartphone app is to create a route for citizens to report social issues to the PMC via social media.The app intends to increase PMC's reaction to citizen concerns and facilitate quicker social issue resolution. With features like real-time reporting, monitoring of reported concerns, and simple accessibility to encourage public participation, the app will be created utilising React Native technology. Strong security measures will be included in the app as well to safeguard users' private information and reduce the possibility of fabricated reports.

C. *Software context*

The GUI of the application will be designed using React Native, which allows it to run on cross- platform devices such as Android and iOS. C# will be used to write the business logic and data manipulation to save the users' data, and the Microsoft SQL server will be used as the database product.

C. *Major constrains*

To be completely honest, developing an app with React Native is not an easy task. We will need extensive knowledge of JavaScript and React.js to design the app. To use API in the application, we must first obtain an API key and then integrate it with the GUI. We need the relevant information of the Pune Municipal Co-operation (PMC) officer to use the mention option for a specific official.To create a photo, we must obtain permission from the user device, and uploading the photo to the server necessitates a thorough understanding of cloud computing and database management in such a short period of time. Furthermore, we must be familiar with database security in order to keep user data secure so that the user can access it whenever they need it.

III. PROJECT PURPOSE

The purpose of this project is to create a smartphone app that will allow residents of Pune, India, to report social issues to the Pune Municipal Corporation (PMC) through social media platforms like Facebook, Twitter, and WhatsApp, in an effort to improve communication and accountability between the PMC and its constituents. React Native technology will be used in the app's development, making it simple for users to navigate and use. Using the app, citizens will be able to track the progress of their complaints and report problems in real-time. The software will allow the PMC to analyse and rank reported issues so that it may then decide what steps to take to address each one. To safeguard the personal data of users, the app will also have security safeguards in place. Ultimately, the project aims to empower citizens to participate in the governance process and improve the quality of life in the city of Pune.

IV. PROPOSED SYSTEM

Our smartphone app aims to improve interaction between residents and PMC by allowing them to submit social issues through a user-friendly interface. The app offers real-time reporting and tracking, making it easy for citizens to participate in governance. The PMC can respond quickly and efficiently to complaints, creating a more open and accountable system. The app also includes strong security measures to protect users' privacy and prevent fake reports. This app promotes inclusivity and participation in democracy.

A. *System Architecture*

System architecture describes the general layout and construction of a complex system, which may comprise hardware, software, and a number of other parts that come together to carry out a single function or achieve a single goal. To make sure the system's components, interfaces, and communication protocols function properly, decisions must be made on each of these areas. Throughout the system's lifecycle, the system architecture acts as a guide for creating, implementing, and maintaining the system.

The system depicted in the diagram allows users to post messages using a Graphical User Interface (GUI), which subsequently transmits the messages to a Firebase database for storage. The posts are then transmitted to the appropriate officer who is in charge of that information after being tagged with a particular officer's department.To put it more precisely, the procedure begins with a block of citizens who want to share information or report a problem. A online form or a mobile application can be used as a communication channel for the citizen to generate a post and transmit it to the GUI. The post is then received by the GUI and sent to the Firebase database for archival.A cloud-based database called Firebase offers real-time data synchronisation, archiving, and retrieval.

A post is given a unique identification when it is stored in Firebase, making it possible to quickly retrieve it and tag it with further information.The user then tags the post with certain officers whose department is in charge of dealing with that kind of post. This categorization and organisation of the posts through tagging makes it simple for the appropriate officer to find and respond to them.The appropriate officer is notified that a new post has been allocated to them when the post is tagged and submitted to them. The officer can then use the GUI to access the post and take the appropriate action, such as fixing the problem. Overall, this system offers an effective means for people to report problems, and it also allows cops to receive information quickly and systematically.
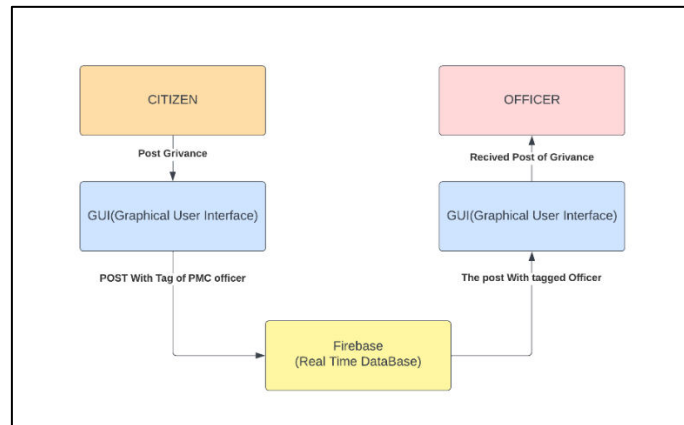
Fig 1: Architecture of System

B. Design and implementation

Next, the design and implementation will be shown using a use Activity Diagram to show the business process of the application and using a class diagram for the database model diagram.
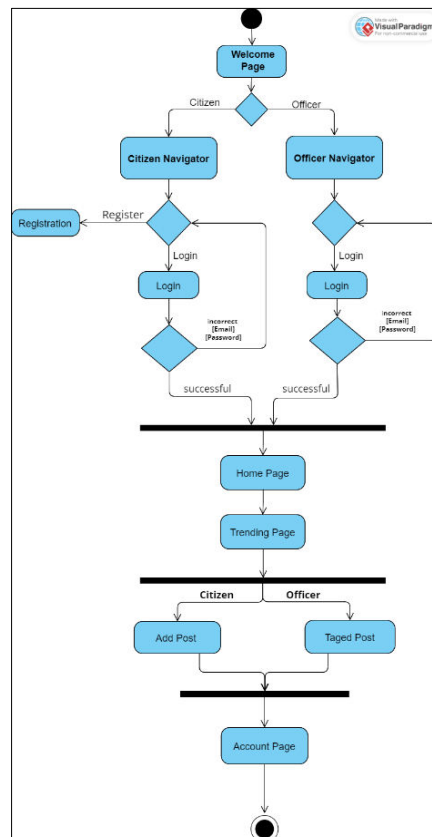
Fig 2: Activity Diagram

This activity as shown in Figure 2 will show the features of city applications with activities such as:

1. Login
The login module is vital to our React Native app for addressing social issues to PMC. It requires user authentication, acts as a gateway to app features, and ensures data security for authorized users.2. Add Post

2. Tag Officer
Tagging the Officer by his Department is a powerful feature that is included in a Mobile App to help citizens address social issues and report problems to their city's local authorities. This feature allows citizens to submit a report or post a problem related tag it with the relevant department or officer who is responsible for addressing that particular issue. By doing so, the Mobile App can help streamline the process of reporting and addressing social issues, enabling citizens to play an active role in making their communities safer, cleaner, and more liveable.

3. Logout
Mobile App for Addressing Social Issues is an innovative application designed to address social issues in a more effective and efficient way. The app provides citizens with a platform to report issues and share information with the relevant authorities. However, to ensure the privacy and security of the user's information, it is essential to log out of the app once the user is done with their session.

V. RESULT OF THE PROPOSED SYSTEM

The discussed app is likely a platform designed for Pune residents and law enforcement personnel to communicate more easily. It features separate modules for citizens (Add Post) and officers (TagScreen). Users must register and provide basic information, including their name, phone number, and possibly address. Logging in requires a password or biometric authentication. Officers cannot sign up individually due to security concerns, and their departments and personal information are already stored in the database. The app can benefit both citizens and officers by facilitating communication and addressing crucial issues.
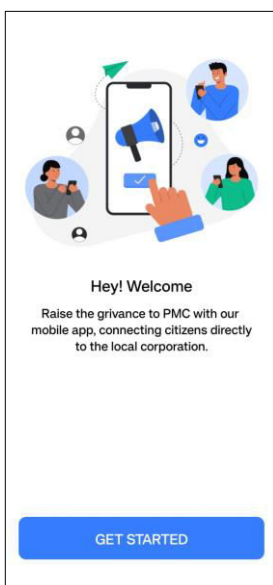

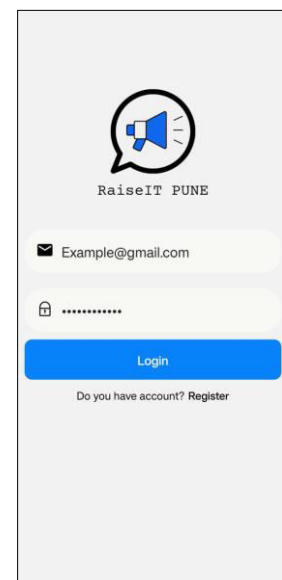Fig 3: Welcome Screen

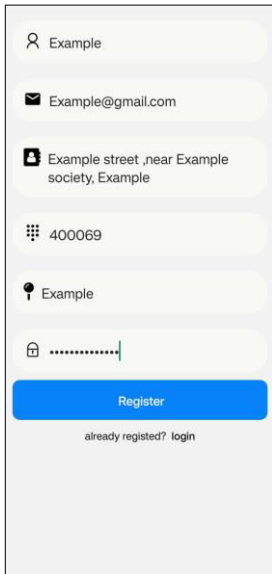Fig 4: Select User Type
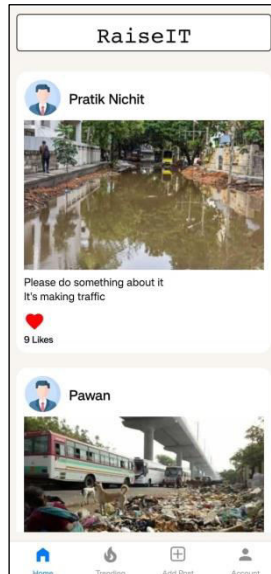

Fig 5: Log-in screen
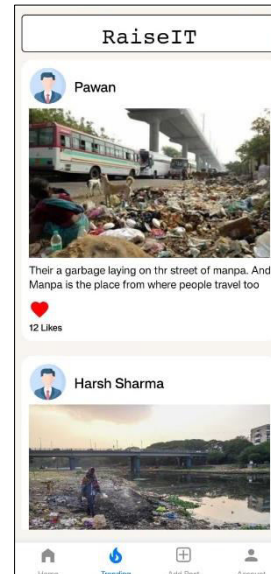
Fig 6: Registration Page

Fig 7: Home Page

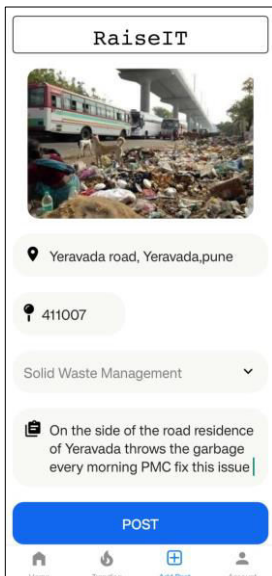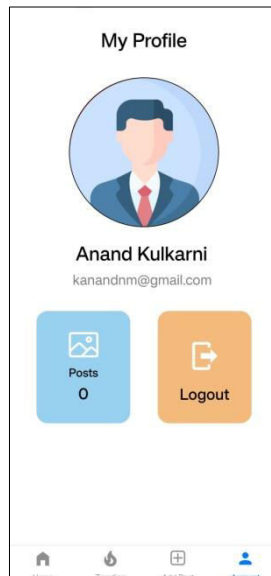Fig 8: Trending issue Page

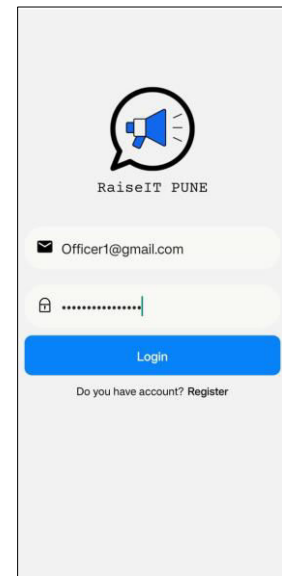Fig 9: Add Post page

Fig 10: Account Page

Fig 11: Log-in for Officer

VI. FUTURE SCOPE

In the near future, the municipal corporation will be able to receive issues and complaints through our mobile app for addressing social issues. By giving residents a forum to discuss their issues with one another and the PMC, this ground-breaking application will enable the municipal corporation to handle them more effectively. We want to expand the features of our application as part of our future plans. One of these features will be navigation, which will enable PMC officers to use our app to find the precise location of the reported issue or problem. They will be able to solve the issue more effectively and quickly as a result.Additionally, we'll be adding a section where locals can express their thoughts and opinions about the city and the PMC. By giving citizens a platform to express their opinions and concerns, this will aid in promoting transparency and accountability. Our ultimate objective is to turn our application into a resource for Pune residents to solve problems, with the hope of eventually expanding it to other cities. By doing this, we hope to

improve the citizens' quality of life and foster a better, more responsive government by opening up a more effective and transparent line of communication between the public and the municipal corporation.

VII. CONCLUSION

In conclusion, our suggestion for a continuously available app for Pune residents is a step towards creating a municipal administration that is more responsive and transparent. The app's dependability, security, and scalability will be ensured by the use of the Microsoft Azure hosting platform, Microsoft SQL Server for the database, and React JS for front-end development. We discovered through our research that a social issues mobile app has the potential to significantly raise the level of openness and trust between the municipal corporation and its residents. Having an effective system for submitting complaints and addressing social issues is essential given the rising use of technology and social media.A more open and transparent platform for addressing social issues will be provided by the use of React Native, which will allow users to voice their complaints to both the company and the entire audience. Citizens will also be able to use the app to see if there are any other complaints in Pune or in their neighbourhood, and they can raise issues by pressing a heat or like button to alert the appropriate authorities.Our app will promote a more responsive government and enhance the lives of citizens by enabling local municipal officials to receive notifications of complaints that arise in the city and react quickly to issues. Overall, our app will give citizens a dependable and effective way to voice their complaints and issues, enabling the municipal corporation to quickly address them and fostering better communication between the government and the people it serves.

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