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Design and Implementation of Municipal Services for Human Welfare By Using Smart Phones

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ABSTRACT

In day to day life municipal services are provided by visiting municipal offices physically or through visiting their web sites. Various facilities such as e-banking, e-commerce, -e-booking etc. are provided by using mobile application. Use of mobile applications for distinct purpose is growing rapidly. People prefer to use mobile applications to carry out various daily activities. Hence there is a need to develop a mobile application which will help to provide municipal corporation services. The previous system used to serve citizens was based on website which was not so convenient. In this paper we have developed a new system i.e. Mobile Applications which is more convenient and efficient than the previous system. This paper presents new and efficient method to provide various municipal services through mobile application that are water ,drainage ,cleanliness ,street lightening which turns to be efficient in terms of time, cost and paper work.

Keywords : Smart City, UML Modeling Techniques, Human Welfare, Smart Phone, HCI Key Points

I. INTRODUCTION

Today's life different municipal services are provided in corporation offices. Every person visits the corporation offices every time for the representation of Municipal service problem. but it is not a feasible process. Online process is also provided for some municipal corporation i.e. websites. But these services are not possible through these web sites, if that web services are not working properly. Now a days most of the people are using smart phones .These municipal services are identified through Smartphone .This application can be accessed municipal services through smart phones.Users can acess this application at any time or any where through this Smart phones. So that there is a need to design new application for performing municipal services by using Smartphone. Making a city “smart” is emerging as a strategy to mitigate the problems generated by the urban population growth and rapid urbanization[1].Yet little academic research has sparingly discussed the phenomenon.To close the gap in the literature about smart cities and in response to the increasing use of the concept.In section 2 related work is presented. Proposed system for Municipal services of Human welfare by using Smart phones is presented in section 3.Applying UML modeling techniques of municipal services for Human welfare in section 4.working of the present system in section5.Implemtation of the present system is in section 5 and conclusions are in section 6.

II. RELATED WORK

Many scientists have been worked on, a smart city .It denotes an instrumented, interconnected and intelligent city. Smart computing provides the generation of integrated hardware, software and network technologies. They suggest a smart city framework consisting of six main components smart economy, smart people, smart governance, smart mobility, smart environment, and smart living[2].

Most researchers in human computer interaction take interest in developing incipient hardware contrivances, prototyping incipient software system and exploring incipient paradigm for interaction. Design in human computer interaction aim to engender utilizer interfaces which can be operated within facileness and efficiency[3].

III. PROPOSED SYSTEM FOR MUNICIPAL SERVICES OF HUMAN WELFARE BY USING SMART PHONES

This system is working on Common man interaction with Computational device by using the benefits of interaction with various Municipal corporation. This application will be truly based on HCI Key points, i.e. Userfriendliness, Color Combinations, and Ease of Language[4]. It gives various functionalities as one touched operation for providing various facilities [5]. The Records generated will be logged in web server on the admin side. Providing TID for each operation and services available in Android based Application. Also Corporation can provide various notifications to all users regarding any required broadcast information during the time of epidemics and other various emergencies. User can also access to the municipal Services through one touch like Reporting to Fire nearest Fire station in the Corporation Boundaries. This Application represents customize notification according to the user given location filtered by the server admin[6]. It will also inform user about the current corporation committee and available media and information about the historical and geographical context as an extended service.

This application will be doing the following services

Services:

These messages will be transferred to the admin.

The admin will views all the notifications/messages received by the user from different areas and different problems.

The admin will sends the service manager to the areas which are facing severe problems.

The service manager will tries to resolve the problem and gets update to the admin and the admin is going to send the feedback to the user that the problem has been resolved.

If still the user is not satisfied he/she can complaint to the higher authorities that the problem has not been solved properly.

This process continues for even other services like cleanliness, drainage and street lightening.

And the other service which is added is tree plantation .

To keep your city and surroundings clean.
Plant the trees.

IV. APPLYING UML MODELING TECHNIQUES OF MUNICIPAL SERVICES FOR HUMAN WELFARE

Here UML modeling techniques are used for representing the municipal services .It provides flexibility and easy to understand the system. It gives Human welfare system with different diagrams such as Class diagram,Sequence diagram,Usecase diagram.

4.1 Class diagram: Class diagram consists of user, administrator, Service manager classes. Its attributes are Name, phone no, Address. Its operations are enter details, choose the service, submit problem, verify the problem.

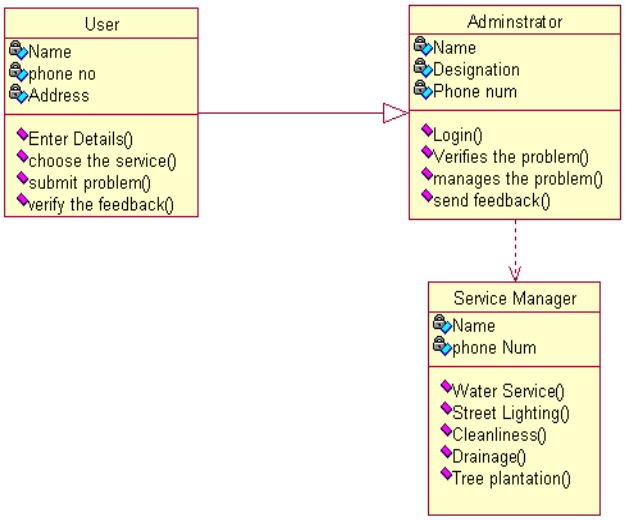

Figure ure 1. Class diagram

4.2 Sequence diagram: It is one type of interaction diagram. It consists of number of sequences. Here objects are user,application,admin.Sequence of events are open application,Enter details and register,login,Display properties, select problem, Display option as text,call,image and selects anyone option.

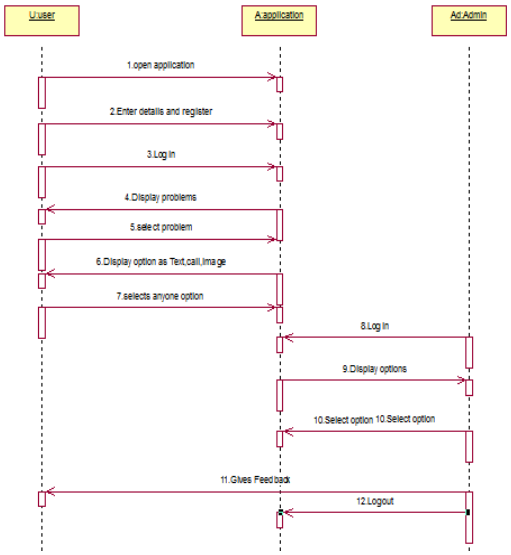

Figure ure 2. Sequence diagram

4.3 Use case diagram: Use case diagram shows the use cases and provides behavior of the system

4.3.1 User operations: Use cases are open application, enter details, select problem, Upload pictures, submit problem. These use cases are performed by user.

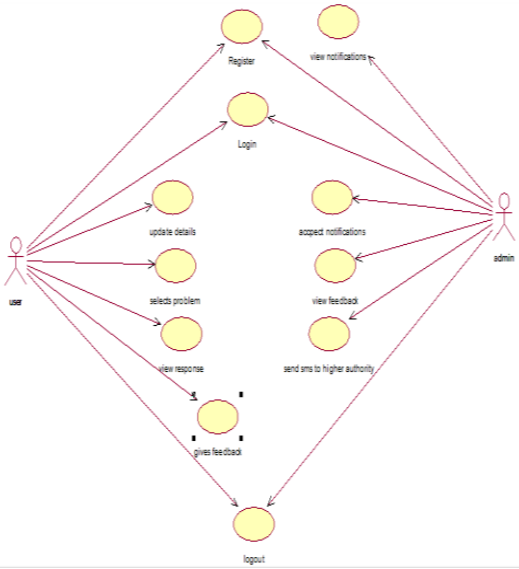

Figure ure 3. Use case diagram -2

V. WORKING OF THE PRESENT SYSTEM

Current system reassembles to personally by visiting the corporation office or by visiting their websites. This application provides better and fast result than current system.It provides various services such as Notifications, Active Tenders, Certificates & Online Forms, Complaint & Feedback, Taxes & Bills, Emergency Toolkit, Job Opportunity, and Elected Wing.

Some advantages are listed below:

a) User Friendly Interface.

b) User friendly with transaction id generation on registration of complaint and various other features.

c) Ease of accessing Municipal Corporation Services by using the Application developed [7]

MODULES:

- **User**
- **Server Admin**

User:

It gives various functionalities as one touched operation for providing various facilities. User can also

access to the municipal Services through one touch like Reporting to Fire nearest Fire station in the Corporation Boundaries. Fire Station will be reported the location of the user through Global Positioning System. Other services like Reporting Potholes, Complaints about specific departments, etc.

Server Admin:

User details are stored in this server. Providing TID for each operation and services available. Also Corporation can provide various notifications to all users regarding any required broadcast information during the time of epidemics and other various emergencies[8]. Fire Station will be reported the location of the user through Global Positioning System. Other services like Reporting Potholes, Complaints about specific departments, etc[9]. This Application represents customize notification according to the user given location filtered by the server admin. It will also inform user about the current corporation committee and available media and information about the historical and geographical context as an extended service.

6.Implementation of Municipal services of Human welfare system

Implementation of Municipal services of human welfare systems is performed by using Android[10] [11].The results of this system is shown below.

Figure 4. Municipal services of Human welfare system

The above screenshot provides Municipal services of Human welfare system. It consists of User login and Admin login.

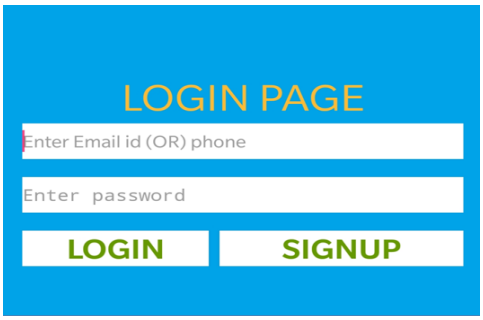

Figure 5. Login page

The above screenshot provides Login page which consists of Login and Signup details.

Figure 6. Sign up page

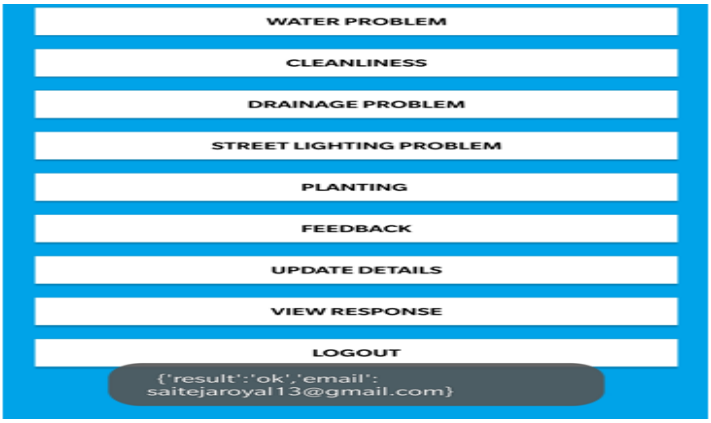

Figure 7. Different Municipal services problems

The above screenshot provides different Municipal services problems such as Water problem, Cleanliness, Drainage problem, Street lightining problem, planting, feedback, Update details, view response and logout details.

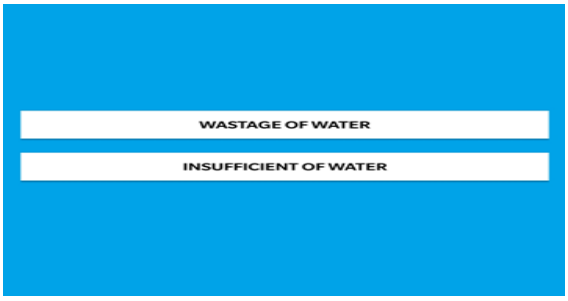

Figure 8. Water wastage problem

The above screenshot provides Water wastage problem which consists of wastage of water, insufficient of water.

Figure 9. Different level of Municipal service problems

The above screenshot provides different level of Municipal service problems. These are High, Medium, Low levels.

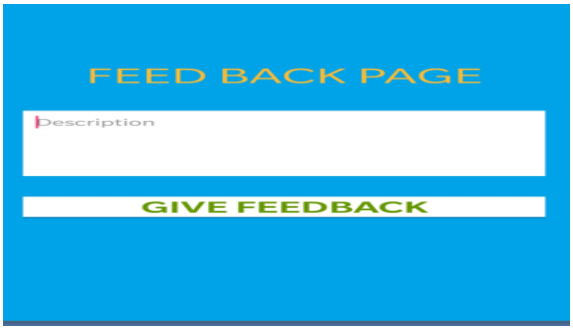

Figure 10. Feed back page

The above screenshot provides feedback form which consists of feedback on problem solution.

Figure 11. Forgot Password

This screenshot provides forgot password details .

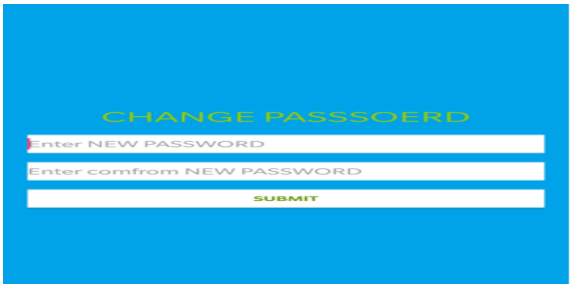

Figure 12. Change password

This screenshot provides Change password details which consists of enter new password, enter confirm new password details.

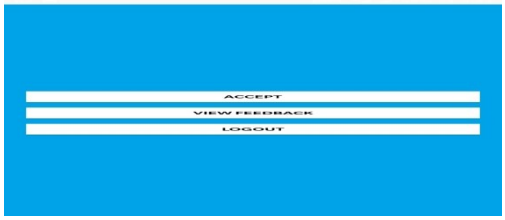

Figure 13. Feedback details

The above screen shots provides feedback details.

VI. CONCLUSION

This paper results into advantageous and beneficial context to the current system of Municipal Corporation. This system has been developed with much care that it is free of errors and at the same time it is efficient and saves time. One of the important things is that the application is robust in terms of data. Also provision is provided for future developments in the application. The entire working of the application is secured.

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