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An android based application for Libyan: E-governance G2C services

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Abstract

In our country we have government bodies (Municipal Corporation) which are responsible for maintaining and running cities. It's all their responsibilities to address the complaint of citizens. For this municipal Corporation has two ways, in first cameras or other surveillance devices have to be installed and second way is that citizens could report their problem to the municipal corporation. The second way is mostly used because it is cheaper as compared to first one. But it takes paper work and time too because the citizens has to visit the ward office and report problem faced by them which can be solved by municipal corporation or as due to the emergence of internet and its various capabilities, there has been rise in the number of complaint sites which provides citizens a platform to lodge a complaint online. As mobile application is mostly used by people, this app will help people to lodge a complaint through it and can attach a picture of things which are causing problem.

Keywords: Cloud computing, web technology, android application, civic issues

Introduction

In each country the water, roads and safety is a big issue. In this paper we are attempting to address this issue and we are trying to build a system which will provide an efficient way for people to register their complaints related to the public infrastructure. This application will help the people to register their complaints regarding the malfunctioning of public property like electricity distribution system, road, transport services like buses and railways, water distribution system. With the help of this system the Government Organization can work more efficiently with less working man power. This help will reduce the time taken for registering the complaints and will help to redirect it to the concern staff. As the entire process of registering the complaint is digital it will be easy to make the audit of the concern department, whether they are working properly or not.

In this paper we have explained the working of the Android application that we are going to build. In this Android application the user will also have an option not only to register the complaint but also track the status of the complaint registered by him. The person can check whether his complaint has been resolved or not. This entire Android application and related subsystem are designed in such a way that the system is capable of identifying the spam in registered complaint and also assign the priority to a set of complaints which have same type of data.

System Architecture

Following diagram show the system architecture of the give Android application. The entire system is divided into total eight different modules. All these modules have their own independent functionality-

Existing Work

Jayprakash Ray *et al.* (2018) ^[7] reported that in modern times, it is becoming difficult for the public to communicate with government organizations to register their complaints about facilities like Water resource problem, sanitation problem, health security problem, food security problem, pothole problems etc. Tejaswita Badhe *et al.* (2017) ^[5] reported that Complaint registrations for government bodies that is EB, PWD, etc. are offline, which are on SMS based system. Even reporting some of the difficulties to Government departments

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have ended up in the manual letter writing at specific timing. But a mechanism to accept complaints from citizens is not 24×7 . Bruno Moreira *et al.* (2017) [6] reported that one of the main issues to be handled in today's cities is related to public safety, which can be improved by implementing the smart city concept. Devika Radhakrishnan *et al.* (2017) [2] reported that In our country we have government bodies (Municipal Corporation) which are responsible for maintaining and running cities. Preeti Bansal *et al.* (2016) [3] reported that to transform a city into a smart city it is important to focus on civic issues faced by the inhabitants.

Proposed System

According to the proposed system it saves time of people by directly launching complaint with the help of proposed system. They need not go to the government office for launching the complaints. People can get their problems/issues solved by directly posting it to the proposed system. People can post their suggestions. The proposed system contains the following facilities over the present system:

1. People can launch their complaints from anywhere with the help of mobiles.
2. People can capture image or upload videos.
3. GPS facility will be provided so that users location can be tracked easily.
4. Simple and easy complaint launching page so that even a common layman can also use the system easily.

Methodology

This application provides a way for people who are facing problems due to civic issues like garbage dump, sewage leak, potholes etc. to register a complaint using images which are automatically geotagged. The pertaining government agency can inform the public (through an image or message) of the rectified issue. This application enables a transparent medium through which the users can register complaint, view existing complaints and confirm the rectification of the issue. The user can login to this application which enables him to capture images and also specify a landmark. The image, geotagged location and date and time of registered complaint is immediately made available to the nearest civic agency. People facing the same problems can vouch for the existing complaint by retagging which brings the awareness of the number of people who are being affected by the issue.

Module Description

User Registration

This module will provide a form to the new user for creating an account. This module will be used to gather all necessary personal information of the user. Before registering the complaint user will have to provide his personal details like Name, Address, Contact Number, etc. This will be used for authenticating the user and the complaint registered by him. After collecting all the necessary information from the user a unique user ID will be assigned to that user.

Complaint Registration Module

This module will provide a form to the user for registering their complaint. It will be mandatory for the user to fill all the fields provided in the form. This form will contain field regarding the complaint categories like complaint about road maintenance, electricity maintenance, water

distribution system, garbage collection. The form a button to upload the image related to the complaint site location. It will also contain a description section where user can provide extra information about the complaint. At the end of the form there will be button which will be used to detect the location of the user. After filling all these details the user has to click the submit button to register his complaint.

Image Upload Modul

This module will be used to upload the image related to complaint site. User can upload the image by capturing it from camera of the mobile phone or can upload it from gallery.

Database Module

Database will be used for storing the information received from all other modules. The database will contain different tables which will store all the information regarding the users, complaint data. It will automatically synchronize all devices as soon as some status updating is done for a complaint

Administration Module

Administration module is used for monitor the entire system. It will take the information from the Database and will feed it to the complaint processing module. Administration module will monitor the entire process of complaint registration like, how many complaints are registered, how many notification has been sent, how many complaints are resolved.

Notification Module

Task of the Notification module is to take the information from the Administration module and then forward it to concern staff. The notification to the staff will contain the information like the location of the complaint, type of work they have to perform, and description about the complaint given by the user. It also notify updates of complaints to users.

Result

To facilitate the complaint procedure, we are going to implement an online web application that lets citizens report problems with infrastructure in their city to relevant authority. So whenever people come across any defects in city's infrastructure, transportation, environment cleanliness or any daily life disturbances, they can share, discuss and get resolved the problems by concerned authority by means of this online web portal and Mobile Application.

Discussion

The following persons will interact with the system-

i. User

The user will primarily use the GUI for registering a new complaint by providing the necessary data.

ii. Officials

These are the actual people working for the app. When a complaint is registered, it will be notified to the officials of respective department.

iii. App

The application system has two major components; one is the server application which will run on the web server and the client application which will run as a web application or an android application.

iv. Admin

The task of the admin is to deal with the server side application and handle database related operations and managements, update entries, maintain users' accounts, etc.

Conclusion

Right now the target audience of the application is the people of my country Libya. The app requires the cooperation of the civic agencies so the complaints are addressed regularly or perhaps bring to notice of the people the cause of the issue and why it cannot be rectified in the near time. This application would not only help the people to easily register complaints and support existing complaints but also help bring awareness to the civic agencies and prepare a plan for rectifying them.

Hence we conclude this dissertation by providing an immensely useful platform, encompasses new tools and technology, for the betterment of society with an ease of access towards problem reporting and quicker result than anticipation. With the onset of new technologies and innovations, human patience has shortened. Quick on-point result is expected with zero presence of human error. This App does quite the same thing providing several advantages over conventional manual complaint registration process with a greater efficiency, transparency and convenience.

Future Scope

The government agency is provided with a list of registered complaints along with the type of the problem, location and date and time of complaint to help them schedule their course of actions. Once the issue has been rectified the pertaining government agency can inform the public (through an image or message) of the rectified issue. When the user confirms this rectification the complaint should be closed. If the user fails to confirm the rectification the complaint would get expired after a particular duration. We also would locate the issue using a map for the civic agencies to navigate to the exact location.

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