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AUTOMATED FEEDBACK SYSTEM FOR NON-FUNCTIONAL STREETLIGHT

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ABSTRACT

Street light plays a very important role when it comes to road safety and security. Road lighting improves safety for drivers, passengers, and pedestrians on rural roads, where road conditions are sometimes not up to standard. Streetlights are installed in many cities and regional highways in Central India. However, in many cases, these lights remain inactive due to the latest information about the exact location and the unavailability of adequate service support. The software-based automated response system may allow service engineers to know the exact location of traffic lights that are not working in their area of responsibility.

Keywords: Non- Functional Street Light, Safety, Exact Location.

I. INTRODUCTION

As good street lighting conditions are required to improve the safety and security of people, especially at night in rural areas because the road conditions are not always good in all places which can cause severe accidents and many more problems. As a result, in the absence of adequate light, some of these areas are unsafe for people at night, especially adults, women, and children. It is not like the authorities don't want to resolve the issue but they don't have the proper information, the location of the non-functional street light and it will be a very difficult task to examine all the street lights manually So an Automated feedback system is required to solve this issue in which the people can report about the non-functional streetlight so as to resolve the problem.

II. PROBLEM FORMULATION

Good Street lighting systems in rural areas improve road safety, personal security and raise the standard of living. Street lighting also improves safety for drivers, riders, and pedestrians on rural roads, where the road conditions are sometimes not of the desired standards causing many road accidents. As per economic-times there were 3,74,397 accidental deaths in 2020 among which 59.6 percent, accounting for 2,11,351 cases, reported in rural areas and most of which occurred at night time. Streetlights have been installed in many villages and state highways in Central India. However, many times these lights remain non-functional due to late information about the exact location and unavailability of sufficient service support. Consequently, in the absence of proper lighting, some of these areas become unsafe for people at night especially elders, women, and children. An automated feedback system based on a software may allow the service engineers to know the exact location of non-functional streetlights in their areas of responsibility.

Thus, the system implemented has the following objectives :

Objective 1: The goal of this project is to develop a software system that allows the user/people to report the non-functional street lights by themself which helps in resolving the issue as soon as possible.

Objective 2: The objective is to ensure safety by the means of a software that will directly report to the concerned authority about the issue. Thus the road accidents will be reduced and safety will be improved very efficiently. The people and drivers will feel safe to travel at night. A central database will record all the information about the requests and the issues that got resolved.

III. LITERATURE REVIEW

Vanjire1Seema, Wade Prajakta, Taware Radha, Nandawate Prajakta, Shinde Namrata(2014). "PROVIDING SERVICES in EMERGENCY CASES", International Journal of Advanced Research in Computer and Communication Engineering Vol. 3, Issue 11, November 2014

A number of studies been done on location based services (LBS) due to its wide range of potential Applications. LBS can be used to provide useful information such as tourism guide and road side assistance To users

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according to the current locations of them. It is consisted of mobile device, communication networks ,service provider and data provider. The enormous trend of crimes happening in country shows the need for fireman and police officers to get reports of emergency cases as fast as it could to enable to act effectively The finding of review found that international practice indicate that many jurisdictions using similar KPIs (Key performance indicator) of an 8 minutes (7 minutes and 59 seconds) respond time for the first respondent To attend to a life-threatening incident. Actual response time may vary due to the local road characteristics, Traffic lights, congestion, route networks, weather conditions, and visibility.[1]

Indore Municipal corporation, "Indore 311 app", Issue 2020

The application was launched by Indore Municipal Corporation on 2nd October 2016 to communicate directly with their community leaders in government to resolve issues in their neighborhood. It is based upon 311 Non-emergency numbers in United States and Canada for providing information and tracking city services from intake to resolution. In India various cities have launched 311 mobile applications like NDMC 311, Ahmadabad - 311 for providing access to wide range of information about public services and complaint regarding civic issues. Indore 311 application provides citizens a single platform to access information about various public services – Traffic, i Bus, Helpline, Complaints, information about nearby –Banks, Blood Bank, Bus stand, Community Centre, Colleges, Gym, Hospital, Library, LPG Gas pump, Market, Monuments, Parking places, Petrol pumps, Police Station, Post Offices, Public Toilet, Stadium, Taxi Stand, School, Tourist Places.[2]

IV. METHODOLOGY

This project is to develop a software system that allows the user/person to self-report the inoperative street lamps and helps to solve the problem as soon as possible. This system is primarily based on the request generated by the user to solve a issue. For automatic feedback, the user needs to register on the platform using our app and then file a complaint about the non-functional street light. While registering the complaint, the user is asked for the image of the dysfunctional street lamp and after the image is approved, he/she has to fill in the location details. After the image is verified by the technician, it will be stored in the complaint database. This stored complaint will then be made visible to the relevant authorities or technicians and to the user who has filled out this complaint. After visiting the application, review all the complaints lists and select the complaint that was given to it. With the help of the coordinates, the technician will reach the exact location of the dysfunctional street light. After successful resolution of the complaint, the user will be notified that the complaint has been successfully resolved. This is how we automate the feedback process. And the exact location of the complaint solved the problem.

The application was developed using android studio version 2021.2.1 and JAVA language along with concepts of object oriented programming for the back-end and XML for the front-end development . The minimum SDK required to run this application is API 21: Android 5.0 (Lollipop) and hence this application will run on approximately 98.8% devices. The project was divided into multiple modules to ease the process of application development.

The user can file a complaint using the app in only five simple ways:

Step 1- Login

The first step towards filing a complaint through this app is to login into the app using the login credentials which will redirect the user to the main home page of the application.

Step 2- Upload photo

Whenever the user is filing a complaint on the application he or she has to upload the photo of the non functional streetlight on the application itself.

Step 3- Select location

After uploading the photo the user has to select the location of the non functional streetlight.

Step 4- Write description

Then after performing the above two steps the user has an option to write a description about the issue it can also be left blank.

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Step 5- Submit complaint

And the final step is to click the submit button button to file the complaint.

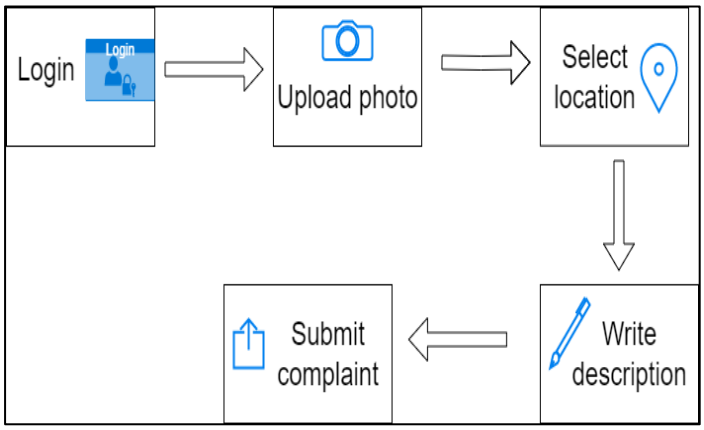


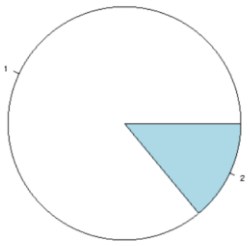
Fig 1. Block diagram

V. RESULT AND DISCUSSIONS

The following questions were asked to some of the initial users and the answers are as follows:

Q What is the use of this app?

Interpretation: Out of 52 respondents 45 persons were not aware about the use of this app.

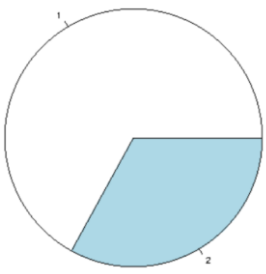


Q Are you comfortable using this app?

Interpretation: Out of 52 respondents 40 persons were comfortable using this kind off applications.

Q How easy is to upload complaint on this app?

Interpretation: Out of 52 respondents 35 persons find it easy to upload the complaint on this application.



After the research undertaken the following result came out:

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- Most of the respondents were not aware of using the application.
- Most of the respondents were comfortable using such apps.
- Most of the respondents find it easy to upload complaint on the app.

VI. CONCLUSION

This Automated feedback system is a reliable platform for both the common people and the government officials as it provide proper data in an organized manner which ensures the smooth functioning. It is an application that helps minimize human error and data redundancy issues. It is a fast and efficient method of communication. The proper working of the street lights will avoid accidents. With the help of this app we can provide ease to the citizens belonging to the rural areas. Citizens mostly avoid to use this kind of online apps just because of their past bad experiences, reviews, and word of mouth.

By giving consistent and effective services this concept with innovation can be successfully grow, merely on the foundation of our research I can suppose the purpose of this app is partially successful.

ACKNOWLEDGEMENT

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VII. REFERENCES

[1] [1] Simnalika Kushwaha, "311 APPLICATION", International Journal of Technology Research and Management, Vol 6 Issue 4 April 2018

[2] https://www.smartcityindore.org/311-app/