

TOILET FEEDBACK SYSTEM

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Abstract - To boost efforts to achieve public sanitation coverage and to focus attention on sanitation, India's Prime Minister launched the Swachh Bharat mission, which involves the construction of over 100 million lavatories in rural India. But commonly, these public washrooms are constructed with decent financing, and their production tends to be highly reasonably priced. Authorities have to spend a large sum of money and manpower in order to maintain the public toilets. However, these efforts become futile because there is no centralized device to monitor the sanitization of these toilets. There is a need to know the user feedback to analyze the cleaning. This paper provides a solution that uses an Android app to get customer feedback about the conditions of the restrooms, which will help maintain them.

Key Words: Toilets, Hygiene, App, Feedback, Review, Sanitation.

1. INTRODUCTION

Toilets remain unhygienic not only due to irresponsible people who often forget to flush the toilets after use but also due to lack of maintenance. In India, a lot of fund is allotted by the central government for constructing public toilets. The central government, under the "SWACH BHARAT MISSION," has built many new toilets. Hence, cleaning of public toilets is as important as cleaning household toilet. This paper proposes a toilet feedback system. It means that, as if for review, we need to inform the authorities about our experience in order to see some good change in its condition, but in government or public toilets, we found that a huge number of people use toilets for their use, but only one percent of them flushed in those toilets. Individuals have this strange belief that touching or tapping the flush button will cause our hands to get unclean or sick. Most people also choose to neglect using the toilet. Due to this mentality, a lot of unclean waste is left in the toilet, and over time, different bacteria are released from these toilets into the neighborhood, causing a variety of ailments. Poor sanitation is the only reason this occurs. The "Toilet Feedback System" project focuses on reviewing the sanitization of the toilets using an android app. This feedback can be given in 2 ways either by logging in the app or by scanning the QR code.

2. METHODOLOGY

The project is based on Android development and QR code scanning using different software, namely Android Studio, Figma, and Firebase Database. These tools and technology can be used to provide a working solution to make sure that the public toilets are maintained properly and create awareness among the people. In the below flowchart, the linking of different pages of the app can be seen. This helped in the design and interlinking of the activities in Figma and Android Studio, respectively.

The following figure shows the flow of working of the system's user interface:

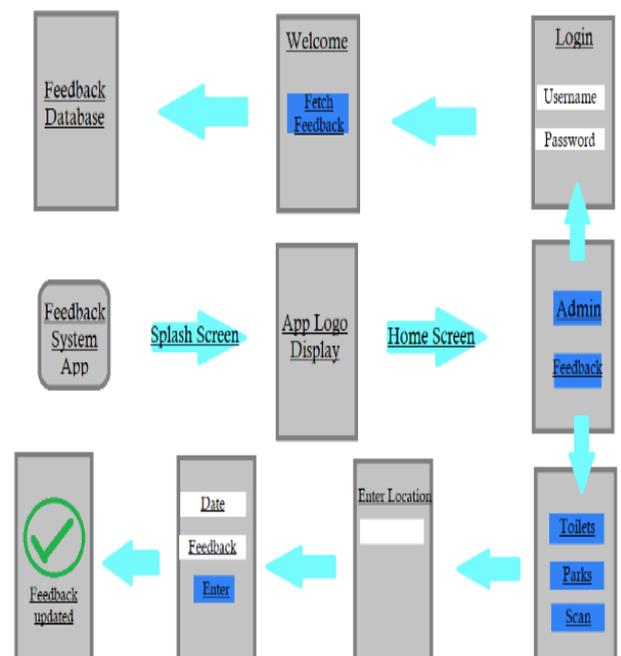


Fig. 1. Flowchart of the application

3. RESULTS AND DISCUSSIONS

A. USER INTERFACE

The following figure depicts the user experience display of the application.



Fig. 2. UI

B. ADMIN PANEL

The images in the following figures depict the admin page, where the admin can login to view people's feedback and complaints.

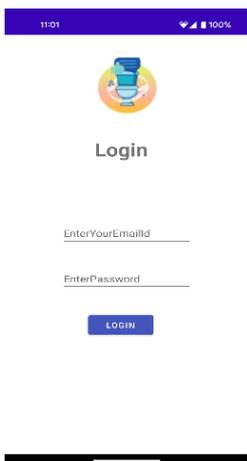


Fig. 3. Login Page

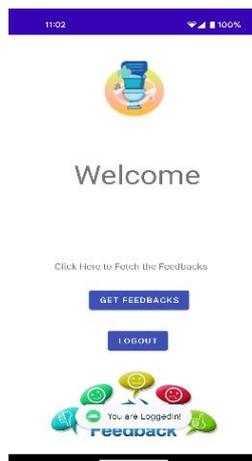


Fig. 4. Fetch Feedbacks

C. USER PANEL

The following shows the available options for the user to give feedback at different places. The user has the autonomy to either scan the available QR code or choose from the options available in different places.



Fig. 5. User Panel

D. DATA FOR REVIEW

The following image shows the feedback and complaints of the various users who have submitted their responses by scanning the QR Code. The administrator has read-only access to this data but is otherwise privileged. The administrator has no rights to delete or update the data.



Fig. 6. Feedbacks

The toilet feedback system app enabled easy storage of feedback in the database and retrieval of feedback for admission review. The app successfully runs and scans the QR code for a particular lavatory.

4. FUTURE SCOPE

There is a good requirement for such systems to be implemented in India since the number of unhygienic toilets is huge. Tier 2 and Tier 3 cities continue to struggle with hygiene. The proposed system can be implemented on a larger scale in cities, including metropolitan regions, the number of people using public toilets in India will grow

rapidly, which is a basic necessity. People can directly register their complaint on the spot and get their concerns taken into consideration by the government itself.

5. CONCLUSION

As discussed above, the problem related to maintaining the hygiene and sanitation of public washrooms has a solution now. The app developed is very convenient to use for the common public, and they can effortlessly contribute to public toilet sanitation and, thus, to Swachh Bharat Abhiyaan by just using the app. With India promoting Swachh Bharat Abhiyaan and targeting to reach total cleanliness, this app would play a crucial role in this mission.

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