

Easy Complaint with Google Cloud Platform

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Abstract: Google App Engine is an integrated cloud-based solution designed to provide Infrastructure as a Service (IaaS), Software as a Service (SaaS), and Platform as a Service (PaaS) system and automate business or organizational processes while meeting implicit requirements such as security, reliability, and automated scalability. Google App Engine lets developers build scalable web and mobile applications and deploy them without having to worry about underlying infrastructure. In mobile cloud computing the apps that run on mobile devices are actually deployed on cloud while mobile computing run native apps. Users subscribe to applications available on the Google Cloud Platform and access remotely stored data from nearest data centers or from most available resource at a given point of time. This ensures high availability to the end users who request the service.

Keywords: Google App Engine, Google, Complaint, Google Cloud Platform

I. INTRODUCTION

The app that is hosted on cloud provides a solution to the department in order to address a particular issue and maintain detailed records. Usually, the concerned departments become aware of an issue in the city very late but this app aims to report activities in the city immediately and the concerned authority can take necessary action. The user reports rash driving, drunk and driving, no helmet driving, and specious vehicle activities to the nearest police station. The app has image processing modules that extract the vehicle number from the number plate and auto fills the details. The concerned authors upon receiving the complaint can take immediate action.

A. Background Studies

Background studies were conducted in various cities and departments. It was found that in major cities people do not report traffic violations due to various reasons such as fear of conflict, lack of time to attend the police station, and lack of knowledge about the proceeding in police station but they do want to report such traffic related violations. In order to overcome such challenges, the designed app provides easy interface to snap photos/video and using the phones location a report/complaint is submitted to the nearest traffic police station. To enable easy implementation and seamless performance Google App Engine service available on Google Cloud Platform can be used.

B. Implementation

An Android Application to ease the registration of the traffic violation complaints through the use of Google cloud infrastructure. This provides the means for storing the complaints in the cloud as well as access them by the cops. The Application has 4 pages. The first page contains the details of all the functionalities of the application. User login would be redirected to the next page supported by Google Login API. This would cut down the time in the registration. The chat bot would facilitate the users with any difficulties [5]. The Application uses SSH key in order to transmit the complaints for more security. The control room and the database handler would be HTTPS protected in order protect from security breach.

The user clicks the pictures of the violators in such a way that the number plate of that vehicle is visible in that picture. The uploaded picture is also tagged with place-id through geo-location [6]. Tagging the place id would let the cops to precisely locate the place where the violation took place and act if more complaints arise from that place-id before a disastrous accident takes place. Place-id would also curtail the job of classifying the different Police branches that comes under that place of jurisdiction.

The approach used to segment the number plate is Connected Component Analysis (CCA). Connected regions imply that all the connected pixels belong to the same object. A pixel is said to be connected to another if they both have the same value and are adjacent to each other. CCA is again applied on the license plate to segment the characters. Furthermore, the model is trained using Support Vector Machine Classifier (SVC) in the Google App Engine (GAE) [8] where the training of the model gets improved dynamically with a greater number of uploads and users [9].

The follow up of the complaints is updated to the user either through the notifications in the App or through SMS. The user would be notified once the action has been taken and the complaint is closed. The user can also raise a ticket if there is no response for the complaints within 24 hours. The user would also have access to view their previous complaints within the App.

C. Application Areas

The designed app can be used in any government body or organization. It can be used to report via textual information, video, or images as proof to the traffic police station regarding any traffic violation. It can also be used by city corporation to get citizens feedback or complaints on city cleanliness or water connection problems or power cuts. The app can be made more reliable with machine learning modules to ease user's interaction with the app. The app has good scope in the future as Google App Engine is fully managed server-less platform and can scale up the computing resources based on internet traffic.

II. CONCLUSION

The app makes is very convenient to the users to report a problem rather than manually being present at the department. The app also gives progress stages of the reported problem and the type of action taken by authorities. This gives a sense of greater contribution to the social cause to the users. The application also encrypts the data that is being sent and maintains the user's privacy by not revealing their personal details to third party. Thus, providing safer environments for the user to report a problem.

III. REFERENCES

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