

Queue Control System using Android

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Abstract - In this days lots of people spend their valuable time standing in queue at many different places, like GOVT offices, banks, college admissions and hospitals. We design queue management system which help to provide fairness as well as comfort to customer, by maintain their position in queue while they are engaged in other activity or not standing in queue. This queue control system is designed with some small interfaces which can be easily accessible with smart phones for a queue control with status notification for user. In this system we provide smartphone App that provide online status to users. And a server which collect the data form all registered places as well as all users. After that the status that is result will be sent to user and result consist token number, required waiting time and it will also notify about waiting time after certain intervals.

Key Words: Average Queue waiting time, Queuing services, Virtual queue, Crowd sourcing, QCS

1. INTRODUCTION

People spend their most expensive time waiting in lines at supermarkets, restaurants, banks, transportation terminals, amusement parks and government offices. Queuing is a pervasive phenomenon occurring at such a places so, long waiting time brings about awful user experience. Before going to standing in a line or not, people want to know about the waiting lines, e.g. the number of people ahead or waiting time. By providing such a queuing information it helps customers knowing better and they will spend time doing something alternative rather than waiting in line, thereby mitigating their anxiety and user experience. At other hand managing queues is important for business so it can help reduce inefficient resources allocation and revenue loss of firms. Therefore, there is a need for better understanding of emerging trends of the queues in order to not only improves user experience but it helps for benefit business.

Wastage of time in a queue is always non-negotiable and in that case, that the present queue management system finds it is importance. The platonic thought of the system begins with a simple question – “How could time be smartly utilized?” This smart queue management system will take out the burden of waiting in a queue until one gets attended.

Besides, we observe that people often carry their phones when they are not at home and people are willing to obtain queue information. This motivates us to use commodity mobile phones to detect queuing and obtain queue information for people, through a mobile application.

In day to day routine life, banking customers have to wait for long hours to accomplish their transaction or either having another work in bank. To reduce this problem, a new queue management system has been introduced and called as Queue controlling System with notification which will issue a queue ticket to a customer it will announce the ticket number when service is available, eliminating the need to stand in line while waiting. In this way, queue management systems help to provide comfort and fairness to customers, by allowing them to maintain their position in the queue while they are seated comfortably or engaged in constructive activity.

“Estimation by using smart phones” [3] Proposed to develop a system which is fully automatic, effective, energy-efficient, and accurate wait-time detection component on Android and iOS platforms. This are the component which uses new domain specific optimizations to achieve better accuracy and performance.

Jia Deng in “Fine-Grained Crowded sourcing for Fine-Grained Recognition system.”[4] Proposed to develop a system introducing a novel crowd sourcing approach to help computers select discriminative features. This type of approach does not require the researcher to specify parts and attributes, it is open-ended and has automatic quality control.

D. Yang in “Crowd sourcing to smart phones system”[5] Proposed to develop system For mobile phone sensing incentive mechanism designed which is a new sensing paradigm that takes advantage to the pervasive smart phones to scale up the data collection and analysis level of what was previously impossible.

2. PROPOSED SYSTEM

Proposed framework consists of different parts as follows:

Part 1:

In the first step registered user tries to login and if the user is not registered then he will be choose New user registration Button which is followed by Log in Button. After coming to the registration page, there are four input fields on registration page. First is for user name, second is for user's

contact number, third is for user's e-mail id, and last is for user password. After registration user will logs into the application using his user name and password. Then the next activity opens that is queuing service activity which contains selection buttons like Contacts, Take Token, Token Status, Shops, and Notification etc. each of this having specific functionalities which is explain ahead.

Part 2:

Then main part comes by opening next application which is created for administrators like shop owners. Through this app shop owner registers himself and logs into application.

After logged in shop owner can open list of users which is in queue. And also able to change the label from "pending" to "completed". This change also saves in the MySql database and user's Token Status page. Following are some of the major sessions or functions of this project.

Take Token Session:

After logged in user sees the list of service providers which enables user to take token, after selecting one of them, let's say a Bank Queue. It generates one unique token number. This unique token number is generated by using Random function.

math.Random() function returns number from 0 to 1. We use (int) math.Random() *90000 to generates random token number "Between" 0 to 90000.

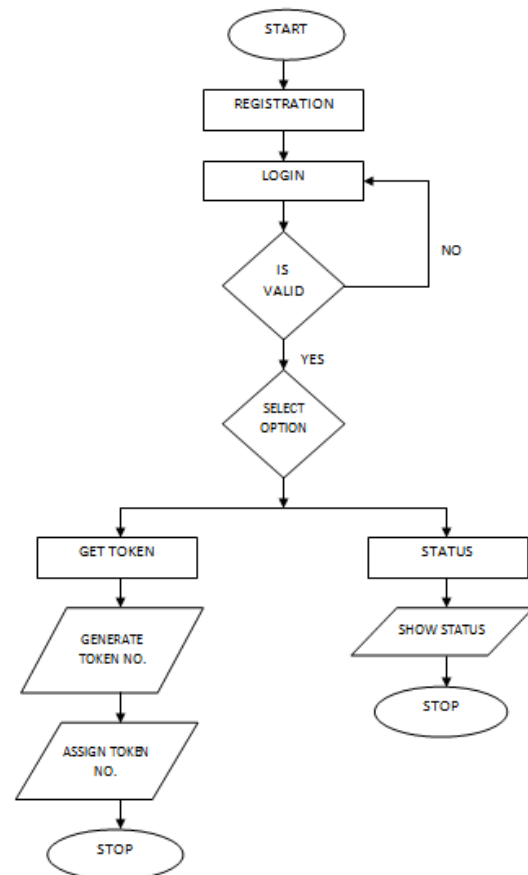
Token Status:

In token status activity user sees the number of tokens which selected by him in Take Token session. Token status activity contains fields like list of tokens with detail information. Token id, name of service provider, address, waiting time, token booked info.

3. ALGORITHM

- Step 1: Start
- Step 2: Registration
- Step 3: Login
- Step 4: Select Option
- Step 5: 1. Get Token
- Step 6: Generate Token ID
- Step 7: Assign Token ID
- Step 8: 2. Status
- Step 9: Show Status

Step 10: Stop



3. RESULT

This smart phone Application is working correctly as per design and functionality. The Application was tested successfully and it's generating token numbers perfectly in sequential order manner. It is calculating average waiting time nearly accurate and the algorithm were working perfect. Hence, the Application is Build-up successfully.

4. CONCLUSION

We described design and overview or algorithm flowchart on Queue Controlling System using android. QCS consist of two main parts: first one is the client Application and second one is back-end database components. In this days a time is more important and we should have to save our time and spend in other activities so, we are develop an Application for Android application which is able to replace the tradition queue System to more convenient management system. This queue controlling Application helps to people who they are suffers from long waiting queue. QCS will help to the people to reduce their waiting time in a queue. Main functionality is that the Application is developed to work online hence the people can check status of their waiting time online through the system. So, people can do their other work instead of standing in queue. The Application is developed on Android platform.

5. FUTURE SCOPE

The development point of view is that improvement into the existing system can be made by adding features like Global Positioning System (GPS) for navigation to a particular place of queue. The prediction for waiting time and service time we improved by selecting efficient, distributed and scheduling algorithms. We can add features like SMS notification or miss-call registration for the users who does not use android phone.

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