# Optimized Service Oriented Request and Compliance Management Application

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*Abstract— The goal of this application is to provide solutions for managing the services in an organization that helps in creating service request processes to monitor and deliver requirements easily. In most organizations the employees/members have access to core services and requestable services. The core services manage the physical IT facilities. The requestable services provides the employees/members to request services such as installing a intercom, changing a password, providing computer or some technical issues. The main objective of this project is to provide solutions for managing the services in an organization. It deals with the automation of processing and analyzing the service requests. Service request an-d compliance management application helps the IT administrators to process the service request easily and effectively.*

*Keywords— Service Request, Management, Efficiency, Notification, Compliance, Analysis, Quality Service, Android Application*

## I. INTRODUCTION

When an organisation is small, it's simple for someone to just walk over to your desk with a requirement and you can set about fulfilling it. But the larger your organisation gets, the service request process gets complicated, thus opting for service request management application to automatically route the requests through an appropriate process for approval and reliable service delivery.

This application manages submission and handling of all requests for service. The main objective of the service request application is to provide a stable process for the users to submit requests for services.
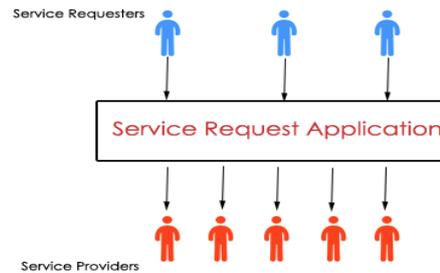
Fig. 1. Service Request Processing

In general service requests are often lower risk which makes sure that the users in an organization have easy access to the services they need to get their tasks done.

## II. IMPLEMENTATION

This concept is implemented as an android application so that it provides ad-hoc users to make request anywhere and at anytime through internet. The implementation is done in such a way that it reduces load on the service desk by assigning and prioritizing the requests made by the users.

The most important feature in this application is notifying the users, administrators as well as the engineers about the assignment of work and status of the submitted request. Notification feature is done with the help of Firebase Cloud Messaging technology that sends push notifications whenever necessary. The application notifies the admin when there is a new request from the user and after admin assigns the work to the corresponding engineer, it notifies the engineer about the assignment of work. Users will be notified about the status of work before and after the work is completed. The database tool used for the application is MySQL 5.5 which is connected to android application using Hypertext Preprocessor (PHP) scripts. Firebase is a real-time database in which data is stored as JSON and it is used for managing notifications.
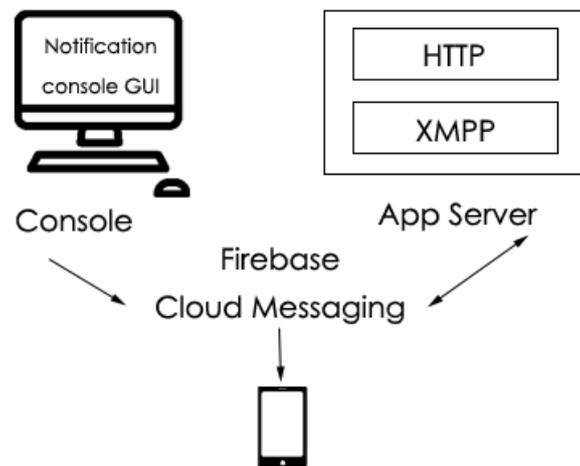


Fig. 2. Firebase Cloud Messaging Architecture

## III. WORKFLOW

Workflow is the start-to-finish process from the service request registering to the service request closing. The flow of this project begins with the user making a new service request, once the user submits the request it notifies admin about the request. Admin views the requests from the users and assigns it to the engineers based on the availability. High priority works are assigned first followed by assignment of low priority works.

To reduce the difficulty in finding the high priority works first the application automatically sorts the high priority works and display it to the admin. After the assignment of work user can view the status of the request submitted. Engineer after completing the assigned works they send the completed status to the respected admin via application.
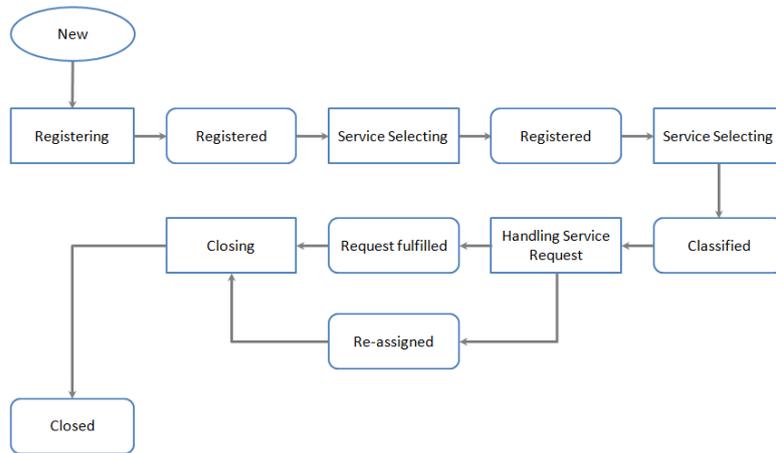
Fig. 3. Basic Flow

Admin reviews the work status and sends user about the completion of work. If admin is not satisfied with the work done he can re-assign the work to the engineer. User can review the work and give feedbacks based on the quality of work completed which is used in calculating the efficiency of the engineers.
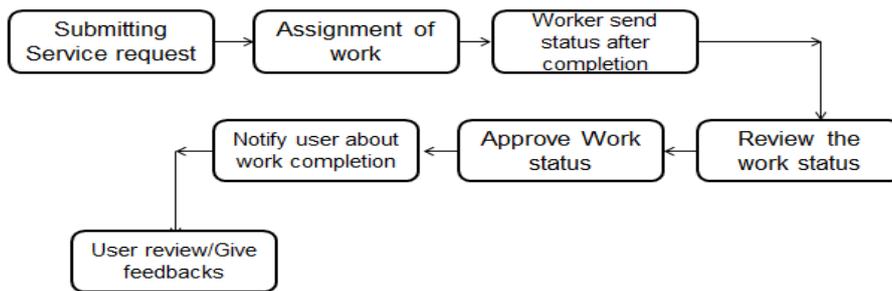
**Workflow Diagram**



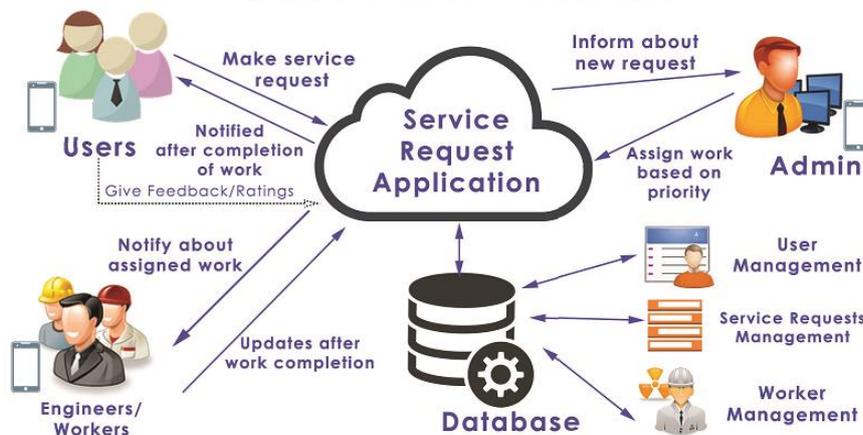Fig. 4. Schematic Workflow Diagram

## IV.ARCHITECTURE



Fig. 5. Architecture Diagram for Service Request

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A. Important Features
- Notifying about the assignment of work, status and completion of work
- Assigning work to the engineers in a effective way
- Analyze the engineer history and feedbacks from user to calculate efficiency of the engineers
- Track request status and request processed based on priorities
- Classifying service requests and request fulfillment

B. Service Request Info

The Service Request Information is the record holding any management relevant information about the service requested by the users.

It consist of the following fields,
- Service Request ID
- Date and Time of request
- Requested user details
- Service description
- Location
- Priority
- Status

## V. ALGORITHM

**Algorithm to assign work effectively**
**Create** workdetails
**Initialise** workcount = 0
**If** workcount < 3
work can be assigned to a corresponding engineer
**Else**
assign work to next engineer satisfying the condition
**End**

**To analyse engineer efficiency**
a. Collect engineer details
b. Determine the points for each engineer based on cumulative ratings/feedbacks
c. Calculate the time taken for the work  completed by each engineer
d. Calculate min(worktime) among the engineers
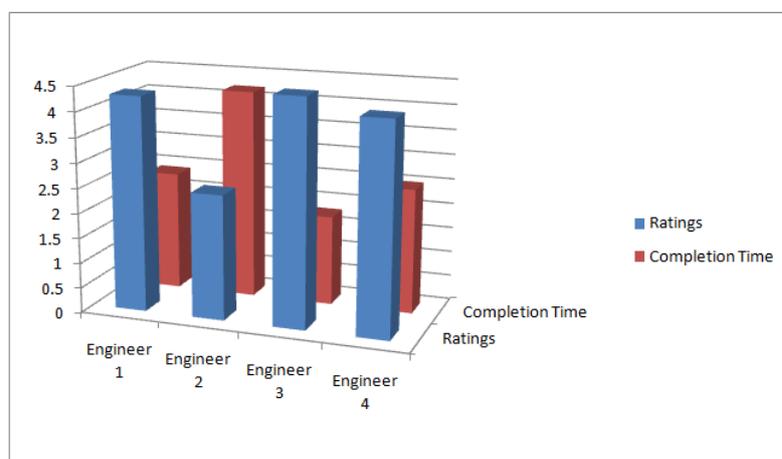e. Assign work frequently based on above results
f. End



Fig. 6. Worker Efficiency Chart

## VI. TABLE DESIGN

Table design gives the details about the tables that are used in the application. The table design for this application is given as follows
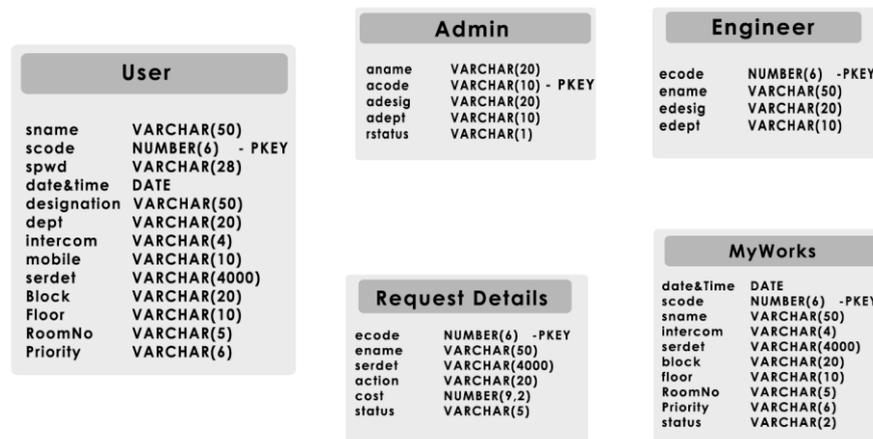
**User**

| | |
|---|---|
| sname | VARCHAR(50) |
| scode | NUMBER(6) - PKEY |
| spwd | VARCHAR(28) |
| date&time | DATE |
| designation | VARCHAR(50) |
| dept | VARCHAR(20) |
| intercom | VARCHAR(4) |
| mobile | VARCHAR(10) |
| serdet | VARCHAR(4000) |
| Block | VARCHAR(20) |
| Floor | VARCHAR(10) |
| RoomNo | VARCHAR(5) |
| Priority | VARCHAR(6) |

**Admin**

| | |
|---|---|
| aname | VARCHAR(20) |
| acode | VARCHAR(10) - PKEY |
| adesig | VARCHAR(20) |
| adept | VARCHAR(10) |
| rstatus | VARCHAR(1) |

**Engineer**

| | |
|---|---|
| ecode | NUMBER(6) -PKEY |
| ename | VARCHAR(50) |
| edesig | VARCHAR(20) |
| edept | VARCHAR(10) |

**Request Details**

| | |
|---|---|
| ecode | NUMBER(6) -PKEY |
| ename | VARCHAR(50) |
| serdet | VARCHAR(4000) |
| action | VARCHAR(20) |
| cost | NUMBER(9,2) |
| status | VARCHAR(5) |

**MyWorks**

| | |
|---|---|
| date&Time | DATE |
| scode | NUMBER(6) -PKEY |
| sname | VARCHAR(50) |
| intercom | VARCHAR(4) |
| serdet | VARCHAR(4000) |
| block | VARCHAR(20) |
| floor | VARCHAR(10) |
| RoomNo | VARCHAR(5) |
| Priority | VARCHAR(6) |
| status | VARCHAR(2) |

Fig. 7. Table Design

## VII. CONCLUSION

The service request management process that includes receiving a user enquiry and has a special feature of notifying about the progress of work as well as calculating the efficiency of the workers, it provides more benefits than the existing applications. It mainly focuses on providing better service to the users, thereby managing the time effectively and efficiently.

## ACKNOWLEDGEMENT

The service request procurement is fulfilled once user needs are met. The workflow reaches completion and acknowledgement is sent via notification/mail to the respective users.

We have taken efforts in this application. However, it would not have been possible without the kind support and help of our institution which provided data for this project. We highly indebted to Mr. Chithambarathanu M for his guidance and constant supervision as well as for providing necessary information regarding the application and also his support in completing the project. The authors are thankful and gratefully acknowledge all reviewers for their valuable suggestions for enriching the quality of the paper.

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