

# Daily Production & Rejection Monitoring Android App

Vrunda Patel<sup>1</sup> Sudhir Shahare<sup>2</sup> Sumitkumar Sahare<sup>3</sup> Samarpita Bansod<sup>4</sup> Komal Warankar<sup>5</sup>

<sup>1,2,3,4,5</sup>Department of Information Technology

<sup>1,2,3,4,5</sup>Shri Sant Gajanan Maharaj College of Engineering, Shegaon, Sant Gadge Baba Amravati University, Maharashtra, India

*Abstract*— The project entitled “Daily Production and Rejection Monitoring App” is aimed to reduce table work and provide mobility to the production work. The main objective of our Android app is to provide abstract view of production to super admin in a timely manner. Firstly, we create some super admin accounts who is eligible to keep watch on production of company within industrial area. Then, all the remaining users like admin, managers, HR’s, MD’s etc. can create their personal account in which they can have access to limited modules. Super Admin can restrict access of some modules to admin. It will help the employees of their company to go through their personal accounts and maintain it. Members are given separate account so that activities of different members are confidential. A super admin can insert, delete, update and view general users as well as he can view defect management in a daily manner and ShiftWise. Each shift is last for 8 hours. Each user can maintain his/her personal profile. This Android app having some modules as Defect Counting, User Management, Employee Management and ShiftWise defect counting. In an Android app, top left has a menu option in which we provide Dashboard and Final Excel Sheet. As we analyze production scenario, it is represented in pictorial view (Bar Chart) and data is automatically converted into excel sheet. We can generate excel sheet of generated or recorded data to analyze production of a company. This is kind of summarization. Any authorized user can access his/her account anytime, anywhere within limited industry area. It can manage unlimited number of users.

**Key words:** Daily Production, Rejection Monitoring

## I. INTRODUCTION

This app does more than just counting defects and generating excelsheets. It enables you to gather information about defects counted and to keep track of individual employees. One of the strength of this app is that you can access data from anywhere, anytime you want. This gives you mobility in the manufacturing process.

The project entitled “Daily Production and Rejection Monitoring System” is aimed to reduce table work and provide mobility to the production work. The main objective of our Android app is to provide abstract view of production to super admin in a timely manner. Firstly, we create some super admin accounts who is eligible to keep watch on production of company within industrial area. Then, all the remaining users like admin, managers, HR’s, MD’s etc. can create their personal account in which they can have access to limited modules. Super Admin can restrict access of some modules to admin. It will help the employees of their company to go through their personal accounts and maintain it. Members are given separate account so that activities of different members are confidential.

A super admin can insert, delete, update and view general users as well as he can view defect management in a

daily manner and shift wise. Each shift is last for 8 hours. Each user can maintain his/her personal profile. This Android app having some modules as Defect Counting, User Management, Employee Management and shift wise defect counting. In an Android app, top left has a menu option in which we provide Dashboard and Final Excel Sheet. As we analyze production scenario, it is represented in pictorial view (Bar Chart) and data is automatically converted into excel sheet. We can generate excel sheet of generated or recorded data to analyze production of a company. This is kind of summarization. Any authorized user can access his/her account anytime, anywhere within limited industry area. It can manage unlimited number of users.

### A. Problem Definition

Rejected pistons are calculated. Production is observed target wise not on daily basis. Data accessibility is not mobile. Real time data is not display. As your organization grows, the demands for the mobility of the manufacturing process is increased. You hire human resources and pay them salaries based on their responsibilities and deliverables. Salaries may be fixed or based on performance or combination both. Additionally, you need to conform to various aspects that ensure employee benefits.

As the number variables grows each time you are processing or counting pistons the chances of missing pistons counting is happened, because pistons manufacturing process is manual. You need to analyze each pistons to be analyzed carefully because this is very tedious task that includes various defect parameters that is inner diameter, outer diameter, hardness, thickness and various measurements of the manufactured pistons.

This is not the fact only, but we also deal with counted defects representation and generating excelsheets and present it in pictorial view. Currently system they have is the only standalone java-based application which is derived manually. That means if shift of 8 hours is end, to start new shift we must manually enter details like operator name, stage, time and so on.

And these applications do not have any means to show real-time data, they only show graph of defect counting and we need to refresh it every time you enter pistons. There is no provision to maintain user profiles, to update user and employee data.

The entire process becomes extremely cumbersome and any error have serious damage to the system in terms of delayed in manufacturing process and wastage of material. Eventually every organization outgrows Excel. In fact, it’s never too early to move to an android app for the mobility of defective pistons data.

### B. Purpose

Simplifies data entry, saves time and helps to reduce errors. Counting defects becomes fast and easy compared to manual system; Save on time and extra manpower cost.

Employee can view number of defects get counted and the current production of the product. Employee can view or generate final excelsheets and print it. To provide mobility to the process, because this process remains continue in one location. Reporting to the higher authority becomes easy, as the end of the day you can final excel sheet of the day that shows production of the whole day. To save time of higher authority as they can have glance on final report at the end of the day in his busy schedule anytime, anywhere.

### C. Scope

This app is mainly developed for reducing manual work of employees, keeping manual records of the production process. In this app, we have to count the number of defects counts in a day, on a single machine by a single operator shift wise.

Accordingly, we create five modules as:

#### 1) Defect Counting:

In this stage, worker or employees inserted defective pistons in the bin, where ultrasonic sensor is fitted in such a way that if any pistons entered in the bin, it is detected by sensor and LED is glow that indicates this piston is counted in the system.

#### 2) User Management:

This module is help the Super Admin to maintain Admin accounts. This Super Admin can add, delete, update or view the user

#### 3) Employee Management:

Each Admin can maintain accounts of workers and employees. Admin can add, delete, update or view the details that in a whole day how many defects counted by this employee on a single machine.

#### 4) Analysis:

- This module shows statistical data of the production in a daily format in a table format.
- This data shows how many defects are counted by operator on a single machine in a shift.

#### 5) Report:

This module generates above mentioned table data in a excel-sheet. In the analysis module, below the table we provide "Generate Excel- sheet" button, if we press it it will convert this table data in a Excel- sheet and after we have to download the generated Excel-sheet.

#### 6) Features:

This app is very beneficial to the higher authority in many ways as user management, employee management and many more. Daily production and Rejection monitoring app offering for creating user accounts and maintain it. This application is helps to users to maintain his/her personal as well as official data. Completely Automated- When the real time data i.e. defective pistons are inserted into the bin, graphs are automatically refresh. Unlimited users- This app can handle unlimited number of users. Anytime access – If any user want to access real time data

## II. LITERATURE REVIEW

A Literature survey shows the various analysis and research made in the field of your interest and the results already published, taking into account the various parameters of the project and the extent of the project.

### A. Existing System

Before gathering requirement for this project, we had done survey regarding the existing system. There are various app available in India for counting defects. This app is created for many pistons or other mechanical tools manufacturing industries. The company for we made a prototype want some additional feature that we should implement. We give them system with efficient functionality and some of the additional feature suggested by them. They just suggested us that we have to develop a system that counts defective pistons on daily, monthly, weekly and shift-wise basis. And later if this stage is successfully developed they want barcode generation feature. As when in an industry, manufacturing process is carried out, pistons must go through many stages. In this process, when pistons move from one stage to another stage, it is passed in stray, which is of 96 in size. So they want uniquely track the details of each and every pistons stray. So, they want to attach unique barcode with each and every stray, so they can track details further. After that, there demand is that to make an Android app which is used for some of the higher authority users, to keep track of production details of the company on a daily basis from their cabin itself. They need not to go to the working site where these data are stored. Now, these data are stored on their local server so that they can access production related data anytime, anywhere.

### B. Proposed System

In these System

- 1) Each user provides user accounts so that they can maintain their accounts. They can be register in this app by any higher authority. These higher authorities provide them some of the priviledges, which module has accessed by which user.
- 2) Super Admin can handle and have access to each user account. He can add, delete, update and view the other users. They can see which employee counted number of defects in a single day in a shift-wise basis.
- 3) This app helps them to go for automation of the entire manufacturing process. So, that they can easily maintain their data on a local server. These app can maintain any number of accounts

## III. SYSTEM ANALYSIS

### A. Requirement

#### 1) Software Requirement:

Arduino Software(IDE); HTML, CSS, AJAX, Bootstrap, JavaScript, PHP; MySQL Database; XAMPP Server; Android SDK.

#### 2) Hardware Requirement:

Arduino kits for counting defects; Ultrasonic sensor and IR sensor; Router for generating IP; Wi-Fi Module; Ethernet Module; LAN Cables.

### B. Functional Requirement

#### 1) User Authentication:

The user must be able to provide his username and password in order to validate and sign-in to his account. The priority for this feature is high. The user will enter his username and password in respective text boxes and then click on the Sign-

in button. The response of this event would be that the main dashboard corresponding to the role of application user with all functionalities would be displayed. The user will not be able to log-in if he provides a wrong username and/or password. A notifying message must appear to the user in case of valid username and/or password.

2) *Account creation:*

The user must be able to register with the server by creating an account i.e. by providing information about his company, personal details and by specifying a username and password. The priority of this feature is high. Creating account is the responsibility of the Super Admin. Super Admin login through his account and click on module “User Management” and next select “Add User” from pop-up menu and click on Submit button. Next in front of him one form will be opened in which he has to fill the user details like username, password, Date-Of-Birth, Joining Date and many more. The Super Admin has privilege to assign how many modules users can view. Next, he submit the form and handover username and password to the user.

3) *Accessing the details:*

The user should be able to view the details which may be his/her personal as well as official information

IV. SYSTEM DESIGN

During the design phase the system is designed to satisfy the requirements identified in the previous Requirement Analysis phase. The requirements are transformed into System Design Document that accurately describe design of the of the system and that can be used as an input to the system development in a next phase.

A. *Design objective*

- Transformation of all requirements into detailed specifications covering all the aspects of the system.
- Assessments and planning or security risks
- Approval to progress to the Development phase.

B. *Architecture Diagram*

Any real world system is used by different users. The user can be developers, testers, business people, analysts and many more. So before designing a system the architecture id made with different perspective in mind. The most important part is to visualize the system from different viewer’s perspective. The better we understand the better we makes the system. Thus the Architecture diagram in the software project is nothing but the diagrammatic representation of the internal features of the project. The Architecture diagram for this project is as shown:

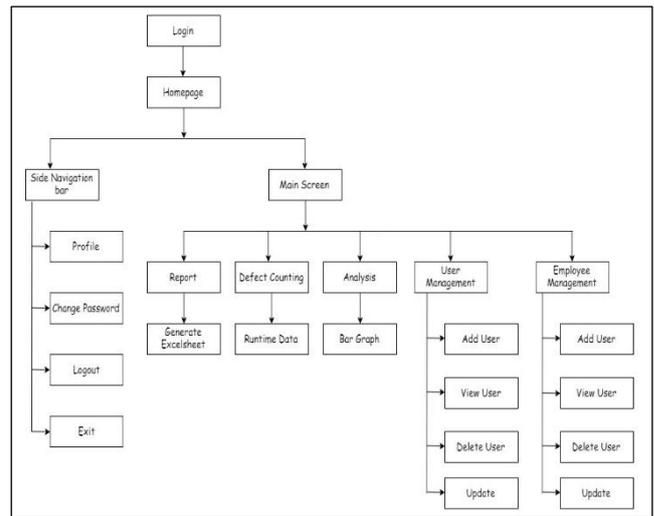


Fig. 1: Architecture Diagram

The app has to login first, next appear homepage. After this, we have two options as side navigation bar and main screen. Side navigation bar has four options: Profile, change password, Logout, Exit etc. and on main screen has five options: Report generate excel-sheet, Defect counting shows real-time data, Analysis shows bar graph, User management and Employee management has options for performing operations such as add user, delete user, update user and view user etc.

C. *Use case diagram*

The use case is used to describe external user interaction with the system. This app has two types of Actors or users that is super Admin and Admin who interact with the system. Diagram contains use cases as Login, Select Required options extending User Management, Employee Management and Report generation. This all activities are collaborated with database.

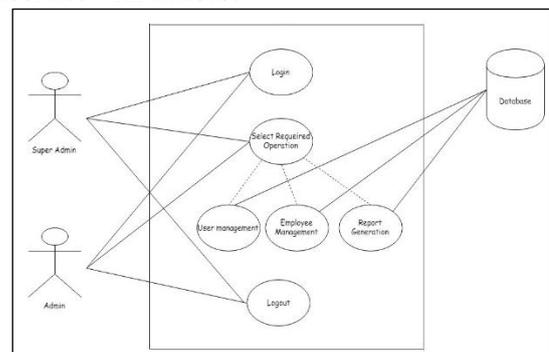


Fig. 2: Use case Diagram

D. *Component Diagram*

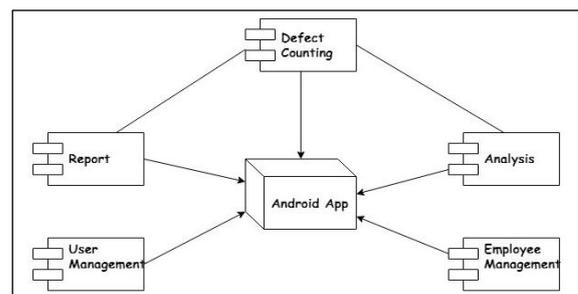


Fig. 3: Component Diagram

Component diagram is used to show the view of components in the system. Above component diagram is for this Android app includes component such as Defect counting, Report, Analysis, User Management and Employee Management etc.

### E. Activity Diagram

Activity is the step of the process. Activity diagram is the sequence of steps as per working. In this app, we have two Activity diagrams for two users: Super Admin and Admin.

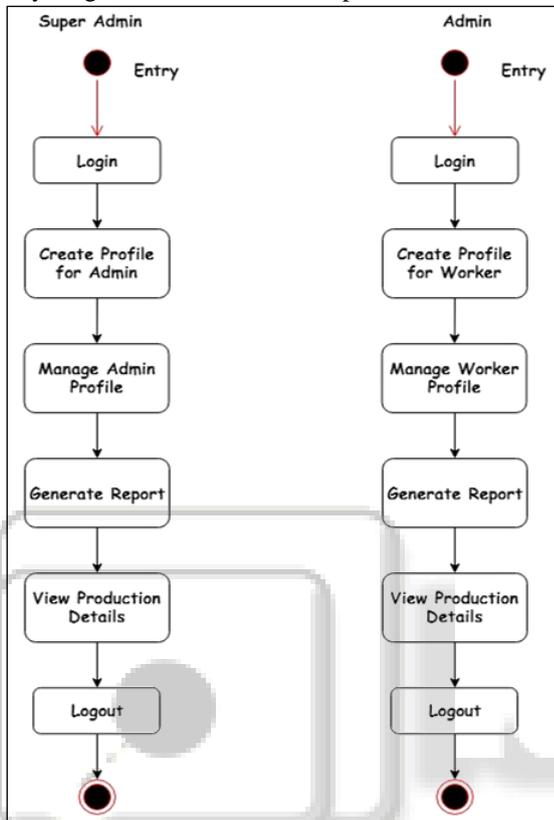


Fig. 4: Activity Diagram

### F. Deployment Diagram

Deployment diagram are the diagram which is used to get the view of project in a server like things that considering everything is server. Deployment diagram for this project is as follows:

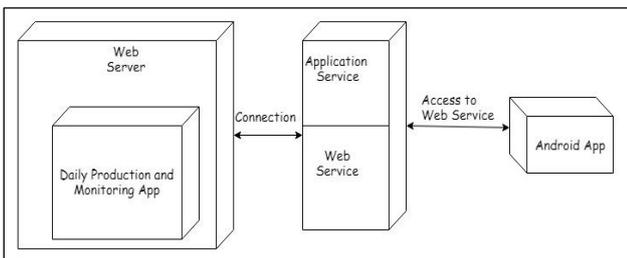


Fig. 5: Deployment Diagram

## V. IMPLEMENTATION

### A. Implementation Strategy

Implementation is the realization of an application, or execution of a plan, idea, model, design, specification, standard, algorithm or policy. In a computer science, an implementation is a realization of technical specification or algorithms as a program, software component, or other

computer system through computer programming and deployment. Many implementations may exist for a given specification or standards.

To implement a system successfully, a large number of inter-related tasks need to be carried out in an appropriate sequence. Utilizing a well-proven implementation methodology and enlisting professional advice can help but often it is the number of tasks, poor planning and inadequate resourcing that causes problem with an implementation project, rather than any of the task being particularly difficult. Similarly, with the cultural issues it is often the lack of adequate consultation and two-way communication that inhibits achievements of the desired results.

The project basically consists of following modules:

- Super Admin

- Admin

Functional Modules:

- Defect counting

- Analysis

- Reports

- User Management

- Employee Management

## VI. CONCLUSION

The intention behind developing this app is it save time and manual work of employees. Daily production and Rejection Monitoring App is providing automation to the manufacturing process. It provides many features that are not available in a single screen. It is highly reliable app which provide efficient working of the counting real-time data. It is not just provide counting of real-time data but pictorial representation of the data as well. It helps to manage accounts of Admins such as Manager's, MD's, HR's and various employees.

### A. Future scope

We can add some of the facilities to the app in future:

- 1) We can give access to the employee to their respective accounts, but not data updation.
- 2) We can go for Cloud Computing, so that data is stored on cloud so that data accessibility is not limited to the industrial area
- 3) We can provide feature that if any employee want leave, he can apply for leave on app itself. If any higher authority wants to give some instructions to the subordinates that are common all.
- 4) We can provide feedback system, so that employee can complain about anything if he doesn't like something direct to the Super Admin.

B. Screen shots

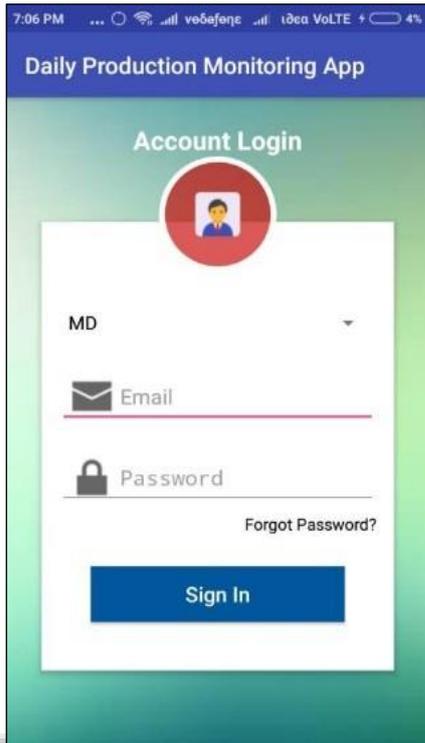


Fig. 6: Login Page

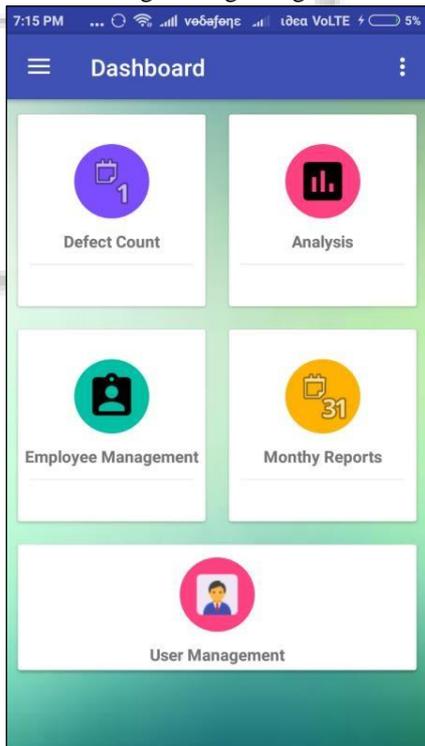


Fig. 7: Main Page

ID	Time	Value
514	2018-03-06 07:01:10.000000	1
515	2018-03-06 07:05:33.000000	1
516	2018-03-06 07:20:11.000000	1
517	2018-03-09 12:37:26.000000	1
518	2018-03-09 12:37:45.000000	1
519	2018-03-09 12:37:49.000000	1
520	2018-03-09 12:40:54.000000	1
521	2018-03-09 13:05:21.000000	1
522	2018-03-09 13:05:21.000000	1
523	2018-03-09 13:07:29.000000	1
524	2018-03-09 13:07:29.000000	1
525	2018-03-09 13:07:29.000000	1
526	2018-03-09 13:07:32.000000	1
527	2018-03-09 13:07:32.000000	1
528	2018-03-09 13:08:18.000000	1

Fig. 8: Report

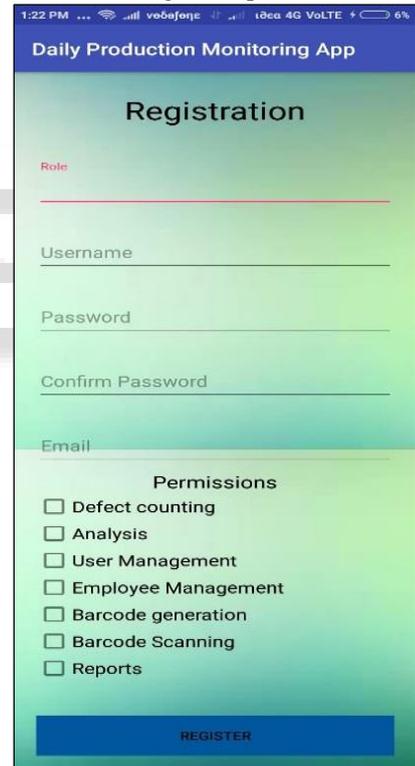


Fig. 9: User Registration

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