

A
PROJECT REPORT
ON
“Bways ERP System”
(Defect and Monitoring Module)
SUBMITTED
TO
SHIVAJI UNIVERSITY, KOLHAPUR
FOR THE AWARD OF
MASTER OF COMPUTER APPLICATION
(MCA-III, SEM VI)
BY
Miss. Amruta Nilesh Jagatap
UNDER THE GUIDENCE
OF
Mr. Vinayak Kagale Sir,
(B.Sc, M.C.A)
THROUGH
THE DIRECTOR
KOLHAPUR INSTITUTE OF TECHNOLOGY'S
INSTITUTE OF MANAGEMENT EDUCATION
& RESEARCH, KOLHAPUR
(2019-2020)

DECLARATION

To,
The Director,
K.I.T's I.M.E.R, Kolhapur.

Respected Sir,

I under signed hereby declare that the project entitled "**BWAYS ERP SYSTEM (Defect and Monitoring Module)**" developed under the guidance of **Mr. Vinayak Kagale Sir**, is my original work. The information generated in this project is based on the data collected by me.

I have not copied from any other project report submitted to **Shivaji University, Kolhapur** earlier.

Place: Kolhapur.

Date:

Miss. Amruta Nilesh Jagatap

ACKNOWLEDGEMENT

I am expressing my sincere gratitude to my guide **Mr. Vinayak Kagale Sir** for his valuable guidance & help during the project. Without his advice & co-operation I would not have succeeded in my project ever. His thoughtfulness & understanding was vast & thoroughly helpful in successful completion of this project.

Also I am expressing my gratitude to my guide **Miss. Aaditi Patil Madam (senior developer)** “**Compserv consultant Pvt.Ltd**” for her guidance during the project.

I am immensely thankful for the encouragement & inspiration provided to me by Head Of The Department **Mr. S. S. Patil Sir**, thankful to him for providing facilities needed for the accomplishment of this project.

Last but not the least I am also thankful to one & all that are directly or indirectly responsible for completion of this project within stipulated time.

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CHAPTER 1:INTRODUCTION

1.1ABOUT PROJECT

The system named Bways ERP System is a project which aims in developing a computerized system to maintain all the work of industry. Overall this project is developed to help the staff of industry in the best way possible & also reduce the human efforts.

In this system my module is Complaints & Monitoring in which following work can be done:

- 1) Admin logs in to the system using his credentials like username and password.
- 2) In my module, rejection complaints came from customer through mail or telephone mode. After that admin registers that complaint. During registration of complaint admin selects customer name, rejection quantity of products, product name, complaint received by which mode,etc.
- 3) In my module, there is another submodule named monitoring on complaints which are received. Monitoring means solving the complaints.
- 4) Here all complaints, monitored means solved complaints and remaining complaints are seen into table structure. If admin wants data he can take that data in excel format.

1.2 COMPANY PROFILE

Company Name: Compserv Consultants Pvt. Ltd.

About Company:-

Compserv Consultants Pvt. Ltd. (CCPL) is a Software Solutions Company, based out of Pune and Kolhapur, with a versatile range of solutions under its belt catering to a variety of business segments. The name ‘COMPSERV’ is fusion of computing and services, representing service commitments to customers for all their computing needs by employing latest technologies.

IT Software & consulting company:

A modest beginning 25 years ago, CCPL has come a long way. Today a team of over 70 Professionals work towards delivering excellence to its customers. It is a trusted IT solutions provider, with a proven capabilities in Design, Developments & Implementation of software solution across as diverse domains as Manufacturing, Foundry, Machine Shops, Trading Houses, Infrastructure companies to name a few. We focused on achieving 100% customer satisfaction. We were guided towards our goal by our steadfast resolve to never compromise on quality and service. A fantastic team became our vehicle in this journey and even today, our team remains the same enabling us to perform consistently.

Phase 1:

Requirements Analysis:

Requirements Analysis involves frequent communication with system users to determine specific feature expectations, resolution of conflict or ambiguity in requirements as demanded by the various users or groups of users, avoidance of feature creep and documentation of all aspects of the project development process from start to finish. Energy should be directed towards ensuring that the final system or product confirms to client needs rather than attempting to mold user expectations to fit the requirements.

Phase 2:

Documentation:

In software product development, documentation is the information that describes the product to its users. It consists of the product technical manuals and online information (including online versions of technical manuals and help facility descriptions). The term is also sometimes used to mean the source information about the product contained to design documents, detailed code comments, white papers & blackboard session notes.

Phase 3:

Development:

In development we done computer programming, documenting, testing & bug fixing involved in creating & maintaining applications and frameworks resulting in software product.

Phase 4:

Deployment:

Software deployment includes all the process required for preparing a software application to run and operate in a specific environment. In deployment we done installation, configuration, testing and making changes to optimize performance of software.

Phase 5:

Service:

After deployment we provide good service to our clients. Service plays an important role in our customer satisfaction and customer retention. It generates loyal customers to our company.

Company Address:

Kolhapur - Compserv Consultants Pvt. Ltd. ‘Compserv House’, C.S.No. 555/3/1, 2a/2b, ‘E’ Ward, Rajendra Nagar, Kolhapur – 416004.

1.3 EXISTING SYSTEM AND NEED OF SYSTEM

Existing System was carried out through manual process. Keeping record about complaints for particular product, calculations, defects, etc. becomes difficult. It takes more time to solve complaint manually. In manually working , One has to keep record about complaints ,who has given the defect report ,whether complaint is monitored? And it takes so much time . .And some companies require fast working about the solving defect of product.so it becomes very complicated to handle this transaction manually which will be useful for further reference.

Limitations of existing system

Due to the manual process, the firm faces some of the following problems.

- Sluggish search of details
- Poor calculation
- Timing constraints were ignored
- Information mishandling
- Tedious report generation

Need for System

Computerization of any type of transactions or event in a firm will provide better performance. It includes the degree of time consumption to a great extent. Where the existing manual system is computerized then.

- Time and Record is saved
- Accurate calculation can be done
- Human tensions and risks can be overcome
- Report generation at ease
- Hi-fied status of the firm
- Search of information is ease
- Wastage of resources can be saved

1.4 SCOPE OF WORK

This product has great future scope. Software developed for the windows and later versions environments and Linux OS.

This project also provides security with the use of Login-id and Password, so that any unauthorized users can not use your account. The only Authorized that will have proper access authority can access the software.

Here in this project we select customer and product name as well as we write the rejection quantity, nature of complaint, etc. for the complaint. After that we keep the record that how many rejection quantity are solve of complaints. And his things are done with ease and efficiently .

1.5 OPERATING ENVIRONMENT: HARDWARE REQUIREMENTS

- Processor : i3
- Monitor : VGA
- Hard Disk : MINIMUM 20 GB or Higher
- RAM : 512MB or Higher

Software requirement

- Editor : Visual Studio Code, Visual studio 2019
- Operating System : Windows 8/8.1/10
- Coding Language : Angular 8, Typescript,
- Front end : Angular 8, Bootstrap
- Angular Version : Angular 8
- Back end : Asp.net web API, SQL Server 2008
- Web Browser : Chrome, Firefox, Explorer

1.6 DETAILED DESCRIPTION OF TECHNOLOGY USED



What is Angular?

Angular is an open source Model-View-Controller framework which is similar to the JavaScript framework. Angular JS is probably one of the most popular modern day web frameworks available today. This framework is used for developing mostly Single Page applications. This framework has been developed by a group of developers from Google itself. Because of the sheer support of Google and ideas from a wide community forum, the framework is always kept up to date. Also, it always incorporates the latest development trends in the market.

What is Angular 8?

Angular is a framework of JavaScript used to build web and mobile applications. Angular 8 is a client side typescript based structure which is used to create dynamic web applications. It's first used to create dynamic web applications. It's first version was released by Google in 2012 and named as AngularJS. Angular 8 is the updated version of Angular 2.

Angular 8 is a great UI (User Interface) library for the developers. Angular is reusable UI component helps us constructing attractive, consistent, and functional web pages and web applications. Angular 8 is a JavaScript framework which makes us able to create an attractive Single Page Applications (SPAs).

Angular 8 Features

Angular has the following key features which make it one of the powerful frameworks in the market.

1. **Preview of Ivy:** Angular has the following key features which makes it one of the powerful frameworks in the market.

Components of Ivy :

Tree shakable:

It removes unused pieces of your code; the framework does not interpret the component. Instead, the component reference appropriate guidance from the bundle results in smaller bundles and faster load times.

Low memory Footprint:

It is an incremental DOM that didn't need any memory to render the view if the view doesn't change the DOM. So, it allocates the memory when the DOM nodes are added or removed. Since most of the template calls don't change anything result in substantial memory savings.

2. **Differential Loading:** The new app generated by Angular CLI will now contain separate bundles & it will be loaded automatically by the browser that load and render faster. Following is a diagram which represents that it decreases the bundle size in this way.
3. **Router Backward Compatibility:** Angular Team added backward compatibility mode to Angular router that helps to generate the path for large projects and make it easier to move to Angular with lazy loading.
4. **Web Worker Bundling:** A web worker is included while building the production bundles, which are essential for improving the parallel ability and help to increase the performance.
5. **Bazel Support:** Bazel is aiming for precisely reproducible builds, but concurrent builds will be a lot faster & it is beneficial if your app uses several modules and libraries. The angular framework itself built with Bazel. It is expected to include in @angular/cli in version 8.
6. **Lazy Loading:** Lazy loading is based on the concepts of Angular Routing and it helps bring down the size of large files by lazily loading the data that are required.

Angular 8 Advantages

- Since it's an open source framework, you can expect the number of errors or issues to be minimal.
- Two-way binding – Angular keeps the data and presentation layer in sync. Now you don't need to write additional Typescript code to keep the data in your HTML code and your data later in sync. Angular will automatically do this for you. You just need to specify which control is bound to which part of your model.
- Routing – Angular can take care of routing which means moving from one view to another. This is the key fundamental of single page applications; wherein you can move to different functionalities in your web application based on user interaction but still stay on the same page.
- Angular supports testing, both Unit testing and Integrated testing.

Differences between Angular and AngularJS:

Angular was a ground-up rewrite of AngularJS.

- Angular does not have a concept of "scope" or controllers, instead it uses a hierarchy of components as its primary architectural characteristic.
- Angular has a different expression syntax, focusing on "[]" for property binding, and "()" for event binding[7]
- Modularity – much core functionality has moved to modules
- Angular recommends the use of Microsoft's Typescript language, which introduces the following features:
 - Static Typing, including Generics
 - Annotations
 - Typescript is a superset of ECMAScript 6 (ES6), and is backwards compatible with ECMAScript 5(i.e.: JavaScript).
 - Dynamic loading
 - Asynchronous template compilation

BOOTSTRAP



Bootstrap is a free and open-source CSS framework directed at responsive, mobile-first front-end web development. It contains CSS- and (optionally) JavaScript-based design templates for typography, forms, buttons, navigation and other interface components.

Bootstrap is the third-most-starred project on GitHub, with more than 131,000 stars, behind only freeCodeCamp (almost 300,000 stars) and marginally behind Vue.js framework. According to Alexa Rank, Bootstrap getbootstrap.com is in the top-2000 in US while vuejs.org is in top-7000 in US.

ASP.NET WebAPI



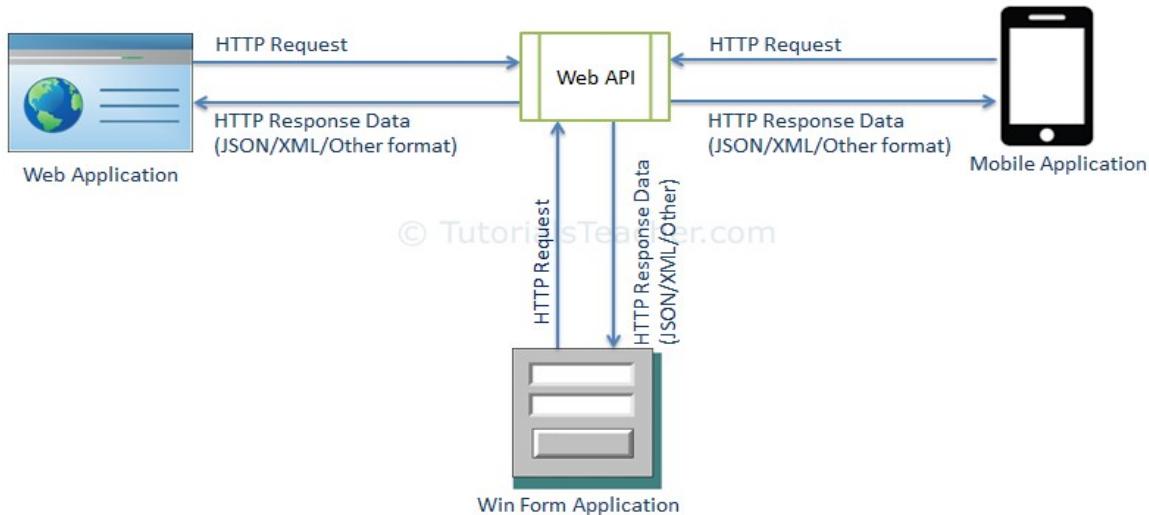
What is Web API?

In computer programming, an application programming interface (API) is a set of subroutine definitions, protocols, and tools for building software and applications. To put it in simple terms, API is some kind of interface which has a set of functions that allow programmers to access specific features or data of an application, operating system or other services.

Web API as the name suggests, is an API over the web which can be accessed using HTTP protocol. It is a concept and not a technology. We can build Web API using different technologies such as Java, .NET etc. For example, Twitter's REST API's provide programmatic access to read and write data using which we can integrate twitter's capabilities into our own application.

ASP.NET Web API

The ASP.NET Web API is an extensible framework for building HTTP based services that can be accessed in different applications on different platforms such as web, windows, mobile etc. It works more or less the same way as ASP.NET MVC web application except that it sends data as a response instead of html view. It is like a web service or WCF service but the exception is that it only supports HTTP protocol.



ASP.NET Web API Characteristics

1. ASP.NET Web API is an ideal platform for building RESTful services.
2. ASP.NET Web API is built on top of ASP.NET and supports ASP.NET request/response pipeline.
3. ASP.NET Web API maps HTTP verbs to method names.
4. ASP.NET Web API supports different formats of response data. Built-in support for JSON, XML, BSON format.
5. ASP.NET Web API can be hosted in IIS, Self-hosted or other web server that supports .NET 4.0+.
6. ASP.NET Web API framework includes new HttpClient to communicate with Web API server. HttpClient can be used in ASP.MVC server side, Windows Form application, Console application or other apps.

MS SQL Server



What is SQL Server?

Microsoft SQL server or more commonly known as MS SQL Server is a relational database server developed by Microsoft Corporation. A database server is basically application that is used to store data and other software applications retrieve and store data using some language which is called SQL (Structured Query Language) in the case of MS SQL Server.

The main interface tool for MS SQL Server Management Studio (SSMS) which supports a 64-bit and 32-bit operating environment. The MS Server endorses ANSI SQL. The ANSI SQL is the standard structured query language or SQL. Although the MS SQL Server has its own application of the SQL language, that is Transact-SQL or T-SQL. T-SQL, further renders the capabilities of representing a stored procedure, exception handling, variables, etc.

TypeScript



What is TypeScript?

TypeScript is an open-source pure object-oriented programming language. It is a strongly typed superset of JavaScript which compiles to plain JavaScript. It contains all elements of the JavaScript. It is a language designed for large-scale JavaScript application development, which can be executed on any browser, any Host, and any Operating System. The TypeScript is a language as well as a set of tools. TypeScript is the ES6 version of JavaScript with some additional features.

FEATURES

- **Object-Oriented language:** TypeScript provides a complete feature of an object-oriented programming language such as classes, interfaces, inheritance, modules, etc. In TypeScript, we can write code for both client-side as well as server-side development.
- **TypeScript supports JavaScript libraries:** TypeScript supports each JavaScript element. It allows the developers to use existing JavaScript code with the TypeScript. Here, we can use all of the JavaScript frameworks, tools, and other libraries easily.
- **JavaScript is TypeScript:** It means the code written in JavaScript with valid .js extension can be converted to TypeScript by changing the extension from .js to .ts and compiled with other TypeScript files.
- **TypeScript is portable:** TypeScript is portable because it can be executed on any browsers, devices, or any operating systems. It can be run in any environment where JavaScript runs on. It is not specific to any virtual-machine for execution.
- **DOM Manipulation:** TypeScript can be used to manipulate the DOM for adding or removing elements similar to JavaScript.

CHAPTER 2:PROPOSED SYSTEM

2.1 PROPOSED SYSTEM

The proposed system was developed in such a way to solve the above problems faced by the present normal system by using latest technology. For this, the ideal environment is the windows environment; as it is the most popular multitasking system available today. The front end used to develop the system is angular with visual studio code for its flexibility and compatibility.

The proposed system use SQL Server and Web API as back end, which has powerful querying functions, easy accessing methods and user – friendly, enough securities are provided to the database and the new system. A good user interface is provided with the system. User will be able to generate valuable reports based on COMPLAINT AND MONITORING PROCESS

2.2 OBJECTIVE OF SYSTEM

Here in this project we create complaint of customer about the defect in materials to monitoring the complaint. After that we keep the record that complaint and calculations of rejection quantity and these things are done with ease and efficiently. To design and develop Complaint And Monitoring process and to implement it so that it becomes user friendly.

2.3 USER REQUIREMENTS

User of the system will be provided with the Graphical User Interface, there is no command line interface for COMPLAINT AND MONITORING .

- Easy to use and operate quickly.
- The software provides good graphical user interface.
- The software can add, update, delete COMPLAINT.
- System can generate Excel after successful COMPLAINT AND MONITORING.
- User should have knowledge of how to operate computer.
- User should have knowledge of system.
- User should have knowledge of data recovery.

2.4 FEASIBILITY STUDY

The feasibility of the project is analyzed in this phase and business proposal is put forth with a very general plan for the project and some cost estimates. During system analysis the feasibility study of the proposed system is to be carried out. This is to ensure that the proposed system is not a burden to the company. For feasibility analysis, some understanding of the major requirements for the system is essential.

Significant things to be considered while analyzing feasibility are:

- ECONOMICAL FEASIBILITY
- OPERATIONAL FEASIBILITY
- TECHNICAL FEASIBILITY

Economical Feasibility

This study is carried out to check the economic impact that the system will have on the organization. The amount of fund that the company can pour into the research and development of the system is limited. The expenditures must be justified. Thus the developed system as well within the budget and this was achieved because most of the technologies used are freely available. Only the customized products had to be purchased. As we are working on Java it cut costs as many plugins and tools available for free on the internet. So, there is no need to invest in licensed software which can be an additional financial burden to the firm.

Technical Feasibility

This study is done keeping in mind the main features of SRS to conclude whether the firm has the technical knowledge to finish the project. It's also taken in mind to consider the details of the business to decide whether many other elements could impact the study. It's also necessary to make sure the team handling the project has sufficient knowledge. There's a need to ensure the tech used is neither out of date nor too advanced and complicated in which the team lacks experience and knowledge to handle it. It's also important to guaranty that the project fulfills both legal and technical accepts with in proposed budget.

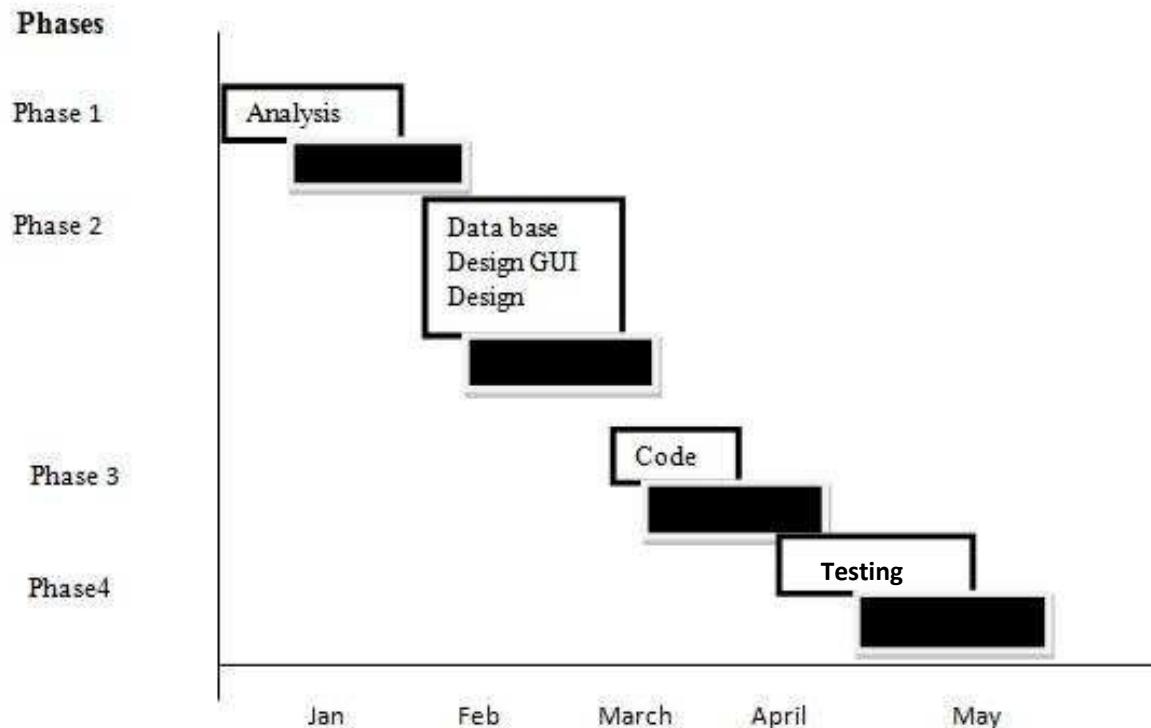
The study is aimed at knowing and understanding the current tech resource of the firm and its usefulness to the anticipated needs of the developing system.

It's an interpretation of the SW and HW resources of the firm and whether it fulfills the requirement of developing system.

Operational Feasibility

Operational feasibility is the outlook of how efficiently the developing system finds solution to the problem, and makes use of circumstance noted during scope definition and how it fulfill each and every requirement listed during requirement analysis. This study aims on the extent the developing project fits in the present environment of the firm. To make sure that the project is accomplished and to achieve the expected result, the required modifications are to be done during development stage these modifications must take place in the earlier stage to get the expected outcome. The proposed system is feasible in a huge firm which deals in giant database

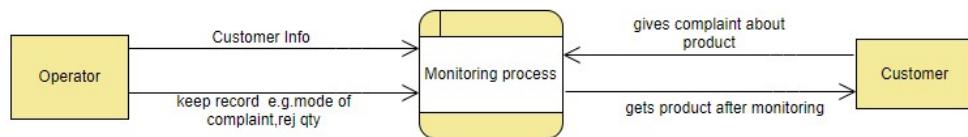
2.5 GANTT CHART



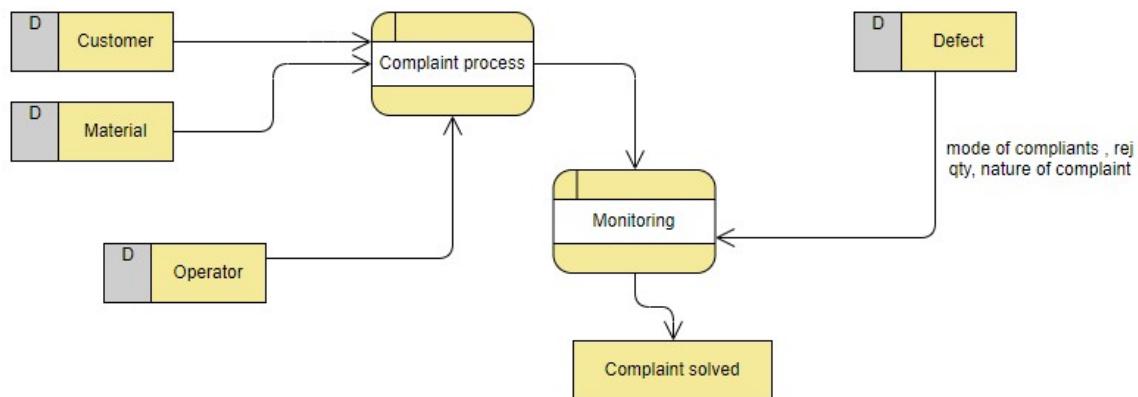
CHAPTER 3:ANALYSIS AND DESIGN

3.1 Data flow diagram

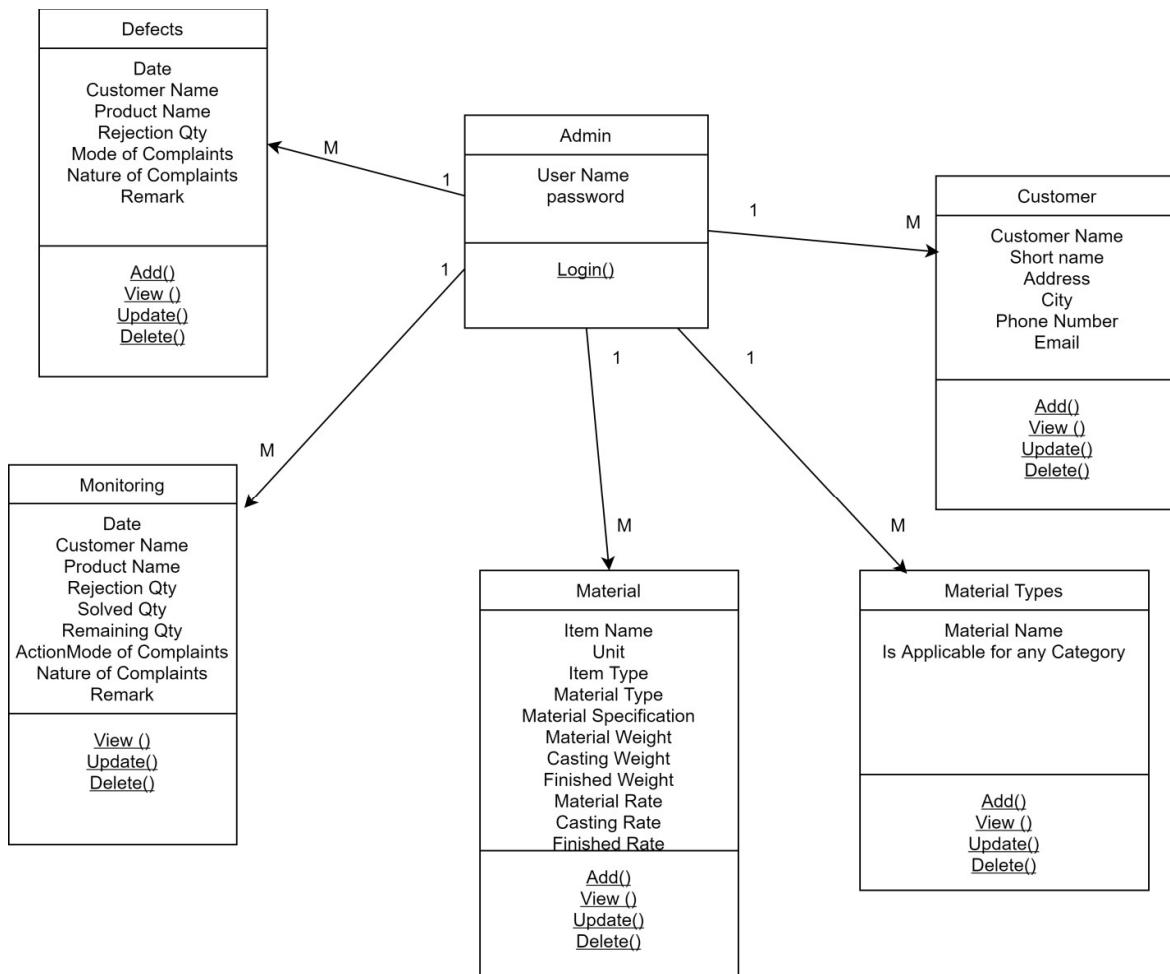
0th level diagram



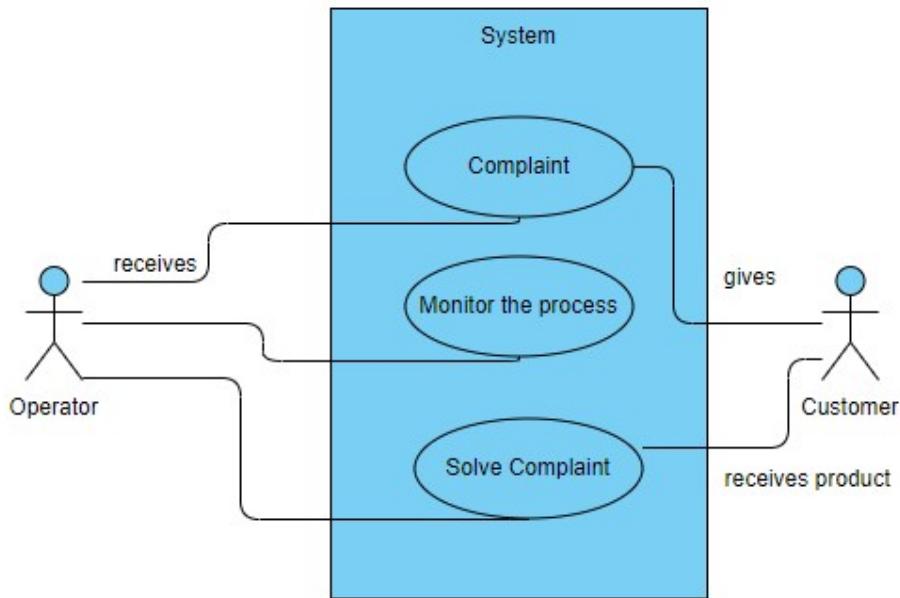
1st level diagram



3.2 Class Diagram:

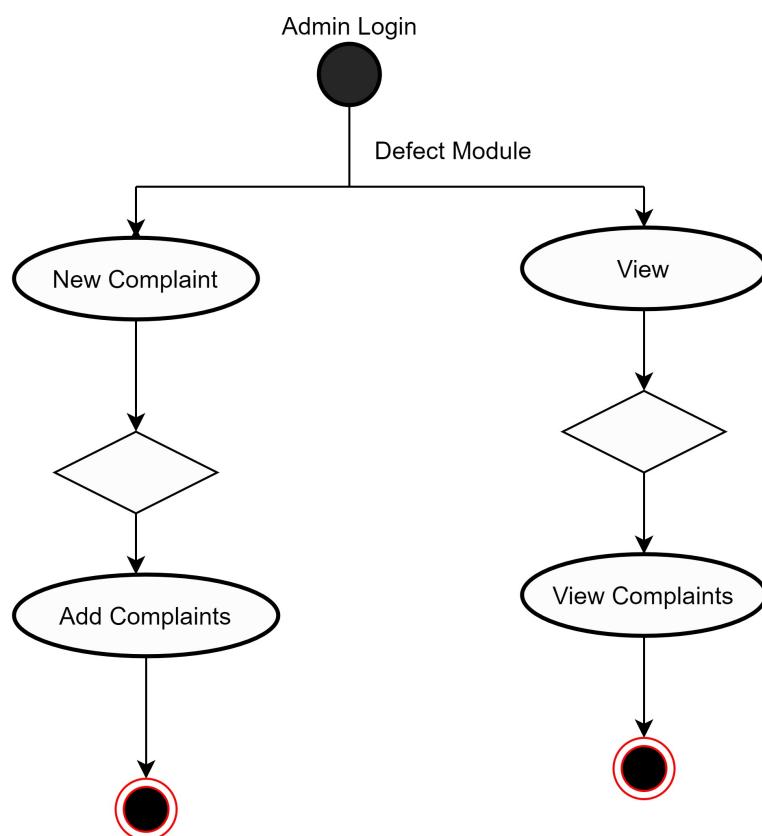


3.3 Use case diagram

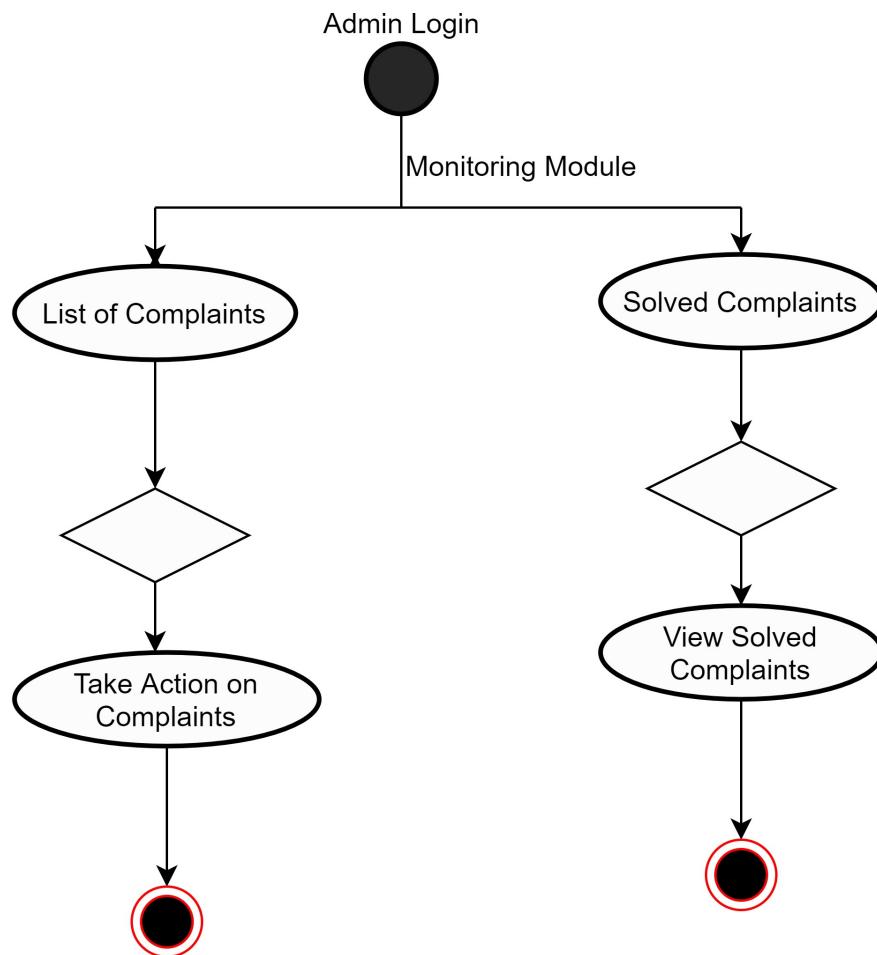


3.4 Activity Diagram:

3.4.1 Defect module Activity Diagram

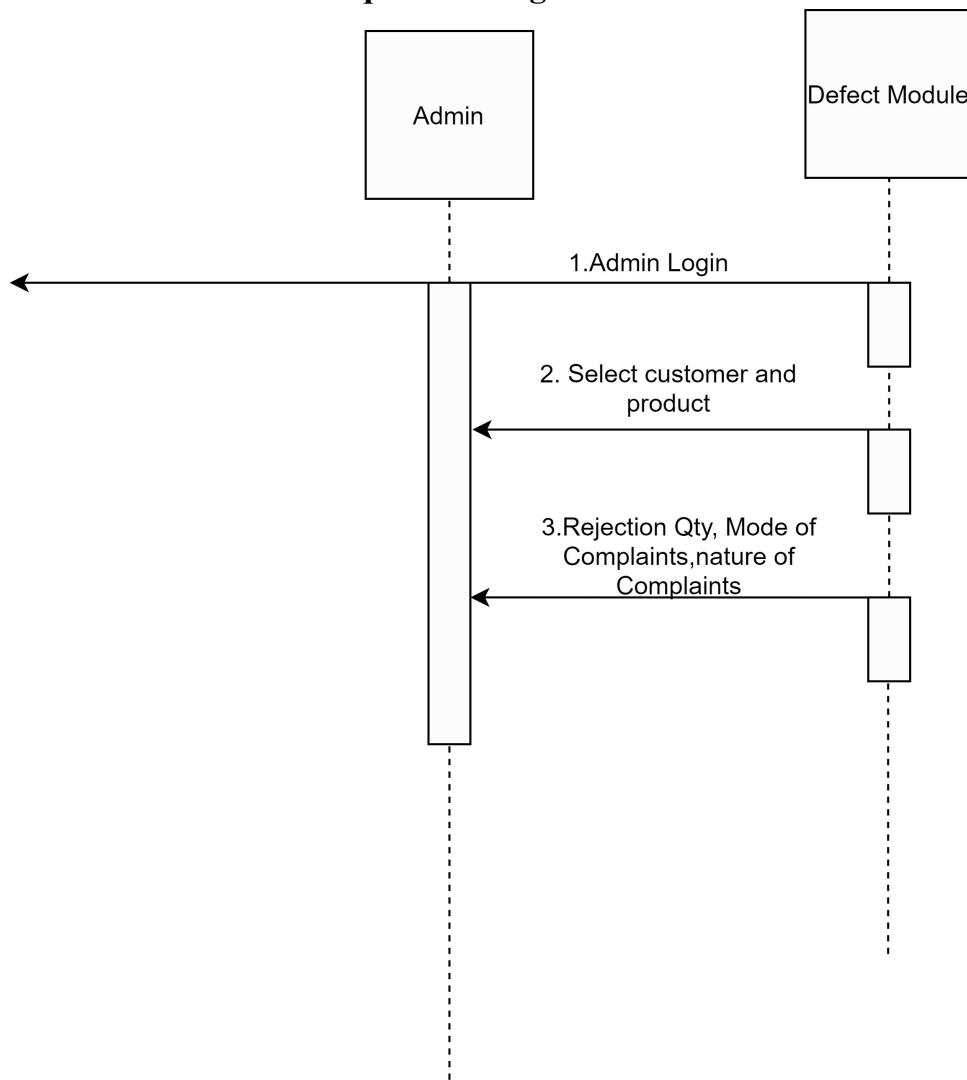


3.4.2 Monitoring module Activity Diagram

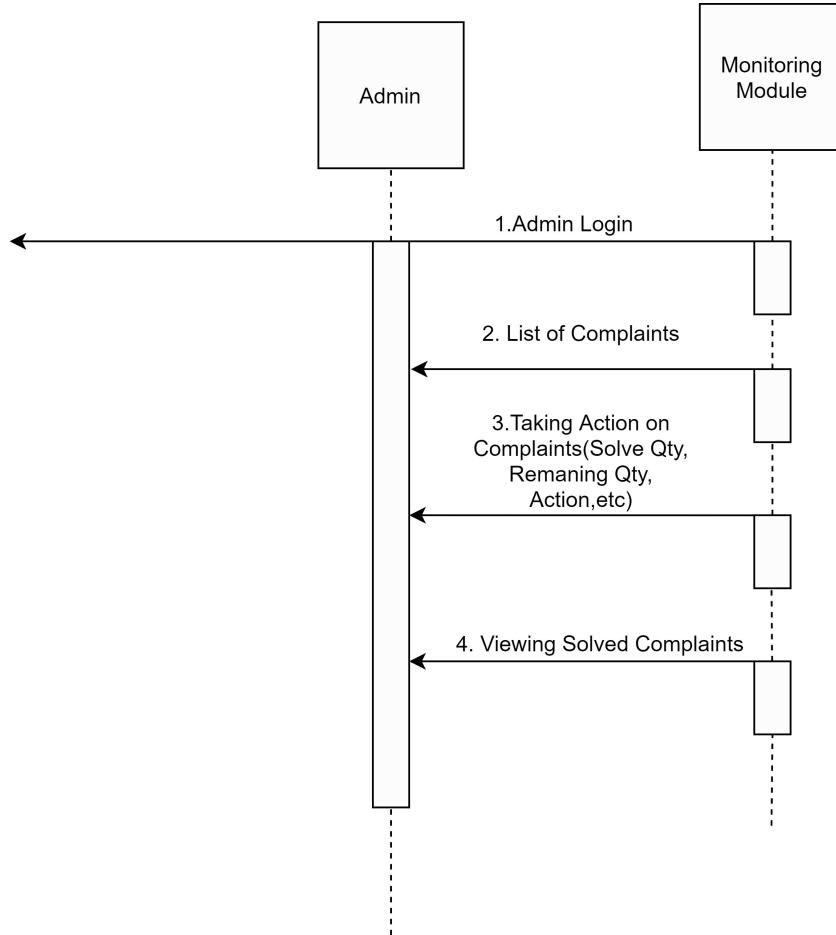


3.5 Sequence Diagram:

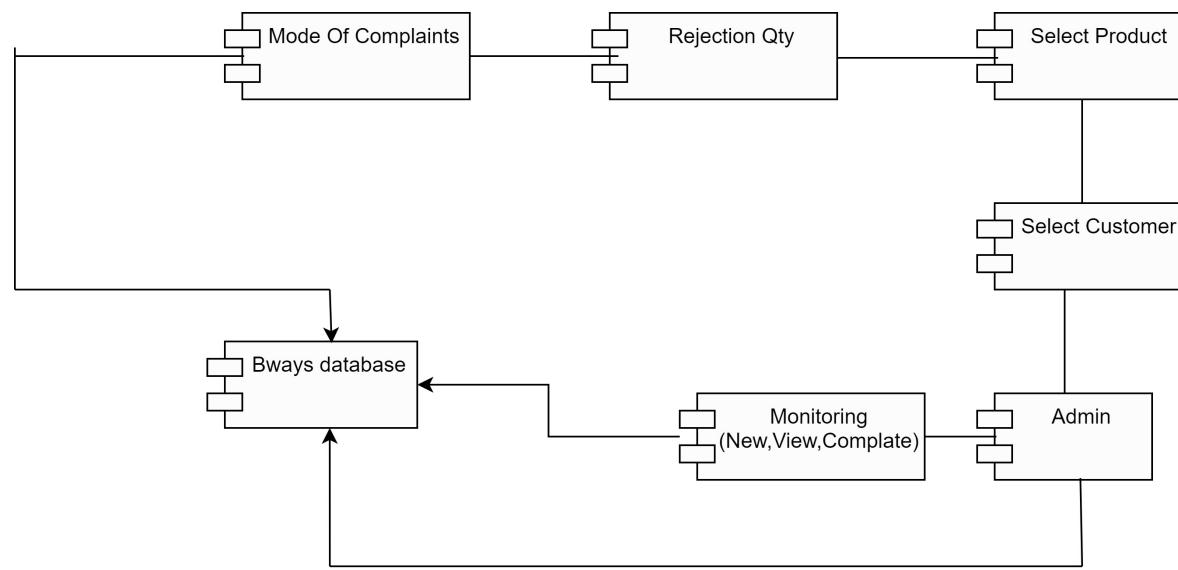
3.5.1 Defect Module Sequence Diagram



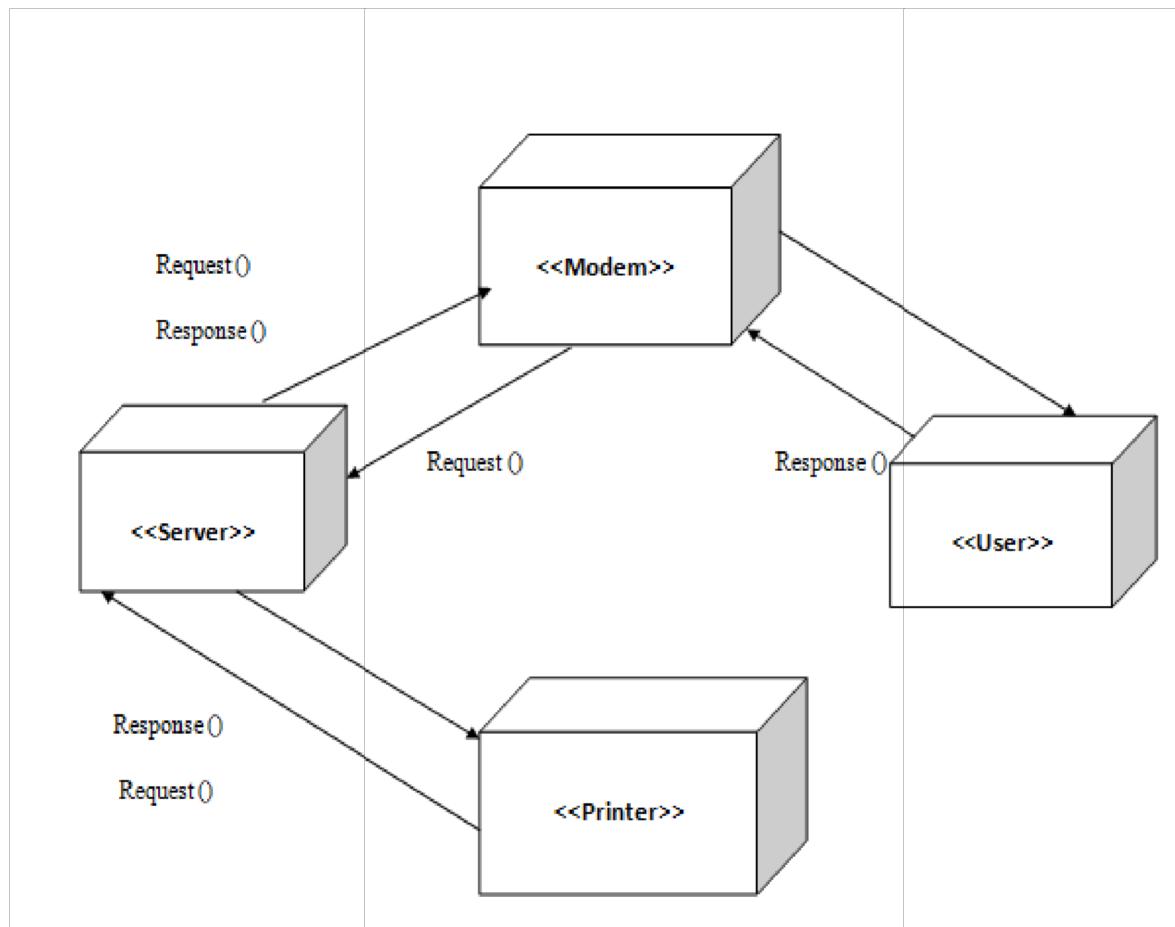
3.5.2 Monitoring Module Sequence Diagram



3.6 Component Diagram :



3.7 Deployment Diagram :



3.8 Module Specification:

1. Admin:

If user is admin, then important work is there for admin. Products are added, updated, deleted by admin(fertilizers). If admin wants to see the list of Customer & transporters associated with the system, then that facility is given with deletion facility only to admin.

3.9 User Interface Design

Customer:

CUSTOMER

Customer Name

Short Name

Address

City

Email

Phone Number

Save

Cancel

Customer List:

CUSTOMER DETAILS

Search Customer Name OR Mobile Number OR Short Name

CUSTOMER NAME	PHONE NUMBER	ADDRESS	EMAIL	ACTION
Bhudan iron works	9822404665	Y.P power nagar kolhapur	Bhudan @gmail.com	
Dinesh Tools	8810101642	Y p Power Nagar Kolhpur	dinesh@gmail.com	
Indain Machine Tools & Hardware	8860601215	Y P power Nagar	indainmachine@gmail.com	
Mahalaxmi Metal Works	8881136260	Shiroli MIDC kolhapur	Mahalaxmi@gmail.com	
Micrometal Indutries	9855001616	Kolhapur	Micrometals@gmail.com	

Go Back

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Customer Update:

CUSTOMER DETAILS
CUSTOMER ID : 100010001

Supplier Name
Bhudan iron works

Short Name
Bhudan

Address
Y.P power nagar kolhapur

City
Kolhapur

Phone Number
9822404665

Email
Bhudan @gmail.com

update

Material Type:

MATERIAL TYPE

Material Type

IS applicable for Any Category

Save **Cancel**

Material List:

MATERIAL DETAILS				
SELECTION	MATERIAL CODE	MATERIAL TYPE	IS APPLICABLE FOR ALL	ACTION
<input type="checkbox"/>	10001110	CI casting	Applicable	
<input type="checkbox"/>	10001111	Aluminium casting	Applicable	

Go Back « Previous 1 Next »

Material Type Update

menu
X

MATERIAL DETAILS
MATERIAL ID : 10001110

Material Type

Material Type

IS applicable for Any Category

Update

Material Details:

MATERIAL DETAILS

Item Name	Unit	
<input type="text"/>	<input type="text"/>	
Item Type	Material Type	
<input type="text"/>	<input type="text"/>	
Material Specification		
<input type="text"/>		
Material Weight	Casting Weight	Finished Weight
<input type="text"/>	<input type="text"/>	<input type="text"/>
Material Rate	Casting Rate	Finished Rate
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input style="margin-right: 10px; border: 1px solid #ccc; border-radius: 5px; padding: 5px 10px; color: red; font-weight: bold; font-size: 10px;" type="button" value="Submit"/> <input style="border: 1px solid #ccc; border-radius: 5px; padding: 5px 10px; color: red; font-weight: bold; font-size: 10px;" type="button" value="Cancel"/>		

Material Details List:

MATERIAL DETAILS

MATERIAL CODE	NAME	MATERIAL TYPE	ITEM TYPE	ACTION
10010	Fan Blead	Aluminium casting	1	

◀ Go Back « Previous 1 Next »

Material Details Update:

MATERIAL DETAILS
MATERIAL ID :10010

Item Name	Unit	
Fan Blead	38	
Item Type	Material Type	
Purchase Or Own Production	Aluminium casting	
Material Specification		
Aluminim Fan Use		
Material Weight	Casting Weight	Finished Weight
28	30	25
Material Rate	Casting Rate	Finished Rate
300	170	280
		Update

Complaints Form:

COMPLAINT FORM

Date	<input type="text" value="dd/07/2020"/> 
Customer Name	Product Name
<input type="text"/>	<input type="text"/>
Rejection Quantity	Mode of Complaints
<input type="text"/>	<input type="text"/>
Nature of Complaints	Remark
<input type="text"/>	<input type="text"/>
Save	Cancel

Complaints List:

DEFECT DETAILS				
<input type="text"/> Search Defect Name				
DATE	CUSTOMER NAME	PRODUCT NAME	REJECTION QUANTITY	REMARK
08-07-2020		Fan Blead	5	fdd
 Back		« Previous 1 Next »		

Monitoring List

MONITORING DEFECT LIST						
<input type="text"/> Search Customer Name Or Product Name						
TRAN No	Date	Customer Name	Product Name	Rejection Quantity	Remark	Action
100001	08-07-2020		Fan Blead	5	fdd	
 Back		« Previous 1 Next »				

Monitoring Solve Defects:

COMPLAINT DETAILS
COMPLAINT NUMBER : 100001

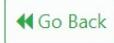
Date	Customer Name <input type="text" value="Enter Customer Name"/>	
Product Name	Fan Blead	
Rejection Quantity	Solve Quantity <input type="text" value="Enter rejection Quantity"/>	Remaining Quantity <input type="text" value="Remaining Quantity"/>
Action	Mode of Complaints <input type="text" value="0"/>	
Nature of Complaints	Remark <input type="text" value="sdf"/> <input type="text" value="fdd"/>	
<input type="button" value="Save"/>		

Monitoring Solve List

MONITORING DEFECT SOLVE LIST

Search Customer Name Or Product Name

TRAN No	Date	Customer Name	Product Name	Rejection Quantity	Remark	Action
100001	08-07-2020		Fan Blead	0	sdf	 

  « Previous 1 Next »

3.10 Table Specification**1. CNFMATERIALS**

CODE	Bigint	NOT NULL
CATEGOARY	nvarchar(50)	NULL
NAME	nvarchar(50)	NULL
MATERIAL_RATE	decimal(18, 0)	NULL
APPLICABLE_FOR	nvarchar(50)	NULL
SYSADD_DATETIME	Date	NULL
SYSADD_LOGIN	nvarchar(50)	NULL
SYSCHNG_DATETIME	Date	NULL
SYSCHNG_LOGIN	nvarchar(50)	NULL
STATUS_CODE	Int	NULL
CODE	Bigint	NULL

2. MSTACCTGLSUB

CODE	bigint	NOT NULL
NAME	nvarchar(50)	NULL
SUB_CODE	nvarchar(50)	NULL
PHONE_NO	nvarchar(50)	NULL
EMAIL	nvarchar(50)	NULL
ADDRESS	nvarchar(MAX)	NULL
REMARK	nvarchar(MAX)	NULL
CITY	nvarchar(50)	NULL
STATE	nvarchar(50)	NULL
STATUS_CODE	Int	NULL

3. MSTEMPLOYEE

CODE	Bigint	NOT NULL
NAME	nvarchar(50)	NULL
PHONENUMBER	nvarchar(50)	NULL
EMAIL	nvarchar(50)	NULL
ADDRESS	nvarchar(50)	NULL
STATUSCODE	int	NULL
SHORTNAME	nvarchar(50)	NULL
WEBSITE	nvarchar(50)	NULL
STRUCTUREOFWORK	nvarchar(50)	NULL
WORKTIME1	nvarchar(50)	NULL
WORKTIME2	nvarchar(50)	NULL
CITY	nvarchar(50)	NULL
STATE	nvarchar(50)	NULL

NAME	nvarchar(50)	NULL
------	--------------	------

4. MSTMATERIALS

CODE	bigint	NOT NULL
TYPE	bigint	NULL
MATERIAL_RATE	decimal(18, 0)	NULL
NAME	nvarchar(50)	NULL
UNIT_CODE	nvarchar(50)	NULL
DRG_NO	bigint	NULL
ADD_SPEC	nvarchar(50)	NULL
HSN_CODE	bigint	NULL
SYSADD_LOGIN	nvarchar(50)	NULL
SYSCHNG_DATETIME	date	NULL
SYSCHNG_LOGIN	nvarchar(50)	NULL
STATUS_CODE	Bigint	NULL
RATE	decimal(18, 0)	NULL
CASTINGRATE	decimal(18, 0)	NULL
FINISHEDRATE	decimal(18, 0)	NULL
WEIGHT	decimal(18, 0)	NULL
CASTINGWEIGHT	decimal(18, 0)	NULL
FINISHEDWEIGHT	decimal(18, 0)	NULL

5. TRNACCTDEFC

TRAN_NO	Bigint	NOT NULL
TRAN_SUBTYPE	nvarchar(50)	NULL
TRAN_DATE	Date	NULL
MATERIAL_CODE	Bigint	NULL
REF_TRAN_NO	nvarchar(50)	NULL
REF_TRANDATE	Date	NULL
REF_CODE	nchar(10)	NULL
SHORT_NARRATION	nvarchar(MAX)	NULL
REF_TEXT	nvarchar(MAX)	NULL
REJ_QTY	int	NULL
SOLVE_QTY	int	NULL
REMAINING_QTY	int	NULL
ACTIONS	nvarchar(50)	NULL
STATUS_CODE	Int	NULL
USERNAME	nvarchar(50)	NULL
REF_TEXT1	nvarchar(50)	NULL
REF_TEXT2	nvarchar(50)	NULL
CUST_CODE	bigint	NULL

3.11 Test Procedure:-

Testing is a very important aspect of development and can largely determine the fate of an application. Good testing can catch application-killing issues early on, but poor testing invariably leads to failure and downtime.

While there are three main types of software testing: unit testing, functional testing, and integration testing, in this blog post, I am going to talk about developer-level unit testing. Before I dive into the specifics, let's review – at a high level – what each type of testing entails.

Types of Software Development Tests

Unit tests are used to test individual code components and ensure that code works the way it was intended to. Unit tests are written and executed by developers. Most of the time a testing framework like JUnit or TestNG is used. Test cases are typically written at a method level and executed via automation.

Integration tests check if the system as a whole works. Integration testing is also done by developers, but rather than testing individual components, it aims to test *across* components. A system consists of many separate components like code, database, web servers, etc. Integration tests are able to spot issues like wiring of components, network access, database issues, etc.

Functional tests check that each feature is implemented correctly by comparing the results for a given input against the specification. Typically, this is not done at a developer level. Functional tests are executed by a separate testing team. Test cases are written based on the specification and the actual results are compared with the expected results. Several tools are available for automated functional testing like [Selenium](#) and [QTP](#).

As mentioned earlier, unit testing helps developers to determine whether the code works correctly. In this blog post, I will provide helpful tips for unit testing in Java.

1. Use a Framework for Unit Testing

Java provides several frameworks that for unit testing. [TestNG](#) and [JUnit](#) are the most popular testing frameworks. Some important features of JUnit and TestNG:

- Easy to setup and run.
- Supports annotations.
- Allows certain tests to be ignored or grouped and executed together.
- Supports parameterized testing, i.e. running a unit test by specifying different values at run time.
- Supports automated test execution by integrating with build tools like Ant, Maven, and Gradle.

2. Use Test Driven Development Judiciously!

Test-driven development (TDD) is a software development process in which tests are written based on the requirements before any coding begins. Since there is no code yet, the test will initially fail. The minimum amount of code is then written to pass the test. The code is then refactored until it is optimized.

The goal is to write tests that cover all the requirements as against simply writing code first that may not even meet the requirements. TDD is great as it leads to simple modular code that is easy to maintain. Overall development speeds up and defects are easily identified. Also, unit tests get created as a by-product of the TDD approach.

3. Measure Code Coverage

Code coverage measures (in percentage) how much of the code is executed when the unit tests are run. Normally, code with high coverage has a decreased chance of containing undetected bugs, as more of its source code has been executed in the course of testing. Some best practices for measuring code coverage include:

- Use a code coverage tool like Clover, Corbetura, JaCoCo, or Sonar. Using a tool can improve testing quality, as these tools can point out areas of the code that are untested, allowing you to develop additional tests to cover these areas.
- Whenever new functionality is written, immediately write new tests to cover.
- Ensure that there are test cases that cover all the branches of the code, i.e. if/else statements.

COMPLAINT FORM

Date	dd/07/2020
Customer Name	Product Name
Customer Name is required	Product Name is required
Rejection Quantity	Mode of Complaints
Rejection Quantity is required	Mode of Complaints is required
Nature of Complaints	Remark
Nature of Complaints is required	Remark is required
Save	Cancel

CHAPTER 4:USER MANUAL

USER MANUAL

4.1 User Manual: -

The web application is very easy to use and user friendly.

1. On complaint screen page user will get various selection option by which user can select the all things such as customer, product and also select the mode of complaint.
2. After selection process user can fill the rejection quantity , nature of complaint and remark of complaint then click save they are stored record in system.
3. After that user see the list of complaint.user select the checkbox of complaint and then click on view option so the selected checkbox list are display on view page .
4. On view page , you can see the detail information about complaint by using view complaint option.
5. By using Monitoring page user can easily update existing Complaint and aslo calculate the solve quantity of material.
6. By using solve Complaint page user see list of solve complaints
7. You can easily delete Complaint using delete Complaintpage.
8. Print Complaint page gives invoice of Complaint PROCESS and also you create Excel of complaint records.

4.2 Menu Explanation:-

Website Guide:

1. It will open home page of website.
2. You can see pages such as
 1. Complaint
 - a. Add Complaint
 - b. View Complaint
 2. Monitoring
 - a. Edit Complaint
 - b. View Solve Complaint
 - c. Delete Solve Complaint
 - d. Print Solve Complaint
3. When you open the website first it shows the Dashboard of company details and menu sidebar.
4. In sidebar , you can choose the option of complaint and then add your complaint using complaint page.

Following is a description of links & buttons which is used while implementing the System –

1) ComplaintScreen: This is the first page in the system you can add the complaint

2) ViewComplaint : It can view Complaintform.

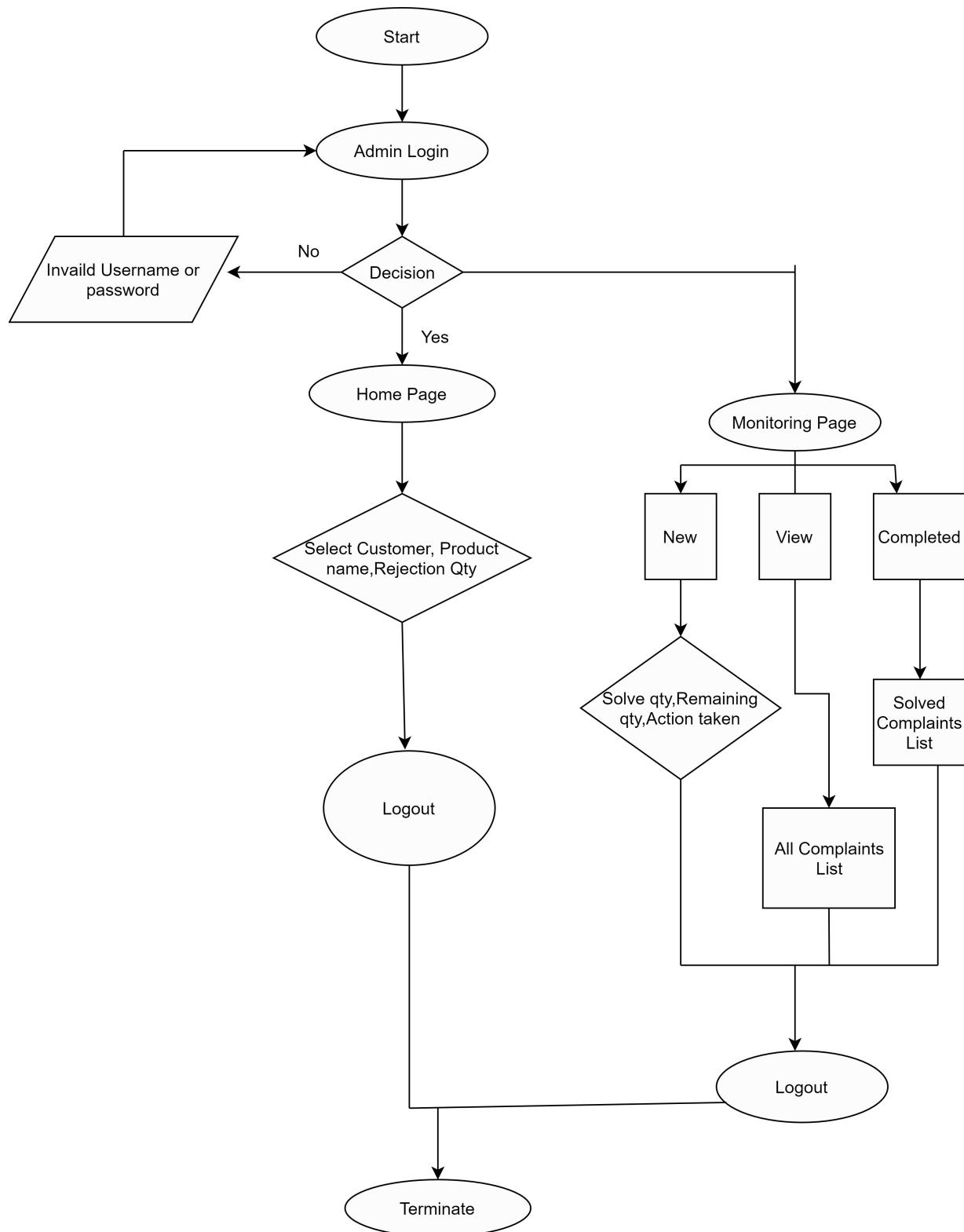
3) Update Complaint : This page allows to edit and update Complaint.

4) Delete Solve Complaint :This page used for deleting specificSolve Complaint.

5) View Solve Complaint :It can view Solve Complaint.

6) PrintSolve Complaint :This Page is used for print the Solve Complaintin pdf form and create Excel sheet.

4.3 Flow Chart



CHAPTER 5: LIMITATIONS

5.1 Limitation

Limitations in existing system:

1. Existing system is manual system, therefore data can't be maintained properly.
2. In the existing system Customers, if want to register themselves they have to use paper pen system
3. If admin wants to see records he doesn't get that records in right manner.
4. Security is not maintained, etc.

Limitations removed in proposed system:

1. Proposed system is computerized.
2. In the system confidential data can be maintained properly.
3. All daily work can be done very easily.
4. Security is maintained by login panels uses name and password.
5. Saves time & cost of all members related with system.
6. All modules works efficiently & accurately.

CHAPTER 6: PROPOSED ENHANCEMENTS

6.1 PROPOSED ENHANCEMENT:

This website is currently limited and implemented for storing limited number of information.

The facility of discussion Add to cart can be applied in project. We consider, our implementation is best up to our knowledge at this level.

For large data we can use unstructured database server.

Data inconsistency can be handled.

CHAPTER 7: CONCLUSION AND BIBLIOGRAPHY

7.1 CONCLUSION:-

This is to conclude that the project that we under took was worked upon with a sincere effort. Most of the requirements have been fulfilled up to the mark and the requirements which have been remaining, can be completed with a short extension.

7.2 BIBILOGRAPHY: -

Reference Books:

Nate Nurray,The Complete Book on Angular.

Greg Lim, Beginning Angular with Typescript

APRESS, Pro Typescript.

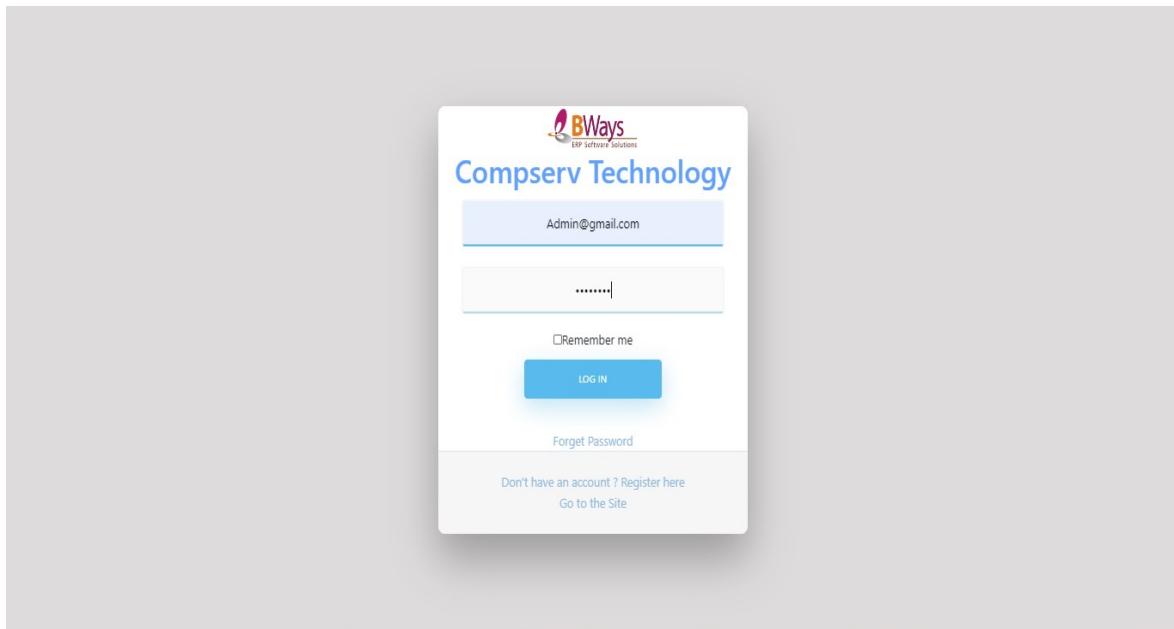
OREILLY, Learning SQL.

Websites:-<https://angular.io><https://www.typescriptlang.org><https://stackoverflow.com>

<https://www.tutorialspoint.com>

ANNEXURES

ANNEXURE 1: USER INTERFACE SCREENS

1) Admin Login:**2) Home Page**

The home page features a navigation sidebar on the left with icons and labels: Home, Master, Complaints, Sales, and Setting. The main content area has a header "Compser Consultants Pvt Ltd". Below it is a section titled "OUR PRODUCTS" featuring three items: "B-Ways" (with a description about being an ERP solution for manufacturing and trading), "QikFiles" (described as an intelligent Document Management System), and "Dudh Sangh ERP" (described as an Enterprise Resource Planning Software for milk federations). A "Logout" button is located in the top right corner.

3) Customer Add:

CUSTOMER

Customer Name
Nishnath Industries

Short Name
Nishnath

Address
Kagal MIDC, Kolhapur

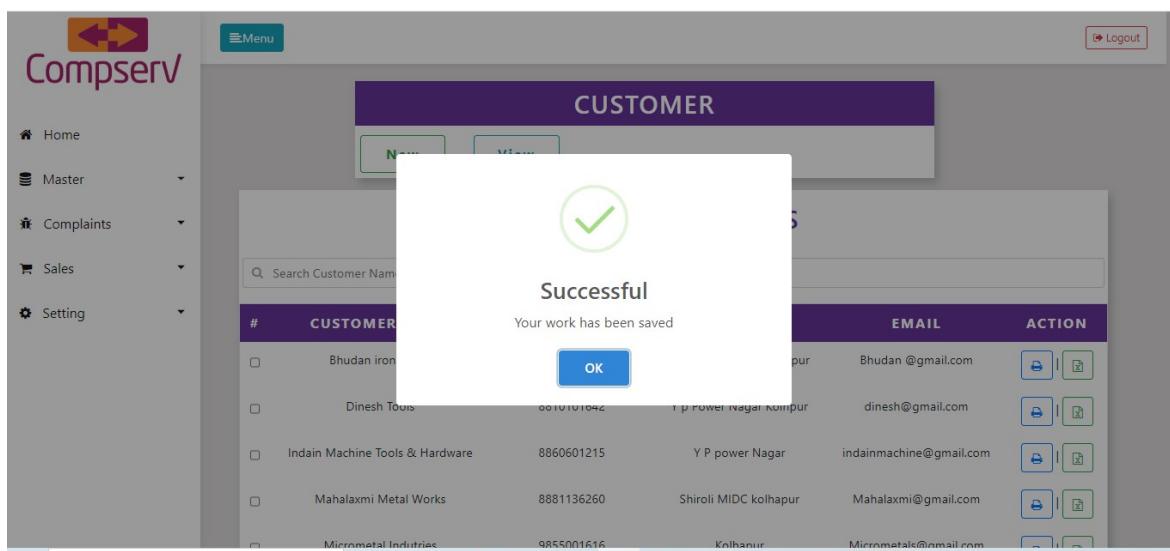
City
Kolhapur

Phone Number
0232662132

Email
nishnath12@gmail.com

Save **Cancel**

4) Add Customer



5) Customer List

#	CUSTOMER NAME	PHONE NUMBER	ADDRESS	EMAIL	ACTION
1	Bhudan iron works	9822404665	Y.P power nagar kolhapur	Bhudan@gmail.com	
2	Dinesh Tools	8810101642	Y p Power Nagar Kolhpur	dinesh@gmail.com	
3	Indain Machine Tools & Hardware	8860601215	Y P power Nagar	indainmachine@gmail.com	
4	Mahalaxmi Metal Works	8881136260	Shiroli MIDC kolhapur	Mahalaxmi@gmail.com	
5	Micrometal Indutries	9855001616	Kolhapur	Micrometals@gmail.com	
6	VK Industries	9860363612	Yp Power Nager Kolhapur	vk@gmail.com	

6) Customer List

#	CUSTOMER NAME	PHONE NUMBER	ADDRESS	EMAIL	ACTION
1	Bhudan iron works	9822404665	Y.P power nagar kolhapur	Bhudan@gmail.com	
2	Dinesh Tools	8810101642	Y p Power Nagar Kolhpur	dinesh@gmail.com	
3	Indain Machine Tools & Hardware	8860601215	Y P power Nagar	indainmachine@gmail.com	
4	Mahalaxmi Metal Works	8881136260	Shiroli MIDC kolhapur	Mahalaxmi@gmail.com	
5	Micrometal Indutries	9855001616	Kolhapur	Micrometals@gmail.com	
6	VK Industries	9860363612	Yp Power Nager Kolhapur	vk@gmail.com	
7	Nishnath Industries	0232662132	Kagal MIDC, Kolhapur	nishnath12@gmail.com	

7) Customer Update

CUSTOMER DETAILS
CUSTOMER ID : 100010001

Supplier Name
Bhudan iron works

Short Name
Bhudan

Address
Y.P power nagar kolhapur

City
Pune

Phone Number
9822404665

Email
Bhudan@gmail.com

ACTION

update

8) Material

MATERIAL LIST

New View

MATERIAL DETAILS

SELECTION	MATERIAL CODE	NAME	MATERIAL TYPE	ITEM TYPE	ACTION
<input type="checkbox"/>	10010	Fan Blead	Aluminium casting	1	
<input type="checkbox"/>	10011	Rotary Shaft	CI casting	1	

Import To Excel

9) Material Add:

MATERIAL DETAILS

Item Name	Unit	
Aluminium Fan	5	
Item Type	Material Type	
Purchase Or Own Production	Aluminium casting	
Material Specification		
Air Condition fan use		
Material Weight	Casting Weight	Finished Weight
110	200	105
Material Rate	Casting Rate	Finished Rate
11000	8000	11700

Submit **Cancel**

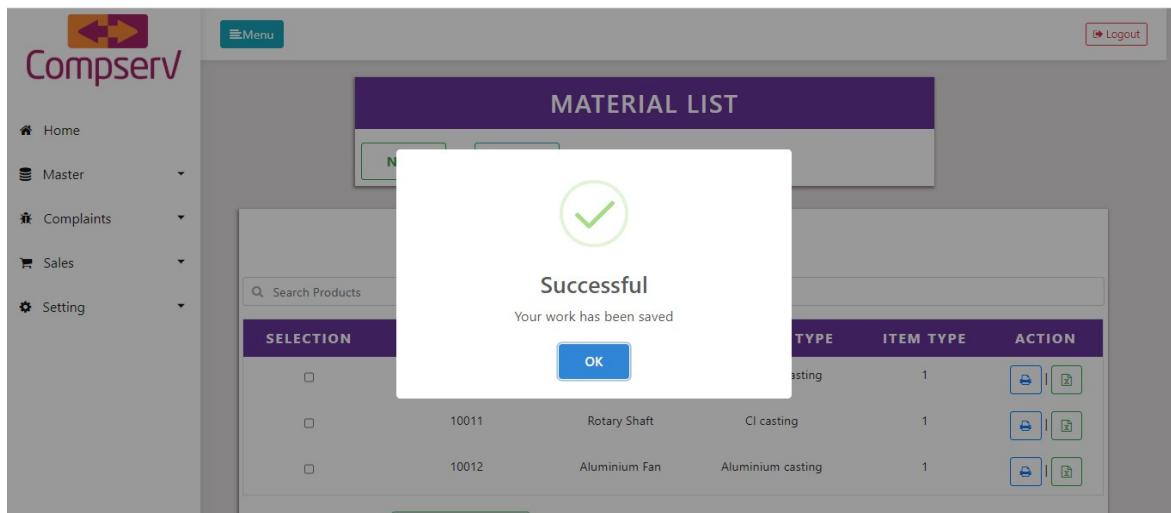
10) Material Weight Validation:

MATERIAL DETAILS

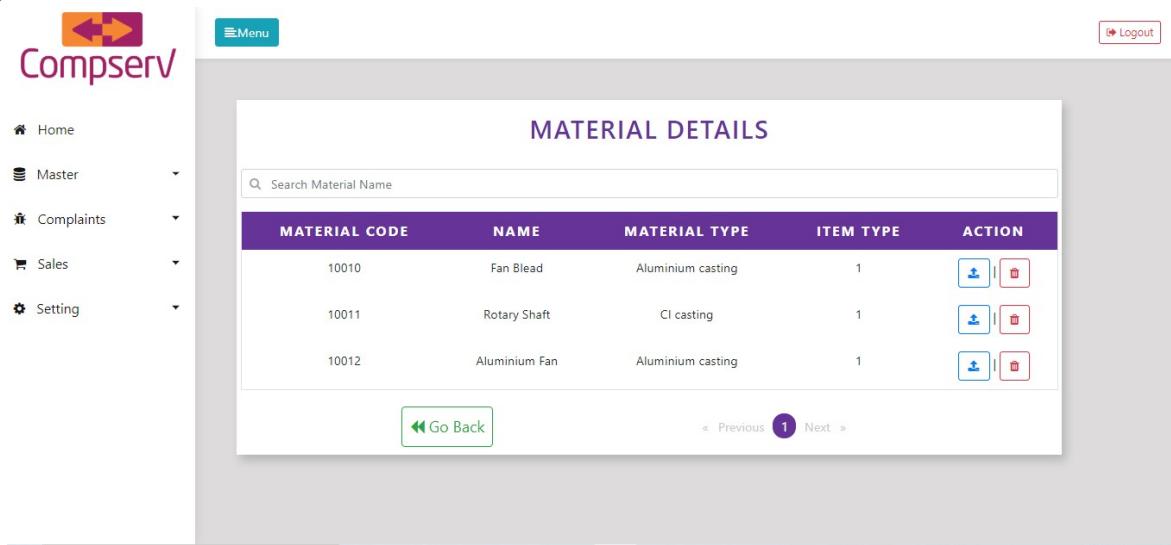
Item Name	Unit	
Icon Casting	66	
Item Type	Material Type	
Job Work Machining	CI casting	
Material Specification		
Icon Casting		
Material Weight	Casting Weight	Finished Weight
60	70	66
Material Rate	Casting Rate	Finished Rate

Submit **Cancel**

11) Material Add



12) Material Details List



13) Material Update:

MATERIAL DETAILS
MATERIAL ID :10010

- Item Name: Fan Blead
- Unit: 38
- Item Type: Purchase Or Own Production
- Material Type: Aluminium casting
- Material Specification: Aluminum Fan Use
- Material Weight: 28
- Casting Weight: 30
- Finished Weight: 25
- Material Rate: 300
- Casting Rate: 170
- Finished Rate: 280

Update

14) Defects Details:

DEFECT

New View

DEFECT DETAILS

DATE	CUSTOMER NAME	PRODUCT NAME	REJECTION QUANTITY	ACTION
13-07-2020	Bhudan iron works	Fan Blead	50	
13-07-2020	Dinesh Tools	Fan Blead	40	

Export To Excel

« Previous **1** Next »

15) Complaints From:

The screenshot shows the 'COMPLAINT FORM' section of the CompServ system. The form includes fields for Date (13/07/2020), Customer Name (Mahalaxmi Metal Works), Product Name (Fan Blead), Rejection Quantity (50), Mode of Complaints (Email), Nature of Complaints (Damage Blead), and Remark (Right side and loose the nuts). There are 'Save' and 'Cancel' buttons at the bottom.

16) Add Complaints:

The screenshot shows the 'DEFECT' section of the CompServ system. A modal window displays a green checkmark icon and the text 'Successful' with the message 'Your work has been saved'. The background shows a table with columns for DATE, REJECTION QUANTITY, and ACTION, containing data for 13-07-2020 and 50. There is also an 'Export To Excel' button and navigation links for 'Previous' and 'Next'.

17) Complaints Details

The screenshot shows a web-based application interface for 'Compserv'. At the top left is the logo 'Compserv' with a double arrow icon. On the top right are 'Menu' and 'Logout' buttons. The main content area has a title 'DEFECT DETAILS' and a search bar 'Search Defect Name'. Below is a table with the following data:

DATE	CUSTOMER NAME	PRODUCT NAME	REJECTION QUANTITY	REMARK
13-07-2020	Dinesh Tools	Fan Blead	40	Reject

At the bottom left is a 'Back' button, and at the bottom center is a page navigation bar with 'Previous', a page number '1', and 'Next'.

18) Monitoring Page:

The screenshot shows the 'MONITORING' page of the Compserv application. At the top left is the 'Compserv' logo. On the top right are 'Menu' and 'Logout' buttons. The main content area features a purple header bar with the word 'MONITORING'. Below it are three rectangular buttons with rounded corners: 'New' (green), 'View' (red), and 'Working Complete' (light blue).

19) Monitoring New Complaints List:

TRAN No	Date	Customer Name	Product Name	Rejection Quantity	Remark	Action
100003	13-07-2020	Bhudan iron works	Fan Blead	50	adasdsad	
100004	13-07-2020	Dinesh Tools	Fan Blead	40	asdasd	

20) Action On Monitoring Defects

21) Monitoring Defects list:

TRAN No	Date	Customer Name	Product Name	Rejection Quantity	Remark	Action
100003	13-07-2020	Bhudan iron works	Fan Blead	50	adasdsad	
100004	13-07-2020	Dinesh Tools	Fan Blead	40	asdasd	

22) Monitoring Solve List:

TRAN No	Date	Customer Name	Product Name	Rejection Quantity	Remark	Action
100003	13-07-2020	Bhudan iron works	Fan Blead	0	Reject	

**ANNEXURE 2 : USER INTERFACE SCREENS
(REPORT SCREENS)**

1) Customer Report in pdf:

Bhudan iron worksCustomer.pdf

1 / 1

BWAYS ERP PVT LTD
COMPESERV HOUSE, C.S.NO.555/3/I, 2A/2B,
'E' WARD, RAJENDRA NAGAR, KOLHAPUR - 416004, NEAR RAJENDRA NAGAR WATER TANK

CUSTOMER DATA

Customer ID : 100010001
Customer Name : Bhudan iron works
Short Name : Bhudan
Address : Y.P power nagar kolhapur
City : Pune
Phone Number : 9822404665
Email : Bhudan@gmail.com

2) Customer Report in Excel:

A	B	C	D	E
1 #	Customer name	Phone Number	Address	Email
2	Bhudan iron works	9822404665	Y.P power nagar	Bhudan@gmail.com
3	Dinesh Tools	8810101642	Y p Power Nagar	dinesh@gmail.com
4	Indain Machine Tools & Hardw	8860601215	Y P power Nagar	indainmachine@gmail.com
5	Mahalaxmi Metal Works	8881136260	Shiroli MIDC kolh	Mahalaxmi@gmail.com
6	Micrometal Indutries	9855001616	Kolhapur	Micrometals@gmail.com
7	VK Industries	9860363612	Yp Power Nager	vk@gmail.com
8	Nishnath Industries	232662132	Kagal MIDC, Kolh	nishnath12@gmail.com
9				
10				
11				
12				
13				
14				

3) Material Report in pdf:

MATERIALS DATA	
Material ID	10010
Material Type :	Aluminium casting
Material Name :	Fan Blead
Material Specification :	Aluminimin Fan Use
Material Weight :	28
Casting Weight :	30
Finished Weight :	25
Material Rate :	300
Casting Rate :	170
Finished Rate :	280

4) Material Report in Excel:

	A	B	C	D	E	F
1	Material CODE	Name	Material Type	Item Type		
2	10010	Fan Blead	Aluminium casti	1		
3	10011	Rotary Shaft	Cl casting	1		
4	10012	Aluminium Fan	Aluminium casti	1		
5	10013	Icorn Casting	Cl casting	2		
6						

5) Complaints Report in Pdf:**6) Complaints Reports in Excel:**

	A	B	C	D	E	F	G
1	Date	Customer Name	Product Name	Rejection (Action)			
2	13-07-2020	Dinesh Tools	Fan Blead	40			
3							
4							
5							
6							
7							
8							
9							
10							

7) Complaints Solve Report in Excel:

	A1	Date	Customer Name	Product Name	Rejection Quant	Remark	Action		
1	TRAN No								
2	100003	13-07-2020	Bhudan iron works	Fan Blead	0	Reject			
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									