PROJECT MANAGEMENT SYSTEM

A Project-II Report

Submitted in partial fulfillment of requirement of the

Degree of

BACHELOR OF TECHNOLOGY in COMPUTER SCIENCE & ENGINEERING

BY
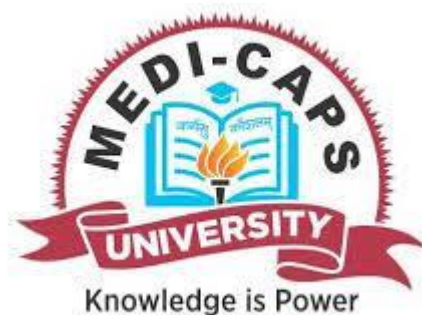**Pallavi Karma**
EN17CS3L1003

Under the Guidance of
Internal Guide:
Prof. Sachin Solanki
External Guide:
Mr. Rishabh Gupta

Department of Computer Science & Engineering
Faculty of Engineering
MEDI-CAPS UNIVERSITY, INDORE- 453331

JAN-JUNE 2020

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Report Approval

The project work **"Project Management System"** is hereby approved as a creditable study of an engineering subject carried out and presented in a manner satisfactory to warrant its acceptance as prerequisite for the Degree for which it has been submitted.

It is to be understood that by this approval the undersigned do not endorse or approved any statement made, opinion expressed, or conclusion drawn there in; but approve the "Project Report" only for the purpose for which it has been submitted.

Internal Examiner
Name:
Designation
Affiliation

External Examiner
Name:
Designation
Affiliation

<u>Declaration</u>

I hereby declare that the project entitled **"Project Management System"** submitted in partial fulfillment for the award of the degree of Bachelor of Technology in 'Computer Science & Engineering' completed under the supervision of **Mr. Sachin Solanki, Associate Professor ,** Faculty of Engineering, Medi-Caps University Indore is an authentic work.

Further, I declare that the content of this Project work, in full or in parts, have neither been taken from any other source nor have been submitted to any other Institute or University for the award of any degree or diploma.

<div align="right">

_____

Pallavi Karma

EN17CS3L1003

</div>

Date: _____

Certificate

I, **Mr. Rishabh Gupta** certify that the project entitled **"Project Management System"** submitted in partial fulfillment for the award of the degree of Bachelor of Technology by **Pallavi Karma** is the record carried out by her under my guidance and that the work has not formed the basis of award of any other degree elsewhere.

_____ _____

Prof. Sachin Solanki   Mr. Rishabh Gupta

Computer Science & Engineering   Project Supervisor

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<u>Acknowledgements</u>

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Abstract

As technology advances using Computer become very important as it reduces time and effort as compared to humans. It plays a major role in any organization to fulfill all the requirements. Thus having a system that can perform all the major tasks of the organization is a must that will make less error and will move towards advancement and automation.

As they needs to have a useful and stunning website to interact with their department and use as a medium to interact within the organization .project management system has 3 parts Admin view client view and team member view,. There was no such specific website for managing all the 3 parts under a single system so being an intern over there it was assigned to us to create such system Assigning task to team member getting progress report of work on dashboard and client can also check the performance can be the major advantages of this system. On this project we will develop a system for their organization. On this report almost every details that is necessary has been discussed. Every possible disclosures has been made to cover maximum areas of the project.

This report can be amended and changes can be made upon request from the stakeholders. The work will be done by a team with a supervisor from faculty member. A formal training phase is included in the project to train faculty members and office staffs on how to handle the website. Overall a useful website can be really helpful for the department.

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Chapter-1

Introduction

1.1 Introduction

As technology advances using Computer become very important as it reduces time and effort as compared to humans. It plays a major role in any organization to fulfill all the requirements. Thus having a system that can perform all the major tasks of the organization is a must that will make less error and will move towards advancement and automation.

This system was developed for the internal use of their company as they are having multiple production units at different cities so they face difficulty in a collaboration that how work will be carried out, So to align both the teams at different places, assigning jobs to teams and to check the performance can be the major advantages of this system. On this project, we will develop a project management system on this report almost every detail that is necessary has been discussed. Every possible disclosure has been made to cover the maximum areas of the project.

1.2 Objective

Our main aim was to combine our both the teams of different cities by a system in which we can plan our task, assign a task and can check the progress of the task is just simple step.
It will reduce the time and energy in printing the papers and maintaining all the records

Some other objectives of the System include:

1. **Ease of work:**   This objective is to stop all the manual working of the documentation like maintaining project log and record and all the details of project it will help them to save time energy and resources.

2. **Automation:**   Nowadays automation in the industry is must, this system tracks on the overall performance of the project and you can see it on dash board so you don't need to call all the team leader to check the progress and in this you also have a feature to have audio/video call.

1.3   Organization / Introduction About The Industry

Incorporated in 2002, our Company M/s. AgroPhos (India) Limited is an ISO 9001:2008 certified Company engaged in the manufacturing of fertilizers such as Single Super Phosphate (SSP), Nitrogen Phosphate and Potassium (NPK), Zinc Sulphate, Organic manure and Calcium Sulphate commonly known as soil conditioner or gypsum. Our Company also undertakes trading of Diammonium Phosphate (DAP), Urea, Ammonium Sulphate and other fertilizers depending upon the demand of the customer.

1.4   Source of Data

In this project all the sources of data to build the project was collected within the organization as it was purely internal project so the requirement to build the project is also collected within the organization. The basic way to collect the data was internal team survey and interviewing the managers and identifying the correct profile for the interview.

Chapter-2
System Requirement Analysis

2.1 Information Gathering

The goal of this phase is to understand your customer and plan the things according to their need that is:-

- Define the workflow
- Time requirement
- Resource requirement
- Manpower requirement
- Budget

After getting information all these research work starts which includes understanding your customer, searching and gathering information about their business, understand their work mechanism and work order all these research activities include

- Identify the correct profile to interview.
- Talking to all the mangers in the company about their work.
- Surveys
- Observations

2.2   Development & Deployment Tools

2.2.1 Hardware Requirement

- RAM:256 MB(Minimum)
- Processor:800MHz Intel Pentium III or equivalent
- Hard-Disk: 50MB or more.
- Internet access.

2.2.2 Software Requirement

- Operating System: Windows
- Web Browser: Mozilla Firefox, Chrome, Microsoft Edge, IEs.
- Sublime Text Editor.

2.2.3 Technology Used

- HTML5
- CSS
- Bootstrap
- JavaScript
- MySQL
- PHP
- UX Design

2.3   Functional & Non-Functional Requirements

2.3.1 Functional Requirements

1. The application provides a dashboard, homepage, using HTML and Bootstrap framework.
2. The application enables them to assign the task and manage the task and manage the project work in the organisation.
3. Performance tracker and Report generator in system

2.3.2 Non-Functional Requirements

2.3.2.1 Performance Requirements:

1. The web server must be able to handle and support multiple instances of application.
2. Progress Analyser in system
3. Minimum time should be taken by the application to display the web pages.
4. In case of power failure, the data should be stored in the state that was last saved by the user.

2.3.2.2 Safety Requirements

1. If there is extensive damage to a wide portion of the database due to catastrophic failure, such as a disk crash, the recovery method restores a past copy of the database that was backed up to archival storage (typically tape) and reconstructs a more current state by reapplying or redoing the operations of committed transactions from the backed up log, up to the time of failure.

Chapter 3

System Analysis

3.1 Information flow representation

In this phase, we analysis the collected data and categorize them according to the problem statement.

We used this information to arrive at the following conclusion.

They need a system which can integrate all their teams.

Can divide the work in between the teams.

Assign Team and team leader directly.

Client adding feature

Check performance directly from the system.

Check progress of task – To-do list, In-Progress Task

Direct sending of reports and necessary documents through system.

UML

UML stands for Unified Modeling Language is the successor to the wave of Object Oriented Analysis and Design (OOA & D) methods that appeared in the late 80 ' s most directly unifies the methods of Booch , Rum Baugh (OMT) and Jacobson . The UML is called a modeling language, not a method. Most methods consist at least in principle of both a modeling language and a process. The Modeling language is that notation that methods used to express design Notations and Meta - models: The notation is the graphical stuff, it is the syntax of the modeling language. For instance, class diagram notation defines how items are concepts such as class association, and multiplicity is represented. Virtually every method has included some variation on this technique.

3.1.1 ER Diagram

The ER or (Entity Relational Model) is a high-level conceptual data model diagram. Entity-Relation model is based on the notion of real-world entities and the relationship between them.

ER modeling helps you to analyze data requirements systematically to produce a well-designed database. Entity relationship diagram displays the relationships of entity set stored in a database. In other words, we can say that ER diagrams help us to explain the logical structure of databases. At first look, an ER diagram looks very similar to the flowchart. However, ER Diagram includes many specialized symbols, and its meanings make this model unique.

This model is based on three basic concepts:

1. Entities
2. Attributes
3. Relationship

Entity: An entity can be place, person, object, event or a concept, which stores data in the database. The characteristics of entities are must have an attribute, and a unique key. Every entity is made up of some 'attributes' which represent that entity.

Relationship: It is nothing but an association among two or more entities. E.g., Tom works in the Chemistry department.

Attributes: It is a single-valued property of either an entity-type or a relationship-type.

ER- Diagram Notations

ER- Diagram is a visual representation of data that describe how data is related to each other.

2   Rectangles: This symbol represent entity types
3   Ellipses : Symbol represent attributes
4   Diamonds: This symbol represents relationship types
5   Lines: It links attributes to entity types and entity types with other relationship types
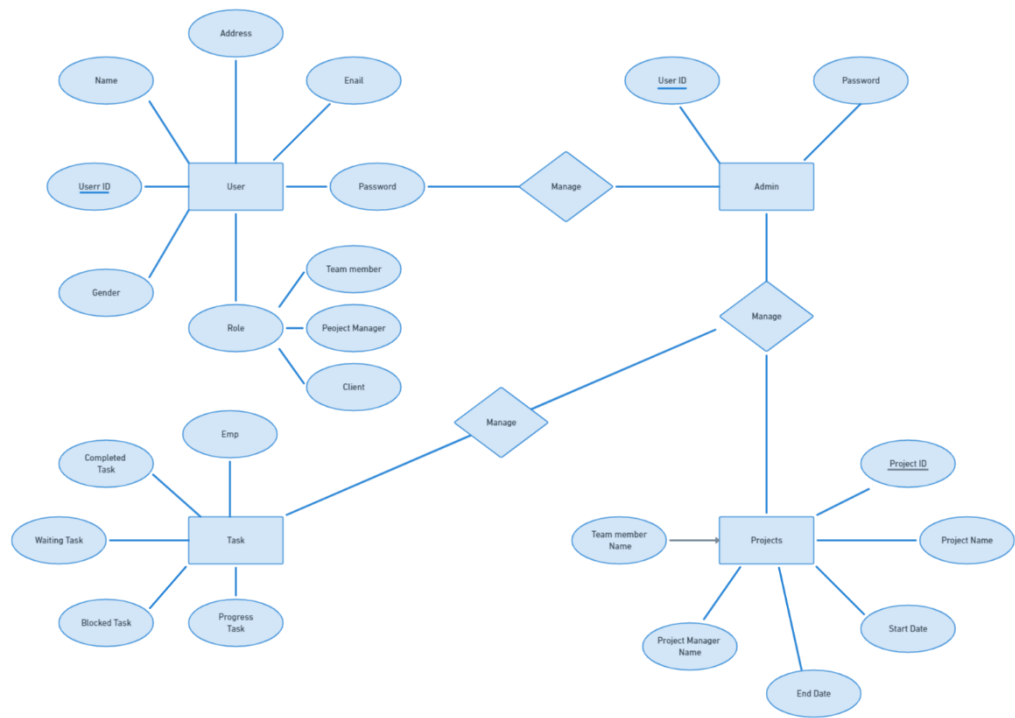6   Primary key: attributes are underlined

Fig. ER Diagram

3.1.2 Data Flow Diagram

Also known as DFD, Data flow diagrams are used to graphically represent the flow of data in a business information system. DFD describes the processes that are involved in a system to transfer data from the input to the file storage and reports generation.

Data flow diagrams can be divided into logical and physical. The logical data flow diagram describes flow of data through a system to perform certain functionality of a business. The physical data flow diagram describes the implementation of the logical data flow. The DFD may be used to perform a system or software at any level of abstraction.

In fact, DFDs may be partitioned into levels that represent increasing information flow and functional detail. Levels in DFD are numbered 0, 1, 2 or beyond. Here, we will see primarily three levels in the data flow diagram, which are: 0-level DFD, 1-level DFD, and 2-level DFD.

0-level DFD: It is also known as fundamental system model, or context diagram represents the entire software requirement as a single bubble with input and output data denoted by incoming and outgoing arrows. Then the system is decomposed and described as a DFD with multiple bubbles.

1-level DFD: In 1-level DFD, a context diagram is decomposed into multiple bubbles/processes. In this level, we highlight the main objectives of the system and breakdown the high-level process of 0-level DFD into sub processes.

2-Level DFD: 2-level DFD goes one process deeper into parts of 1-level DFD. It can be used to project or record the specific/necessary detail about the system's functioning.

DFD Symbols

There are four basic symbols that are used to represent a data-flow diagram.

1. Process: A process receives input data and produces output with a different content or form. Processes can be as simple as collecting input data and saving in the database, or it can be complex as producing a report containing monthly sales of all retail stores in the northwest region.

2. Data Flow: A data-flow is a path for data to move from one part of the information system to another. A data-flow may represent a single data element such the Customer ID or it can represent a set of data element (or a data structure).

3. Data Store: A data store or data repository is used in a data-flow diagram to represent a situation when the system must retain data because one or more processes need to use the stored data in a later time.

4. External Entity: An external entity is a person, department, outside organization, or other information system that provides data to the system or receives outputs from the system. External entities are components outside of the boundaries of the information systems. They represent how the information system interacts with the outside world.

- A rectangle represents an external entity
- They either supply data or receive data
- They do not process data

DFD rules

1. Each process should have at least one input and an output.
2. Each data store should have at least one data flow in and one data flow out.
3. Data stored in a system must go through a process.
4. All processes in a DFD go to another process or a data store
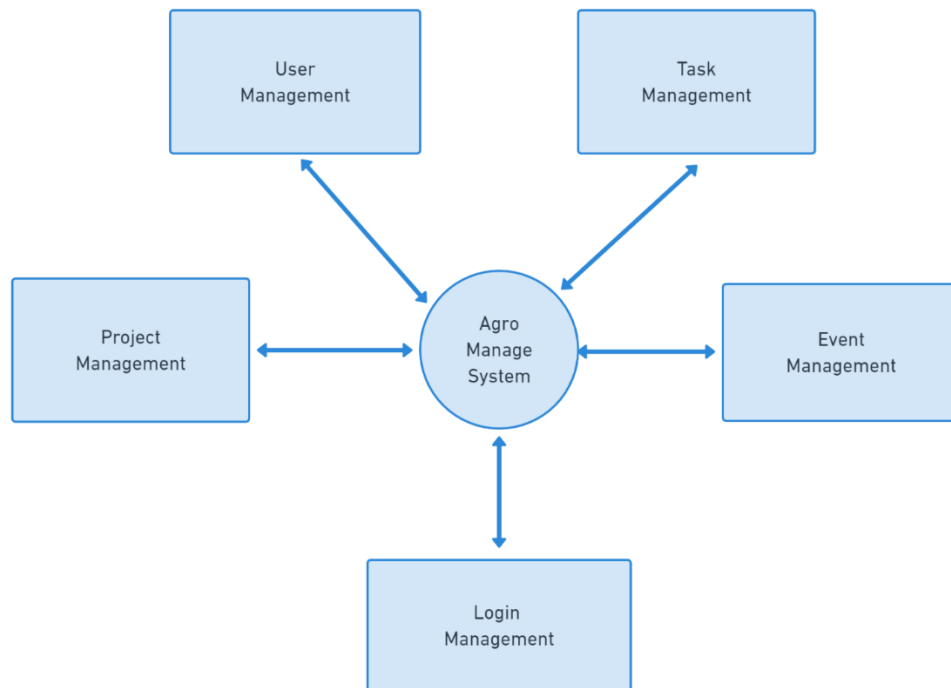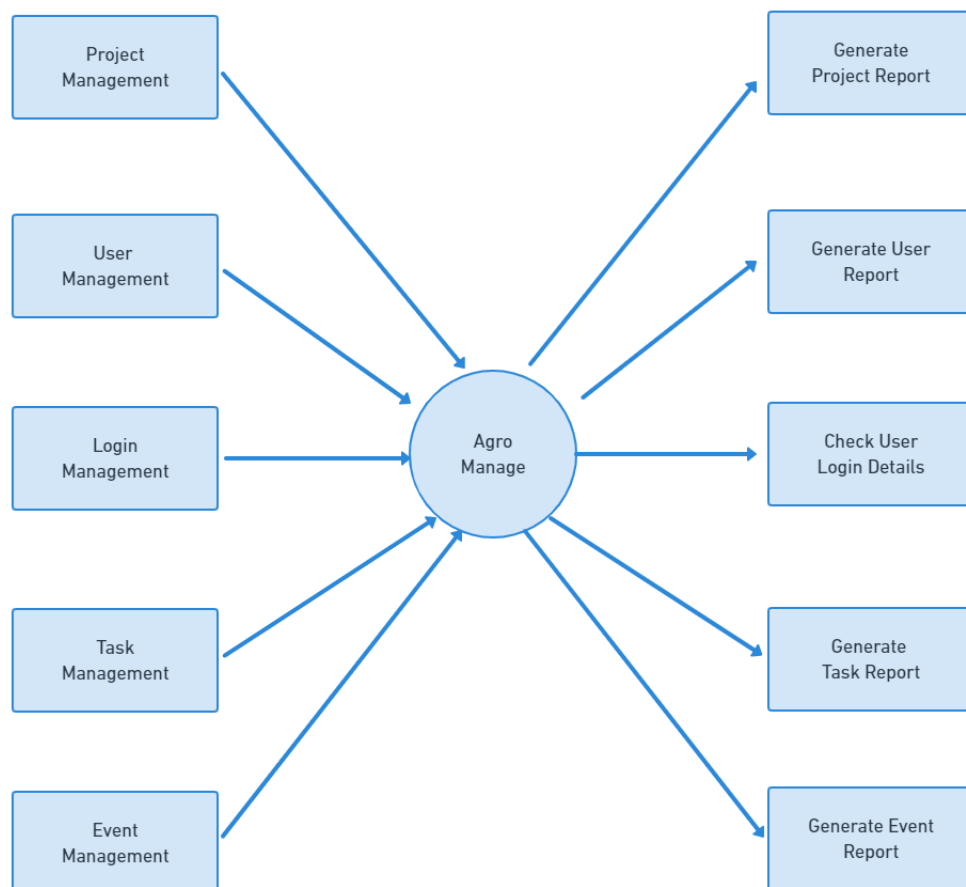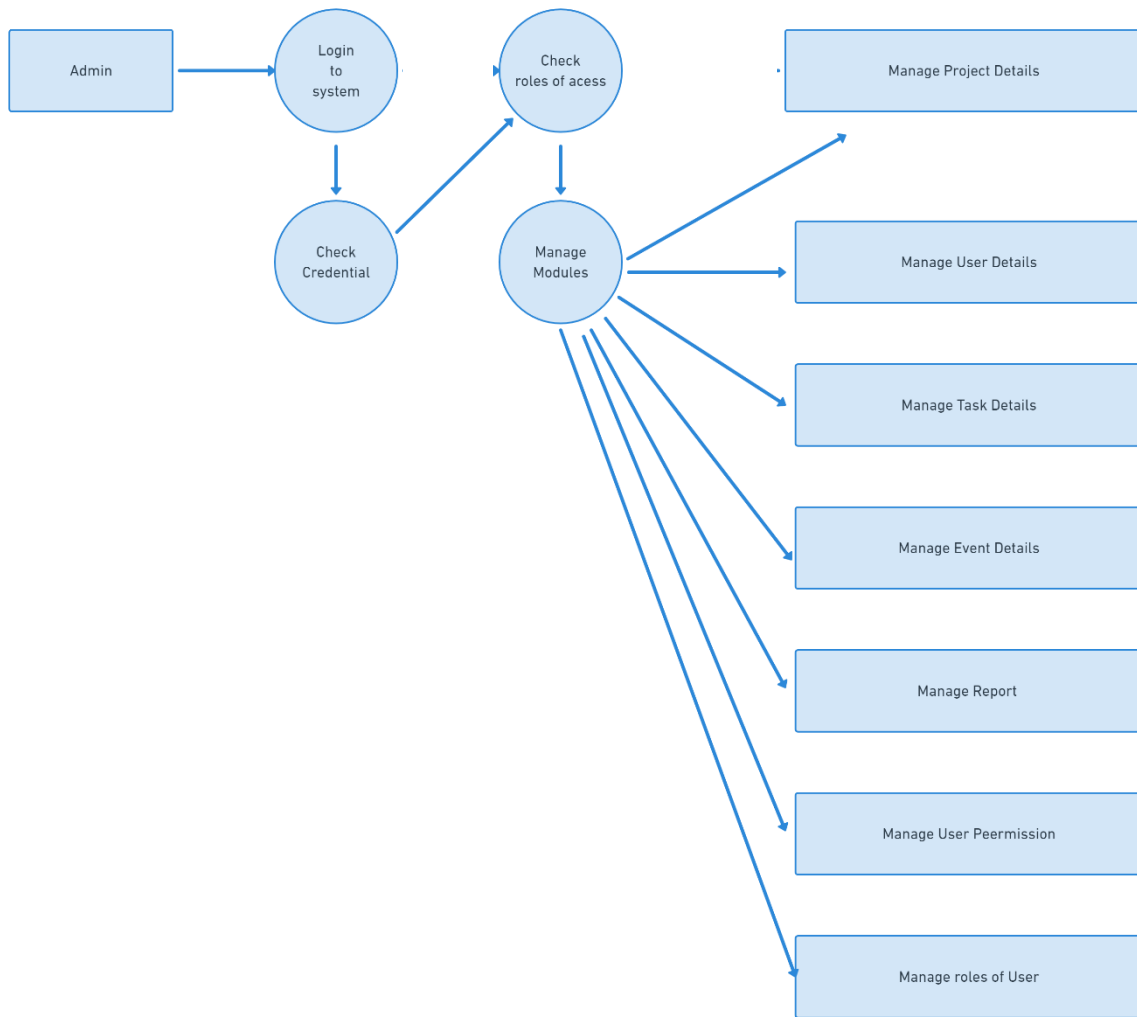
Fig. Zero Level Data Flow Diagram- Project Management System

First Level DFD- Project Manage System

Second Level DFD- Project Manage System

Chapter-4

Projects Assigned

4.1 Projects Assigned

- **Project management System**

- Assigning jobs to teams and to check the performance is the major advantages of this system. We have develop a project management system On this System almost every detail that is necessary has been build

- **Web based dashboard Development**
  Web based dashboard also made as this was in designing phase.

4.2 Tools & Technology Used

The technologies used during the internship are as follows –

- **HTML**
  HTML stands for Hyper Text Markup Language. It is the only markup language for creating web pages. HTML consists of a series of elements like some titles, headings, paragraphs, lists, table, embedded images, etc. to describe the structure of text-based information in HTML documents.

- **CSS**
  CSS stands for Cascading Style Sheets. It is a style sheet language used to describe the presentation of a document written in HTML or XML. CSS describes how elements should be rendered on screen, on paper, in speech, or on other media. CSS saves a lot of work. It can control the layout of multiple web pages all at once.

- **Bootstrap**
  Bootstrap is the most popular HTML, CSS and JavaScript framework for developing responsive, mobile-first website. Bootstrap is a free front-end framework for faster and easier

web development. Bootstrap includes HTML and CSS based design templates for performing various operations.

- **jQuery**

  JQuery is a JavaScript library designed to simplify HTML DOM tree traversal and manipulation, as well as event handling, CSS animation, and Ajax. It is free, open- source software using the permissive MIT License.

- **MySQL**

  MySQL is a freely available open source Relational Database Management System (RDBMS) that uses Structured Query Language (SQL). SQL is the most popular language for adding, accessing and managing content in a database. It is most noted for its quick processing, proven reliability, ease and flexibility of use.

- **PHP**

  PHP is a server side scripting language. That is used to develop Static websites or Dynamic websites or Web applications. PHP stands for Hypertext Pre-processor, that earlier stood for Personal Home Pages. PHP scripts can only be interpreted on a server that has PHP installed.

4.3 Work Done & Observations

4.3.3 Project Management System (Agro Manage)

During the period of internship. The task was assigned to create a Project management system. We have developed that design using UX approach.
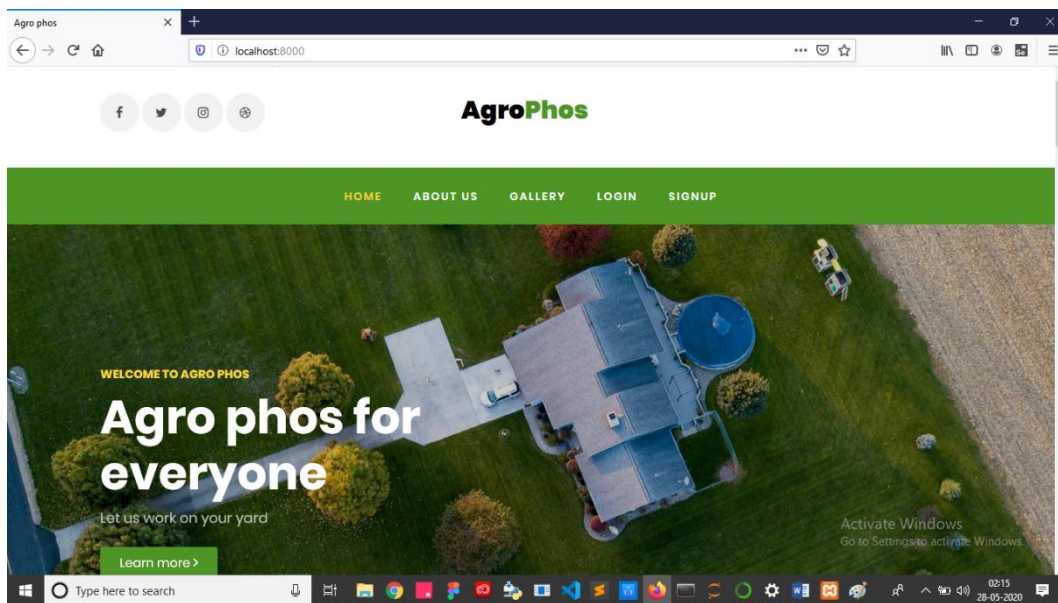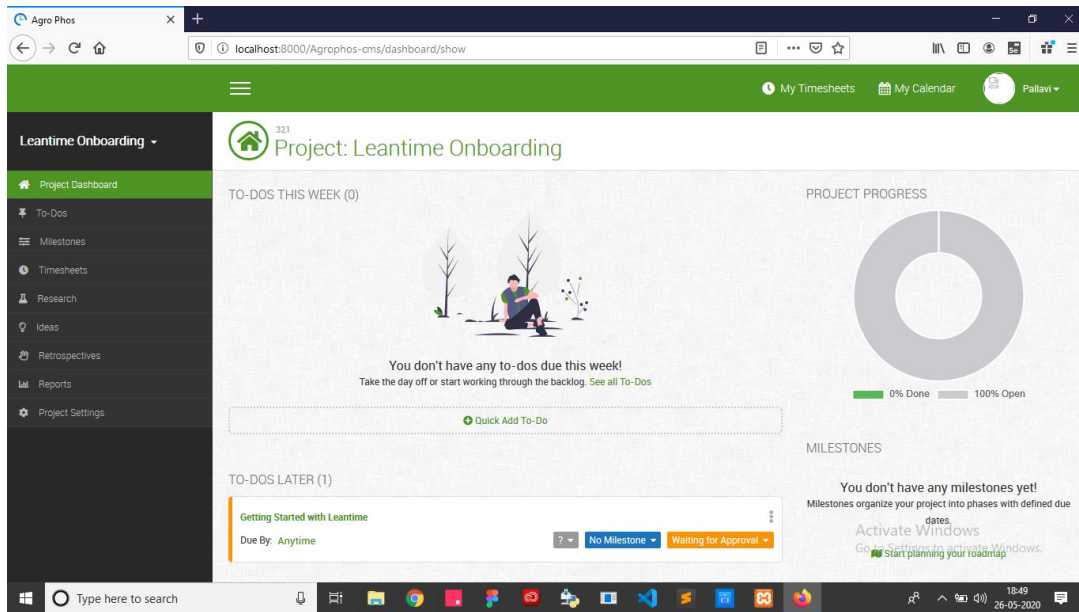

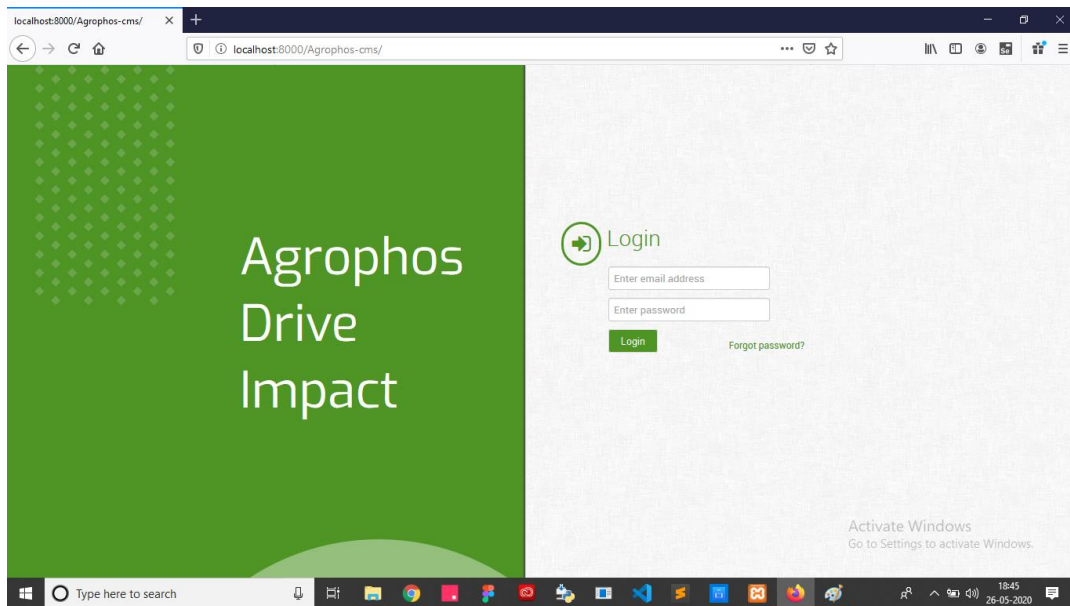Figure 4.1 Home Page

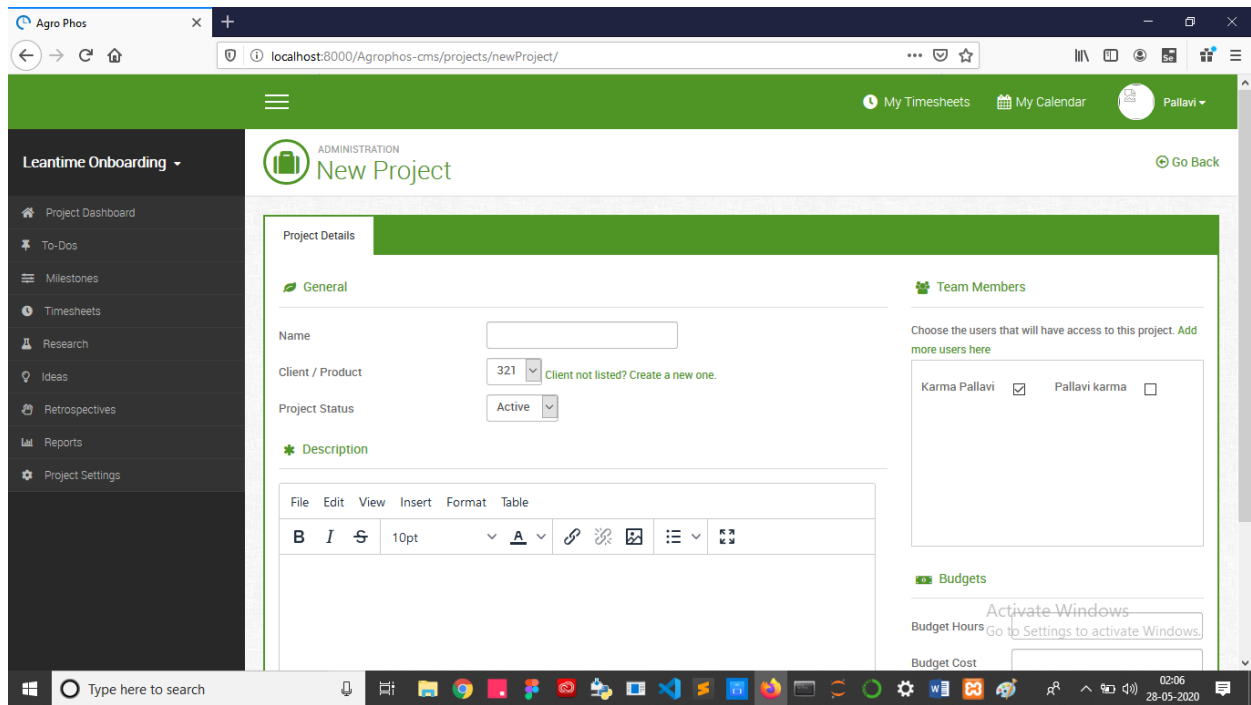Figure 4.2 Project Dashboard

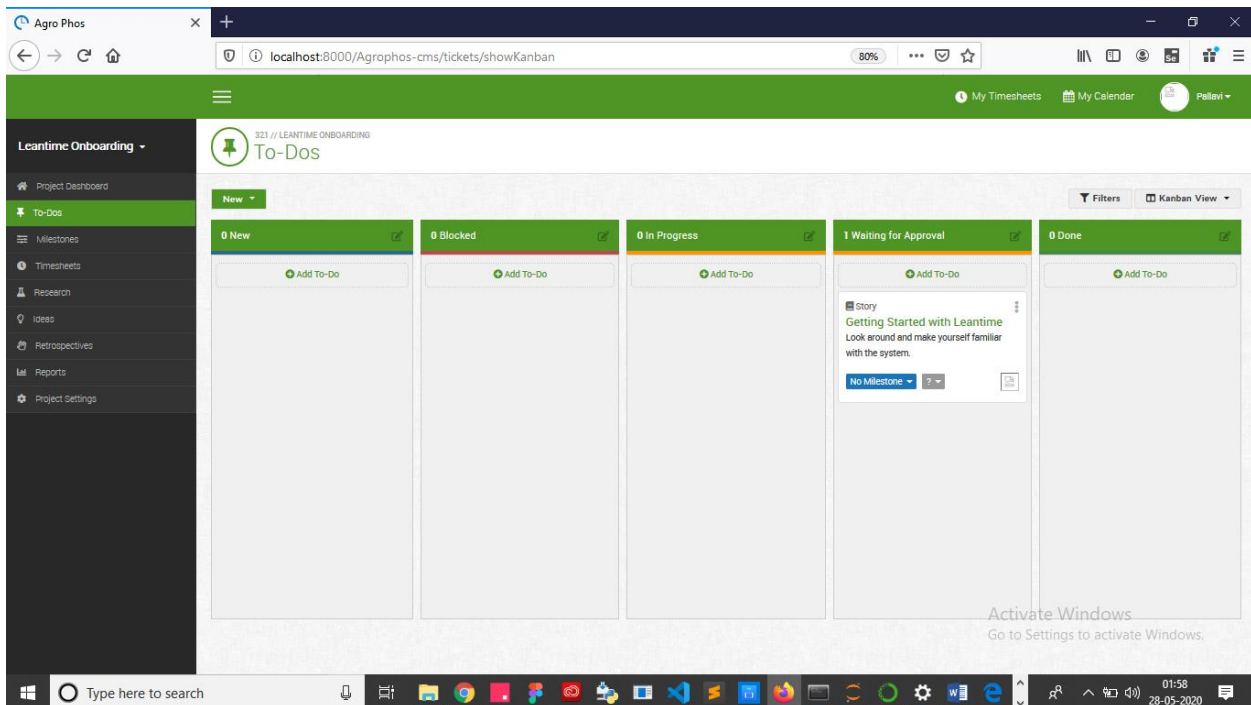Figure 4.3 Login

Figure 4.4 Create new project
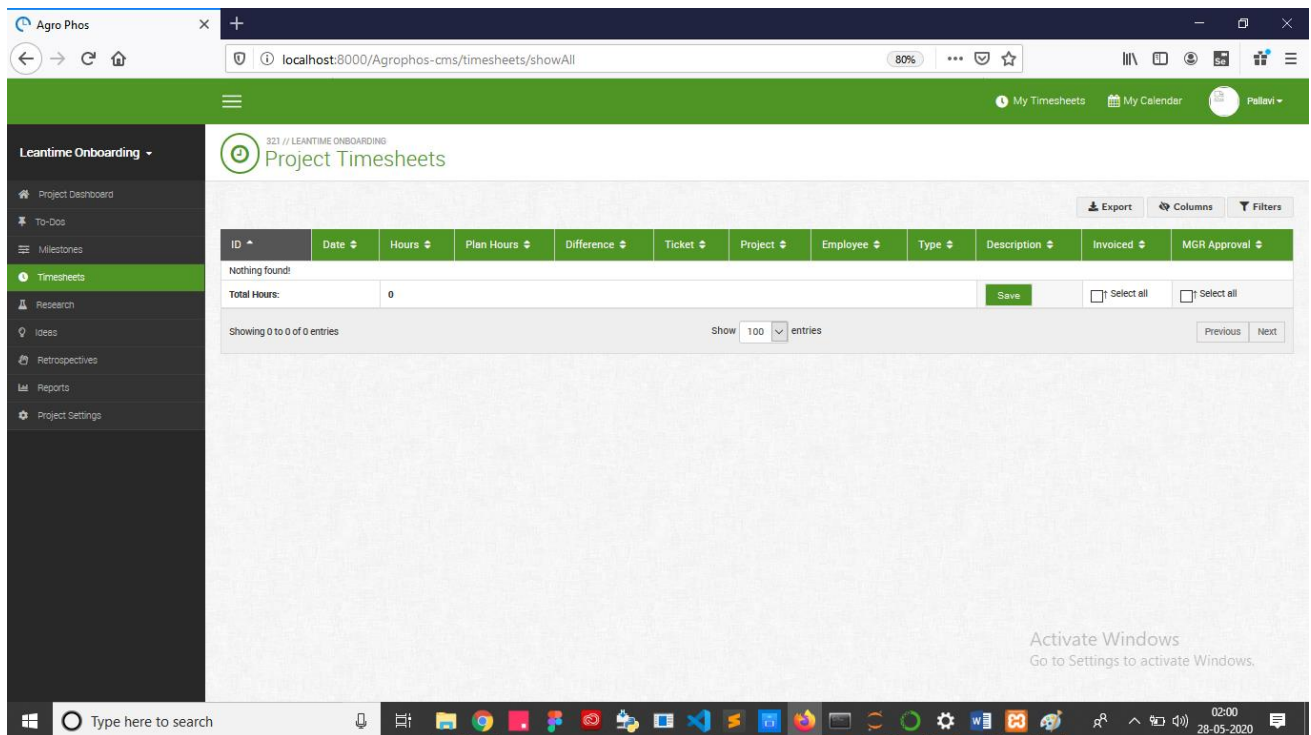

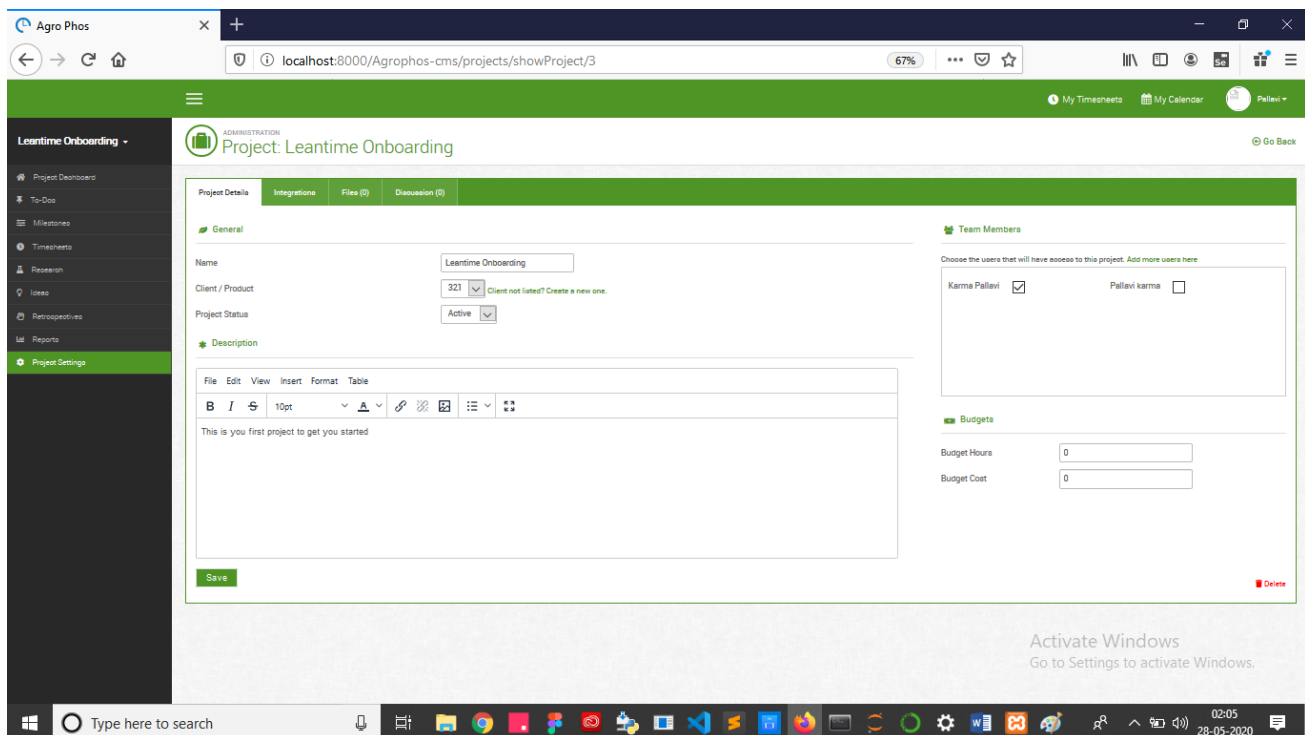Figure 4.5 To-Do

Figure 4.6 Timesheet
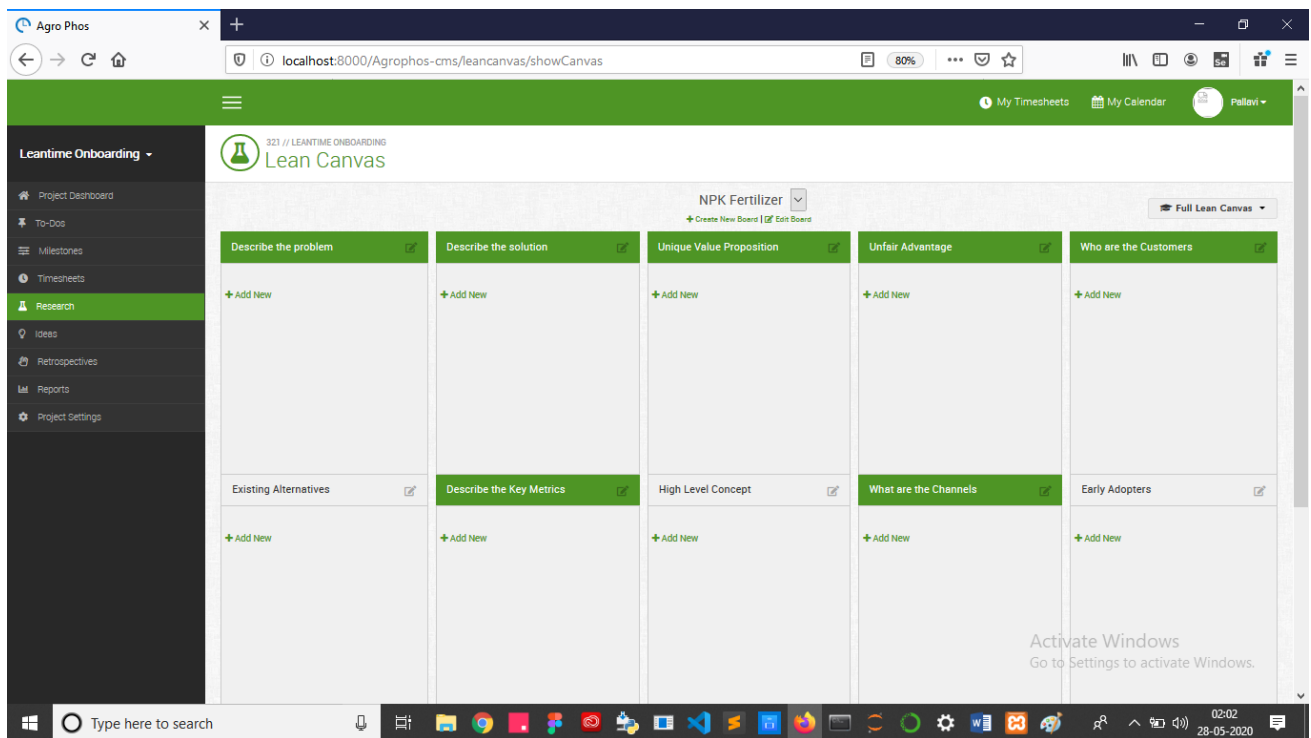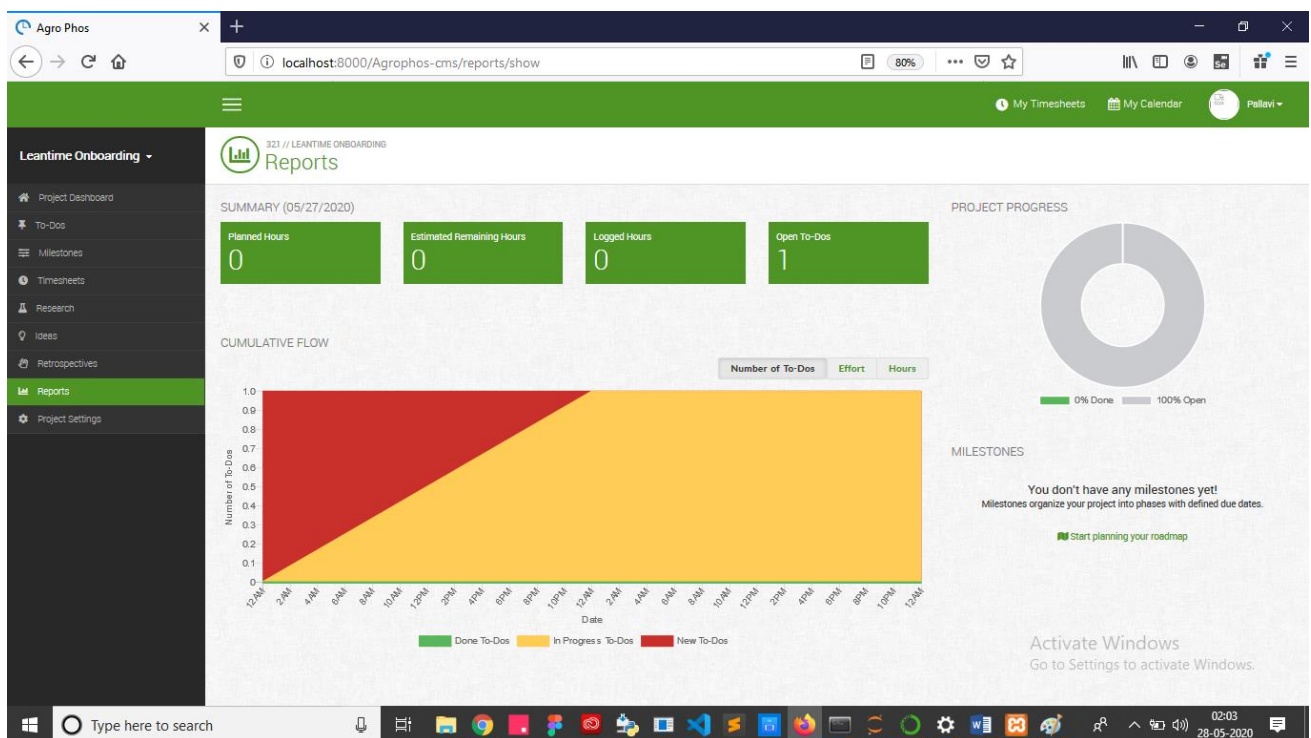

Figure 4.7 Project Setting

Figure 4.8 Research

Figure 4.9 Reports

Figure 2.10 User Management

4.3.3.1 Targeted Audience

Our targeted audience was the internal teams of the organization which was in two parts at different part one was in Dewas M.P and another one was at Meghnagar M.P both the places have same teams and half work is done in Dewas and the other half is done at Meghnagar so to merge both the team at one place this system is built.

4.3.3.2 Website Specific Variable:

Home

This feature displays the home screen of the project from which we can navigate to other features.

About Us

This option shows the details about the company.

Login

This feature is used for logging in to the system where we can access all the information about the project

Project Dashboard

This feature shows the overall growth of the project at a single place that is pending what is the percentage of project completion. People currently working on it how many products shipped how many are under manufacturing all this information is shown on the dashboard.

To-Dos

This feature is used to show which task got the approval, what all are pending tasks and what all are rejected one all these things will be shown in this feature.

Milestone

This feature includes project plan what all the team member, time duration to complete the project, whom all are assigned as managers for this task all this information are recorded in this feature plan.

Research

This feature is to add some points in the project or need to any such inputs in between the project.

Ideas

To suggest some changes or need to add some points in the project to make it easy.

Retrospective

This feature is t check the past details of the project, that who edited that who worked on this project what all works are done before

Reports

To generate all types of report and to view the progress in all types of reports this feature is used.

Project Setting

To changes the setting or in between addition of the project or disclosures of things before the time is done under this feature. This is also used to assign and delete the team member from project or can change the date and delivery time and details any time. Only admin has it access.

Signup

This feature is for signing up or can say for the new registration

Chapter-5
Testing

A crucial part of any software development lifecycle is testing. This involves carrying out certain procedures and operations to understand the limitations of the software. It is evident that with testing the constraints of the application that particular bugs and errors are picked up and documented through test cases. This will improve the overall standard and quality of the project and enhance the user experience.

5.1 Testing Objective

- Testing is a process of executing a program with the intent of finding an error.
- A good test case is one that has a high probability of finding an undiscovered error.

5.2 Testing Scope

It can be further used for automatically recommending the faculties to the students according to the interest of the student in a particular course(s) / subject(s).

5.3 Testing Principles

- All tests should be traceable to customer requirements.
- Tests should be planned long before testing begins.
- Testing should begin "in the small" and progress toward testing "in the large".

5.4 Testing Methods Used

5.4.1 Unit Testing

Unit testing focuses verification efforts on the smallest unit of software design of module. This is also known as "Module Testing". Acceptance of package is used for computerization of module. Machine Utilization was prepared and approved by the project leader. In this testing step, each module is found to be working satisfactory as regards to the expected output from the module. The suggested changes were incorporated into the system. Here each module in the Machine Utilization has been tested.

'Our project is also divided in 3 main modules/parts, which are:

1. Admin   2. Client   3. Team Member

These 3 modules are tested separately.

5.4.2 Validation Testing

At the culmination of integration testing, software is completely assembled as a package; interfacing errors have been uncovered and corrected, and a final series of software tests - Validation testing - may begin.

Chapter 6

Future Scope

6.1 Future Scope

In a nutshell, it can be summarized that the future scope of the project circles around maintaining information regarding:

- We can give more advance for this system like face recognition attendance management including AI and ML.
- Integrate multiple load balancers to distribute the loads of the system.
- Create the master and slave database structure to reduce the overload of the database queries.
- Implement the backup mechanism for taking backup of codebase and database on regular basis on different servers.
- We can create a separate module for accounting department.

The above mentioned points are the enhancements which can be done to increase the applicability and usage of this Project. Here we can maintain the records of Admin activity, Client activity and Team member activity Enhancement can be done to maintain all the 3 through the usage of AI and ML.

Chapter 7

Result & Conclusion

7.1 Result & Conclusion

The implementation of this system results in saving time and reduces the chances of error, this is because there is less human interaction and using this system reduces the chances of miscommunication as everything is added and processed through particular system.

They can easily check the performance and can report to the client and client can also check the progress of their project.

- Using this system will eventually save their time.
- Can use more main power in projects.
- Chances of miscommunication is very low.
- Transparency between client and company increases.
- Easy of accessibility and easy of performance tracking by using this system.

This system is under development phase and still need more changes according to the company and stake holders this system is just a small model if this success in their origination. They will try to expand this system and will deploy this.

Chapter-8

Learning after Training

8.1 Learning after Training

- I learned PHP Module which is server-side scripting language used to create the responsive web page and web application.
- I learned basic of UX Design Principal
- Learned to create MYSQL Database and how we can fetch information from it in real time and display it on webpage.
- Developed interpersonal skills and learnt to work in the organisation
- Got effective command in business communication.
- Learnt business ethics and functioning of business.

Chapter-9
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9.1 Bibliography

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