

# Indian Institute of Technology Roorkee



A Project Report

On

“Research Project Management System”

(Spark Internship Project - 2020)

## **Project Guide**

Prof. Sohom Chakrabarty

## **Submitted By**

Vaibhav Singh

Prateek Agarwal

# **Indian Institute of Technology Roorkee**

## **CERTIFICATE**

This is to certify that the project entitled “Research Project Management System” has been submitted to Prof. Sohom Chakrabarty, Indian Institute of Technology Roorkee for the completion of Spark 2020 Internship project under the guidance of Prof. Sohom Chakrabarty by the following students:

Vaibhav Singh (IIT Kharagpur)

Prateek Agarwal (IIT Roorkee)

Prof. Sohom Chakrabarty  
(Project Guide)

# **DECLARATION**

We, hereby declare that the project entitled “Research Project Management System” being submitted by us towards the completion of Spark 2020 internship is a project work carried by us under the supervision of Prof. Sohom Chakrabarty, and has not been submitted anywhere else.

We will be solely be responsible if any kind of plagiarism is found.

Date: /07/2020

Vaibhav Singh

Prateek Agarwal

# ACKNOWLEDGEMENT

The internship opportunity we had was a great chance for learning and professional development. Therefore, we consider ourselves as very lucky individuals as we were provided with an opportunity to be a part of it. We are also grateful for having a chance to meet so many wonderful people and professionals who led us through this internship period.

We are using this opportunity to express our deepest gratitude and special thanks to Prof. Sohom Chakrabarty who in spite of being busy with his duties, took time out to hear, guide and keep us on the correct path and allowing us to carry out the project and completing it successfully.

It is our radiant sentiment to place on record our best regards, deepest sense of gratitude to Prof. Sohom Chakrabarty sir for their careful and precious guidance which were extremely valuable for our project.

We perceive as this opportunity as a big milestone in our career development. We will strive to use gained skills and knowledge in the best possible way, and we will continue to work on their improvement, in order to attain desired career objectives.

Sincerely,

Vaibhav Singh

Prateek Agarwal

Place: Roorkee

Date: /07/2020

## ABSTRACT

Today with many ongoing research projects across the globe at different universities and colleges, there is a need for a tool which could help the community to manage their ongoing research projects. The era of information technology opens the window for the web applications. So, we are introducing 'App's Name', now more efficient, smarter and easier way—helping you save time and do more with your Research Projects.

In today's world there are many project management tools but this is a different one. One unique feature is that in any project, users are divided up into 4 types: Faculty, Lab-Incharge, Mentor and Team members. In this web app, all these user types are placed hierarchically in database and they are granted different level of permissions. One can create project and then he/she can invite people to join the project and assign them the user type. Here one can assign tasks and inventories to others based on hierarchy, share documents, fix meetings, interact with project members on inbuilt chat-box and discussion threads. Not only this, one can manage his/her own work by assigning a task to self, setting deadlines and reminders for himself, etc. 'App's Name' is a complete all in one solution for all universities and researchers to help them manage their research work efficiently and get more done with their research projects.

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# INTRODUCTION

Today with many ongoing research projects across the globe at different universities and colleges, there is a need for a tool which could help the community to manage their ongoing research projects. The era of information technology opens the window for the web applications. So, **we are** introducing 'App's Name', now more efficient, smarter and easier way—helping **you** save time and do more with your Research Projects.

In today's world there are many project management tools but this is a different one. One unique feature is that in any project, users are divided up into 4 types: Faculty, Lab-Incharge, Mentor and Team members. In this web app, all these user types are placed hierarchically in database and they are granted different level of permissions. One can create project and then he/she can invite people to join the project and assign them the user type. Here one can assign tasks and inventories to others based on hierarchy, share documents, fix meetings, interact with project members on inbuilt chat-box and discussion threads. Not only this, one can manage his/her own work by assigning a task to self, setting deadlines and reminders for himself, etc. 'App's Name' is a complete all in one solution for all universities and researchers to help them manage their research work efficiently and get more done with their research projects.



# Development Tools

## 1. Languages: HTML, CSS, CSS3, JavaScript, PHP

HTML- it defines the structure and layout of a Web document by using a variety of tags and attributes. Short for Hypertext Markup Language, the authoring language used to create documents on the World Wide Web.

CSS & CSS3- these are the languages for describing the presentation of Web pages, including colours, layout, and fonts. These allows one to adapt the presentation to different types of devices, such as large screens, small screens, or printers. CSS is independent of HTML and can be used with any XML-based markup language.

JavaScript- JavaScript is a text-based programming language used both on the client-side and server-side that allows you to make web pages interactive. Where HTML and CSS are languages that give structure and style to web pages, JavaScript gives web pages interactive elements that engage a user.



PHP- it 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 can be embedded in HTML, and it's well suited for web development and the creation of dynamic web pages for web applications, e-commerce applications, and database applications.

## 2. We made our Module with: PHP, MySQL

MySQL- MySQL is a relational database management system based on SQL – Structured Query Language. The application is used for a wide range of purposes, including data warehousing, e-commerce, and logging applications. The most common use for MySQL however, is for the purpose of a web database.

PHP Modules- PHP modules are extensions mostly written in C language. They can be compiled with PHP to enable static loading (as part of the binary file) or dynamic loading. There are different types of **modules** – core extensions, bundled extensions that are still part of the **PHP** package and fully external extensions.



### 3. Frameworks and Libraries: Bootstrap 4, jQuery

**Bootstrap-** Bootstrap is a framework to ~~helps in designing~~ websites faster and easier. It includes HTML and CSS based design templates for typography, forms, buttons, tables, navigation, modals, image carousels, etc.

**jQuery-** The purpose of jQuery is to make ~~it much easier to use~~ JavaScript on a website. jQuery takes a lot of common tasks that require many lines of JavaScript code to accomplish, and wraps them into methods that user can call with a single line of code.

### 4. Web Server: Apache Server

**Apache Server-** Apache is the most widely used web server software. Developed and maintained by Apache Software Foundation, Apache is an open source software available for free. It runs on 67% of all web servers in the world. Most WordPress hosting providers use Apache as their web server software.

### 5. Code Editor: Visual Studio Code

**VS Code-** Visual Studio Code features a lightning fast source code editor, perfect for day-to-day use. With support for hundreds of languages, VS Code helps users be instantly productive with syntax highlighting, bracket-matching, auto-indentation, box-selection, snippets, and more.

### 6. Web-Browser: Google Chrome/Microsoft Edge/Mozilla Firefox/Opera Mini/Safari/IE11



# FEATURES

There are 4 types of users ~~are there~~ in any project (faculty, lab in-charge, mentor and team members). All user types are placed hierarchically in database with different permission levels (1.Faculty, 2.Lab-Incharge, 3.Mentor, 4.Team member).

One can make project, tasks, calendar entries for his/her own purpose. Project owner can invite different people to join his/her project via request system and assign them roles in that project.

A person can be Mentor in one project and team member in some other project, or Lab-Incharge in one project and team member in some other, etc. Hence roles are assigned in a project and a person can be a member of multiple projects at the same time. There is flexibility in changing roles of project members as and when project owner wishes.

One can assign tasks, fix meetings, assign deadlines to others in a project based on his/her permissions (i.e. faculty can assign tasks to mentor but vice versa is not possible as faculty is hierarchically above than the team member).

Inventories can be added in database and can further be assigned to others in a project. Resources can be shared in a project

Inbuilt chat-box and discussion threads (for easy interaction among project members) are there.

Reminder is also present where one can add some deadlines or important dates with time. Inbuilt notifications area is also present.



# User Guide

## SYSTEM REQUIREMENTS

### On Client Side

- Operating System (any)
- Web Browser (Google Chrome, Microsoft Edge, Mozilla Firefox, Opera Mini, Safari, IE11)

### On Server side

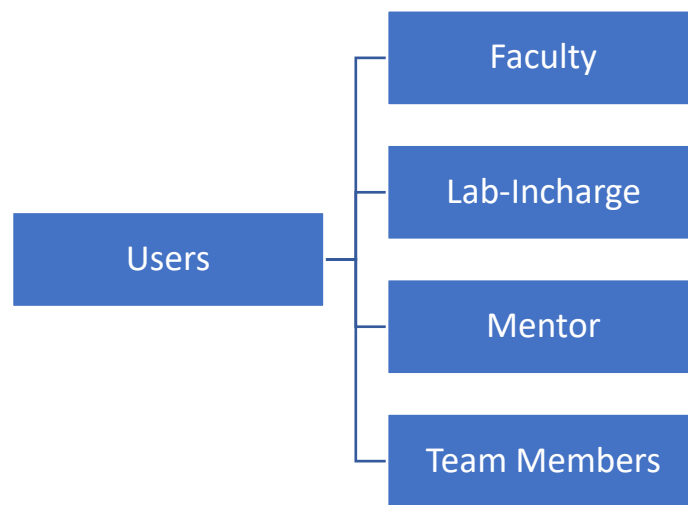
- Web Server (Apache)
- PHP
- MYSQL

## Hardware Requirements

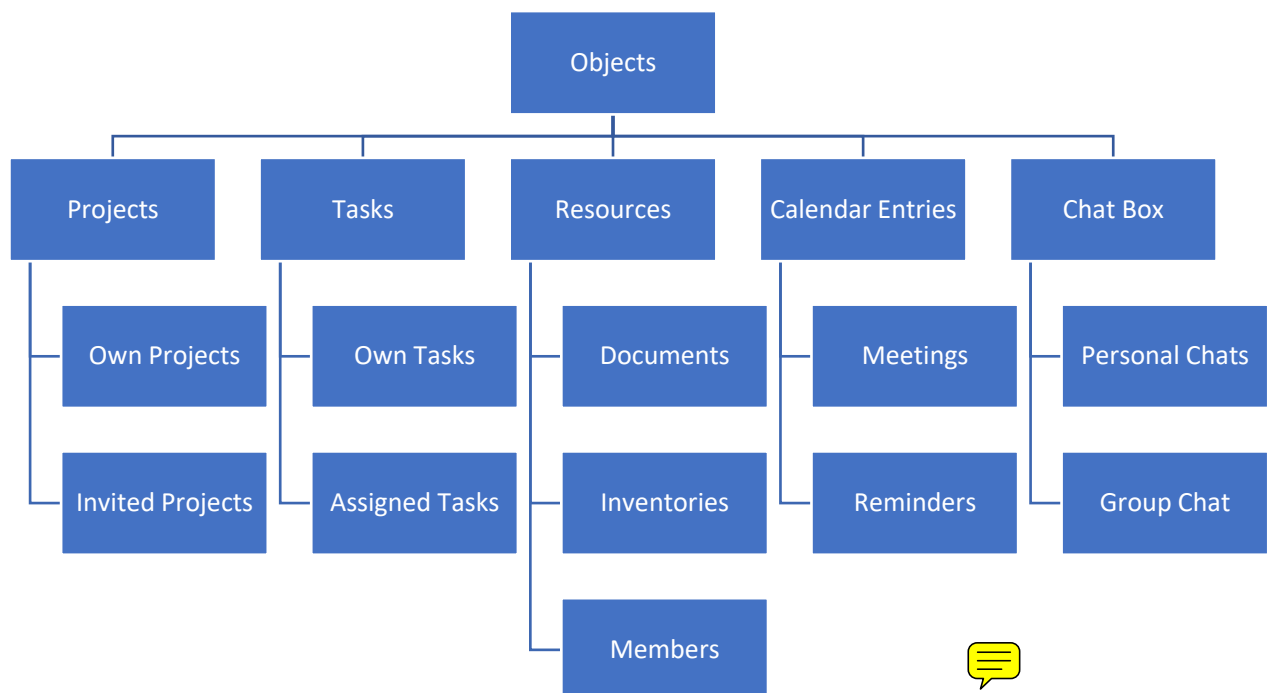
### Server Side

- P IV or above Processor
- 1 GB RAM
- 120 GB HDD
- LAN or WAN

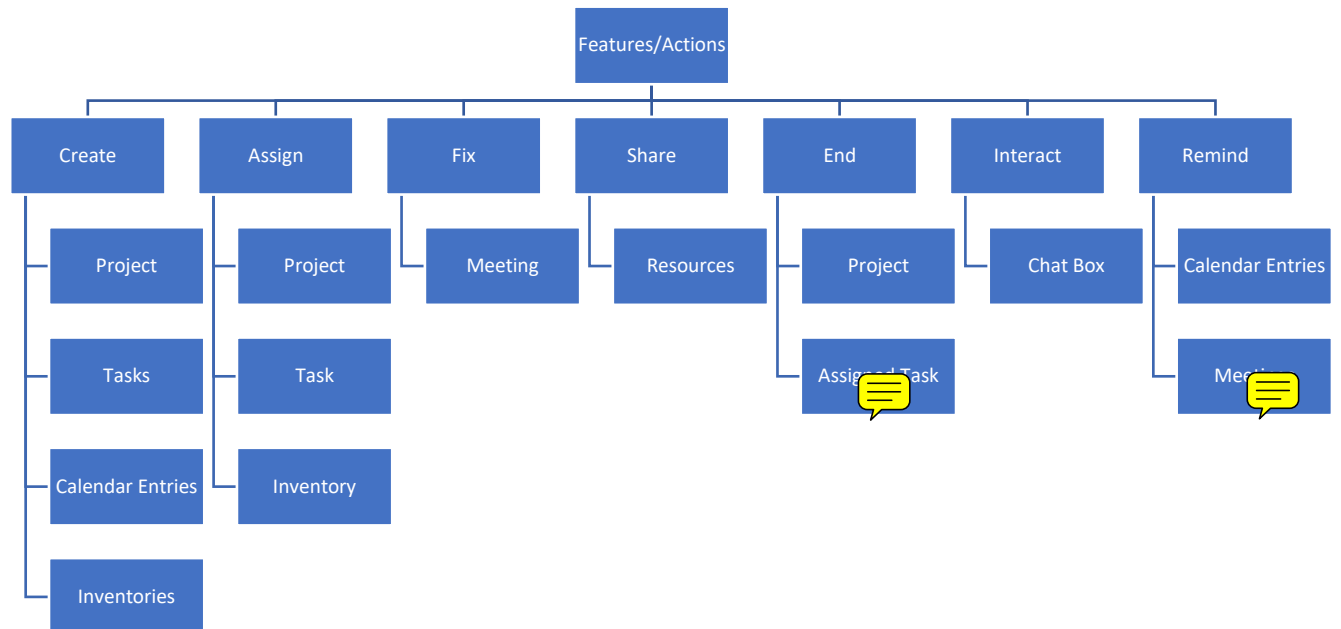
## User Types



## Objects



# Features/Actions



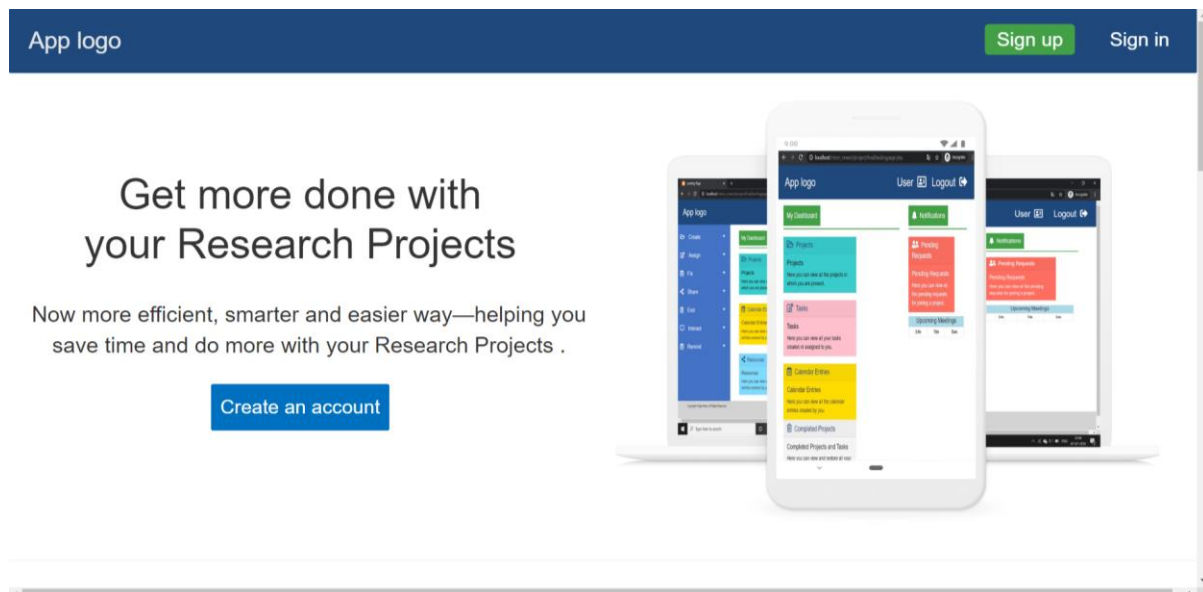
## See how Hierarchy works in Assign Feature



Assign

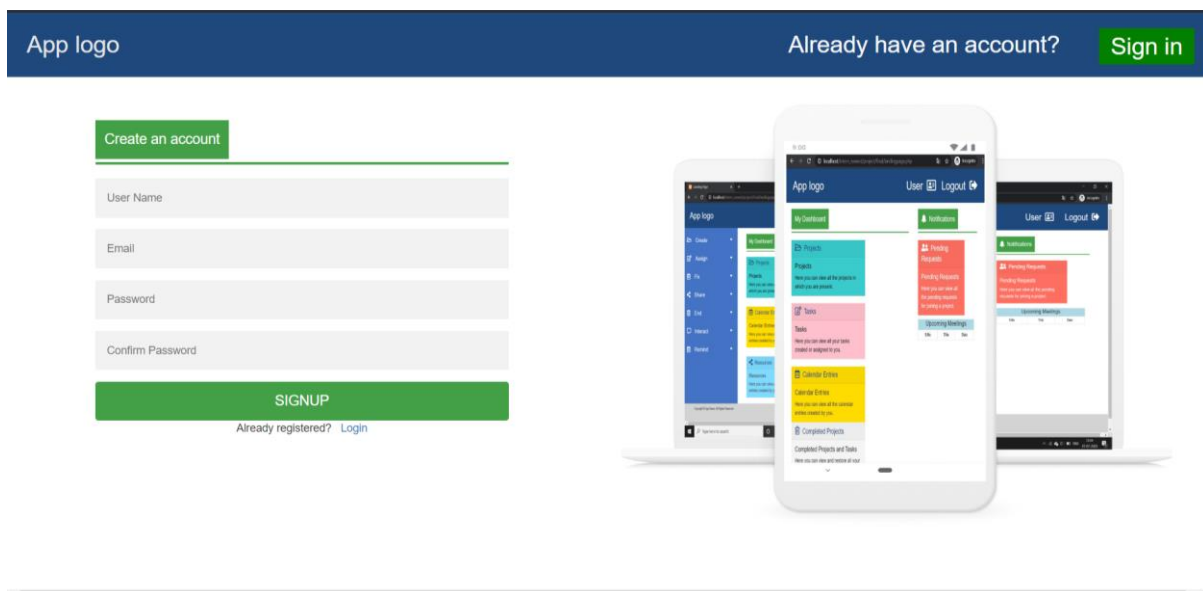
- **Faculty** - Projects, Tasks, Inventories, **To-** Faculty, Lab incharge, mentors, team members.
- **Lab In charge** - Tasks, Inventories, **To-** Lab incharge, Mentors, Team members.
- **Mentors** - Tasks, Inventories, **To-** Mentors, Team members
- **Team members** - Tasks, **To-** Team members..





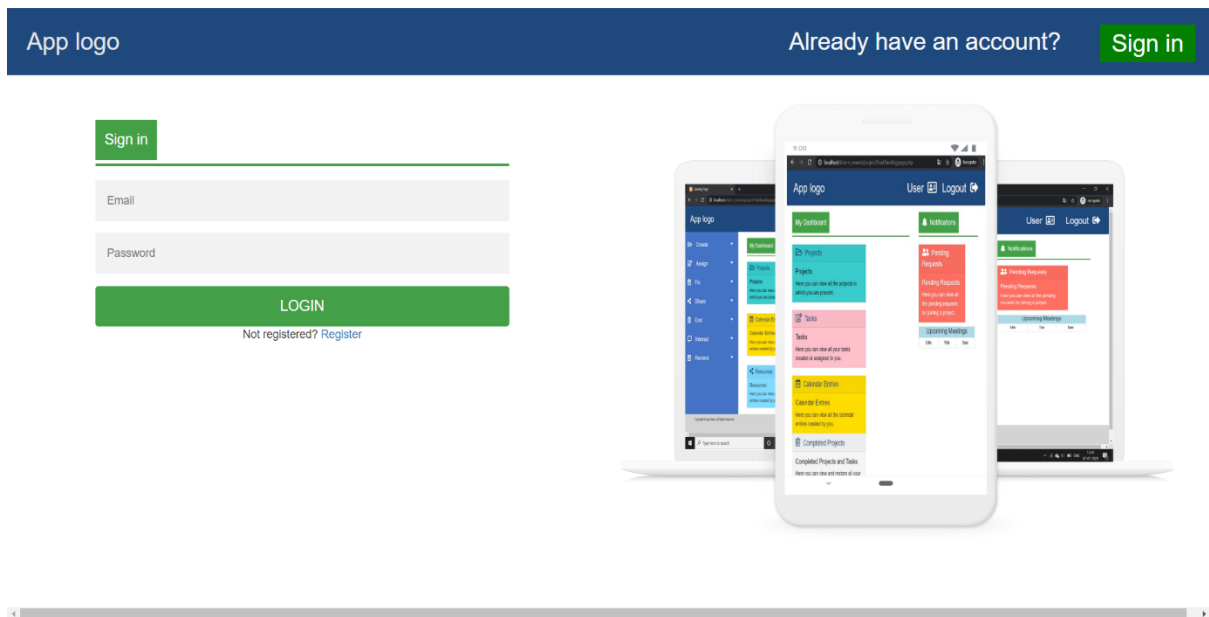
Home Page

## Sign-Up

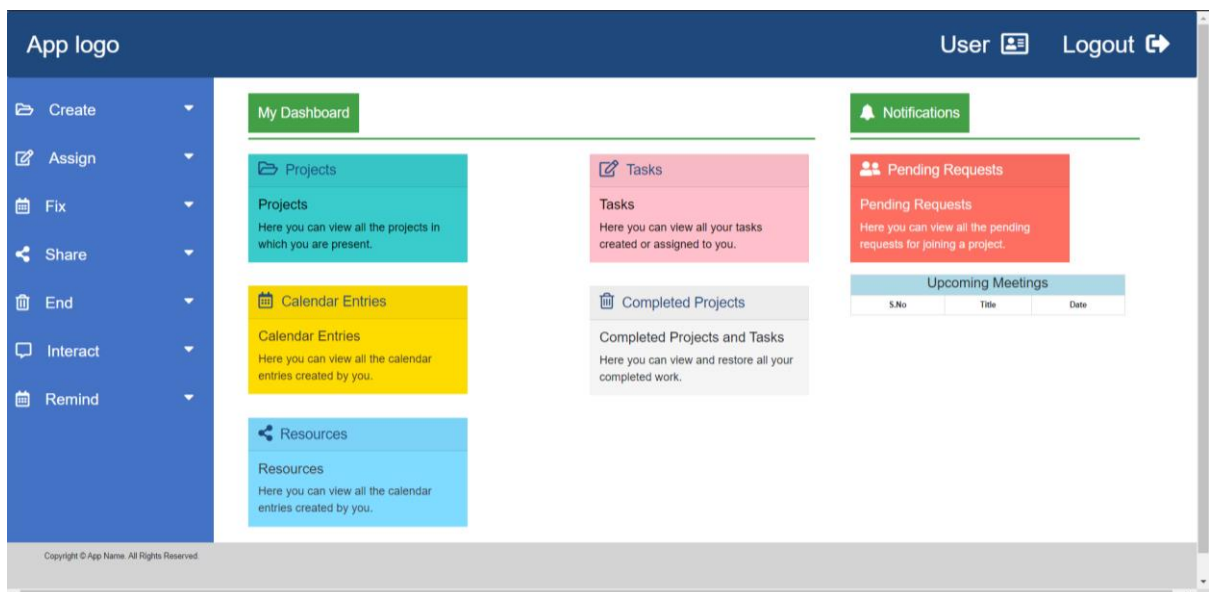


Sign-Up Page

## Sign-in

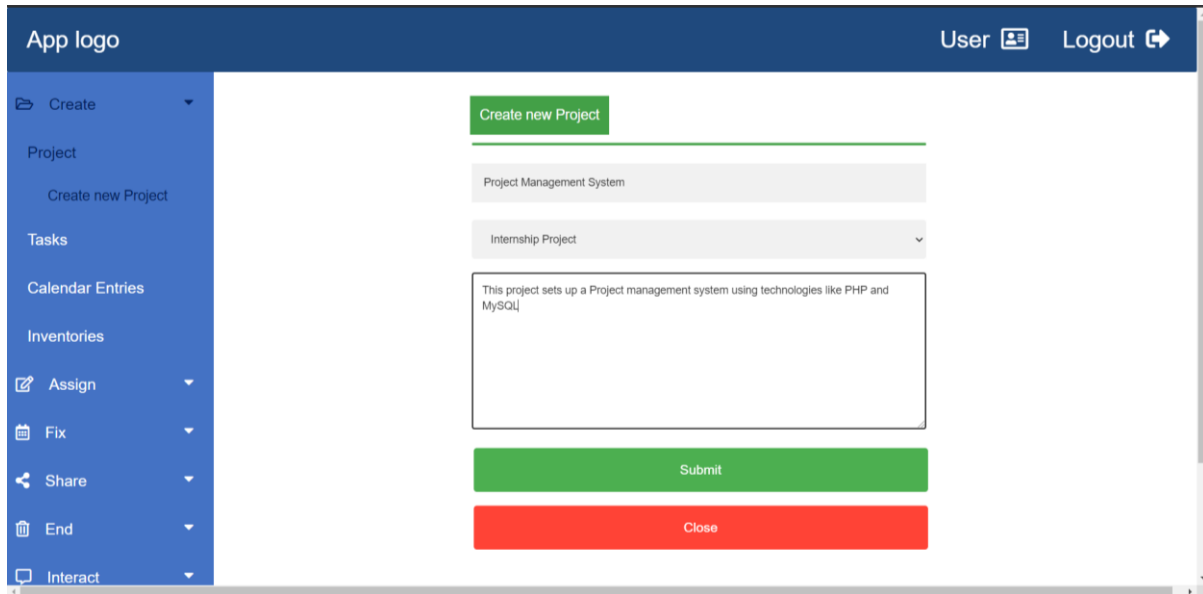


## Sign-in Page



## Landing Page

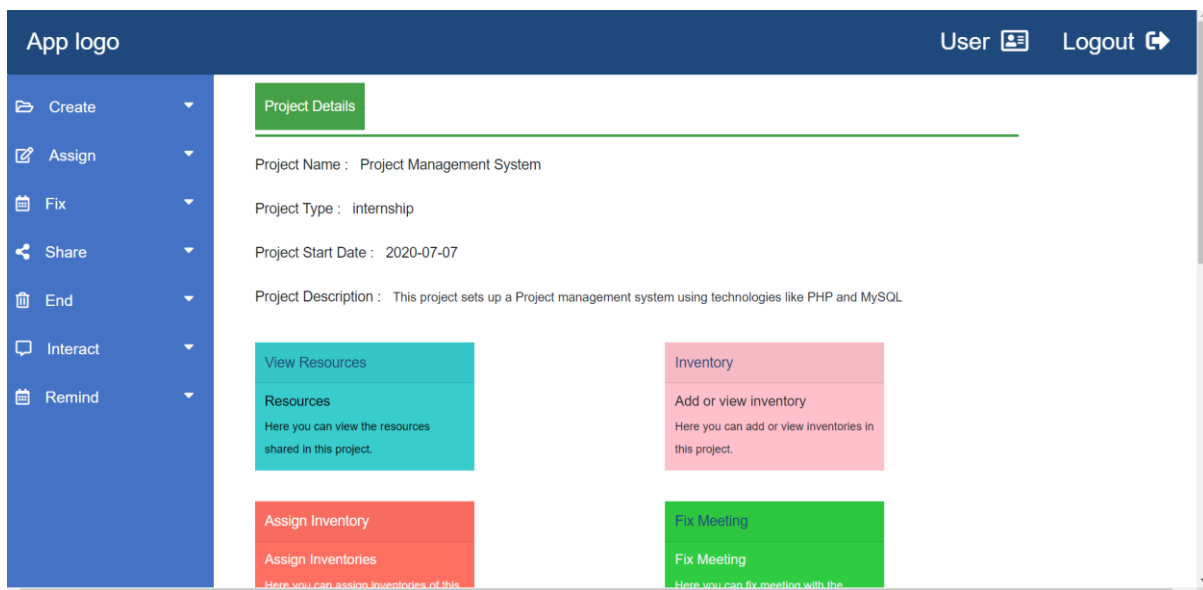
## Create new Project



The screenshot shows a web application interface for creating a new project. On the left is a blue sidebar with a menu containing: 'Create' (with a dropdown arrow), 'Project' (with a dropdown arrow), 'Tasks', 'Calendar Entries', 'Inventories', 'Assign' (with a dropdown arrow), 'Fix' (with a dropdown arrow), 'Share' (with a dropdown arrow), 'End' (with a dropdown arrow), and 'Interact' (with a dropdown arrow). The main content area has a dark blue header with 'App logo' on the left and 'User [icon] Logout [icon]' on the right. Below the header, the 'Create new Project' section is highlighted in green. It contains a form with the following elements: a text input field with 'Project Management System', a dropdown menu with 'Internship Project', a text area with the description 'This project sets up a Project management system using technologies like PHP and MySQL', a green 'Submit' button, and a red 'Close' button.

## New Project Creation Window

## Project Details

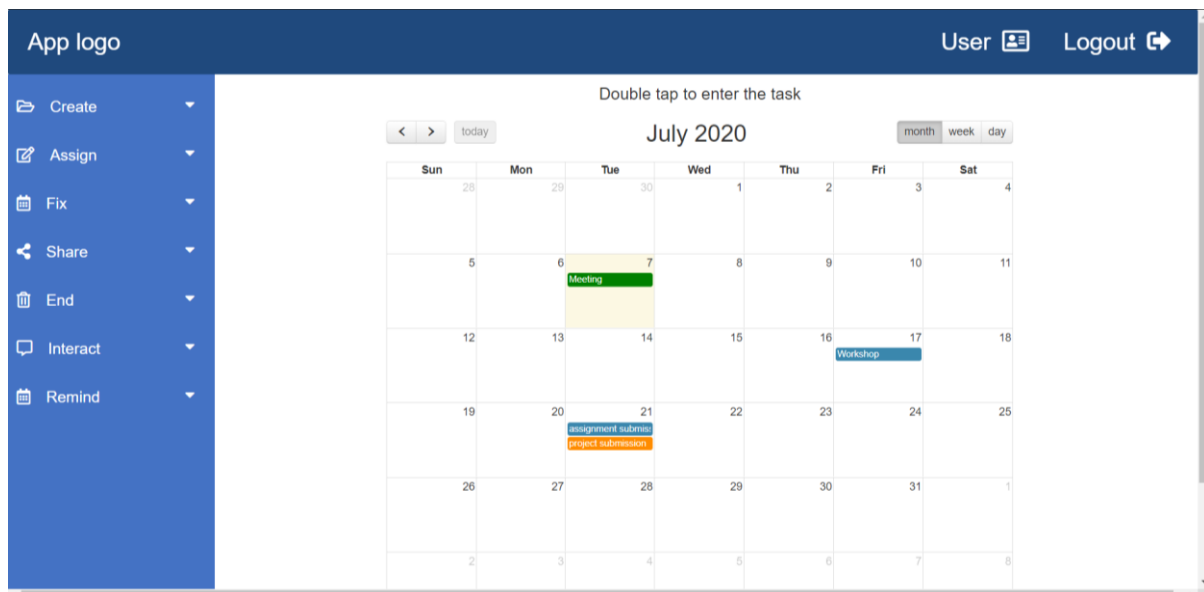


The screenshot shows the 'Project Details' page. The sidebar is identical to the previous window. The main content area has a dark blue header with 'App logo' and 'User [icon] Logout [icon]'. Below the header, the 'Project Details' section is highlighted in green. It displays the following information: 'Project Name : Project Management System', 'Project Type : Internship', 'Project Start Date : 2020-07-07', and 'Project Description : This project sets up a Project management system using technologies like PHP and MySQL'. Below this information are four colored boxes arranged in a 2x2 grid: a teal box for 'View Resources' (with a sub-section 'Resources' and text 'Here you can view the resources shared in this project.'), a pink box for 'Inventory' (with a sub-section 'Add or view inventory' and text 'Here you can add or view Inventories in this project.'), a red box for 'Assign Inventory' (with a sub-section 'Assign Inventories' and text 'Here you can assign inventories of this'), and a green box for 'Fix Meeting' (with a sub-section 'Fix Meeting' and text 'Here you can fix meeting with the').

Project Details Page with all available features like viewing resources, inventories, fixing meetings, etc.

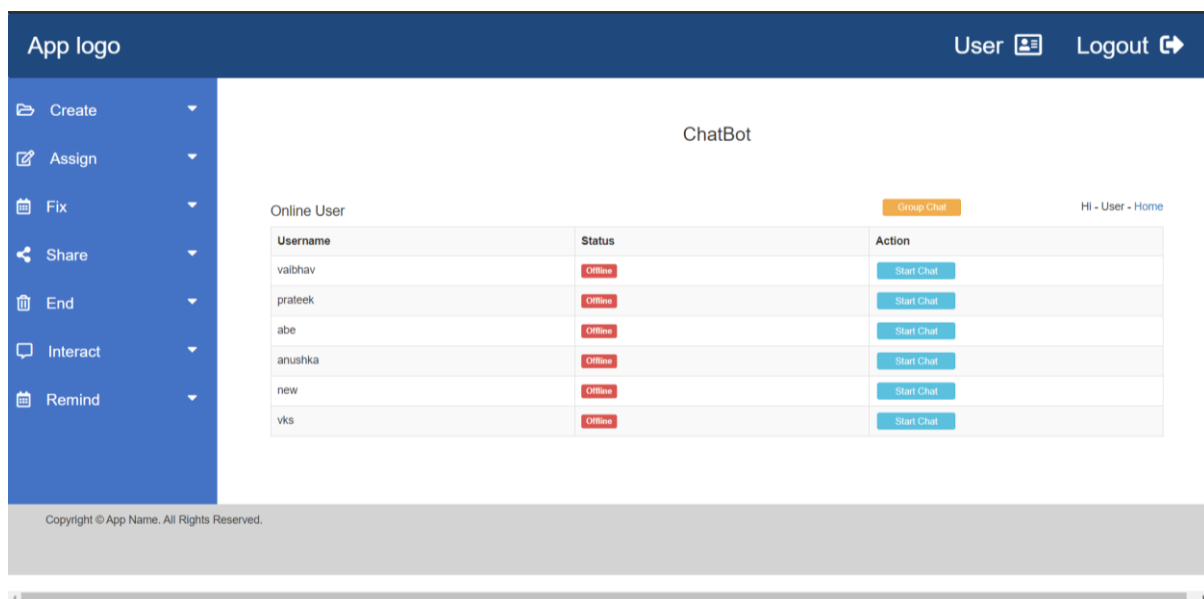


## Inbuilt Calendar



Calendar Window for setting reminders and viewing calendar entries



## Chat-Box




Chat Option

Mobile View

App logo


User  Logout 

My Dashboard

 Projects


Projects

Here you can view all the projects in which you are present.

 Tasks


Tasks

Here you can view all your tasks created or assigned to you.

 Calendar Entries


Calendar Entries


Here you can view all the calendar entries created by you.

 Completed Projects

Completed Projects and Tasks

Here you can view and restore all your

 Notifications

 Pending Requests

Pending Requests

Here you can view all the pending requests for joining a project.

Upcoming Meetings

S.No	Title	Date
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Mobile View

## SOURCE CODE

The following [link](#) contains the source code of the project and the methods to run it.

## FUTURE SCOPE

- Mobile App Version (Android + IOS)
- Chat application similar to SLACK desktop app (for easy notifications).
- Verification via OTP while registration (to be done once the app is launched).
- Invite system similar to google classroom

## REFERENCES

- <https://www.w3schools.com/>
- <https://www.youtube.com/channel/UC8Nbgc4vUi27HgBv2ffEiHw>
- <https://stackoverflow.com/>