

TIME MANAGEMENT SYSTEM

BY

Anika Alam

181-15-1926

Md. Tanvir Faisal

181-15-1775

&

Muhammad Redwan

171-15-1188

This Report Presented in Partial Fulfillment of the Requirements for the Degree of
Bachelor of Science in Computer Science and Engineering

Supervised By

Md. Reduanul Haque

Assistant Professor

Department of CSE

Daffodil International University

Co-Supervised By

Dr. S.M. Aminul Haque

Associate Professor

Department of CSE

Daffodil International University



DAFFODIL INTERNATIONAL UNIVERSITY

DHAKA, BANGLADESH

JANUARY, 2022

APPROVAL

This Project titled “**TIME MANAGEMENT SYSTEM**”, submitted by **Anika Alam, ID: 181-15-1926**, **Md. Tanvir Faisal, ID: 181-15-1775** and **Muhammad Redwan, ID: 171-15-1188** to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on December, 2021.

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Professor and Head

Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Internal Examiner

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Professor

Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Internal Examiner

Mr. Narayan Ranjan Chakraborty
Assistant Professor

Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

External Examiner



Dr. Mohammad Shorif Uddin
Professor

Department of Computer Science and Engineering
Jahangirnagar University

DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Md. Reduanul Haque, Assistant Professor, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

Supervised by:



Md. Reduanul Haque

Assistant Professor
Department of CSE
Daffodil International University

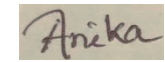
Co-Supervised by:



Dr. S.M. Aminul Haque

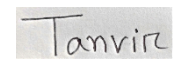
Associate Professor & Associate Head
Department of CSE
Daffodil International University

Submitted by:



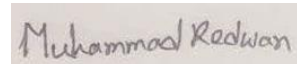
Anika Alam

ID: 181-15-1926
Department of CSE
Daffodil International University



Md. Tanvir Faisal

ID: 181-15-1775
Department of CSE
Daffodil International University



Muhammad Redwan

ID: 171-15-1188
Department of CSE
Daffodil International University

ACKNOWLEDGEMENT

Firstly, we express our heartiest thanks and gratefulness to almighty God for His divine blessing makes us possible to complete the final year project successfully.

We really grateful and wish our profound our indebtedness to **Md. Reduanul Haque, Assistant Professor, Department of CSE** Daffodil International University, Dhaka. Deep Knowledge & keen interest of our supervisor in the field of “*Time Management System*” to carry out this project. His endless patience, scholarly guidance, continual encouragement, constant and energetic supervision, constructive criticism, valuable advice, reading many inferior draft and correcting them at all stage have made it possible to complete this project.

We would like to express our heartiest gratitude to **Dr. Touhid Bhuiyan, Professor and Head, Department of CSE**, for his kind help to finish our project and also to other faculty member and the staff of CSE department of Daffodil International University.

We would like to thank our entire course mate in Daffodil International University, who took part in this discuss while completing the course work.

Finally, we must acknowledge with due respect the constant support and patients of our parents.

ABSTRACT

Time management is an important skill and it is important to achieve the goals and objectives of any organization. According to research, both employers and employees, as well as students, need to learn skills that will boost their productivity or performance in order for a business to manage time effectively and efficiently. Ineffective time management can cause a firm or institution to lose resources, opportunities, and other valuable assets. Time must be managed efficiently and optimally for the betterment of any organization. In this project we have tried to find out how to increase the productivity of any company through a web application. Through this application, the boss of the organization will give a specific time to his employees and that time will allow the employee to do his job just like the time. Every institution has a task or project, as is well known. A good integrating management system, on the other hand, is critical to an organization's success. The system that was created is a web-based application. This project arose from the expertise of the university's CSE department teachers in establishing, managing, and maintaining class tasks or projects on a semester-by-semester basis. The department's procedures were used to create the need specification. The front-end section of the system used HTML, CSS, and Bootstrap. In the back-end, however, Laravel, PHP, and Java script are employed. In addition, an Android-based mobile app will be developed in the near future. The system saves time for students, teachers, and employees. Because the proposed method assists students and teachers (super admin) in dynamically locating their work and project. A teacher's timetable is easily accessible. The major goal of this automated task and time management system, which a student may access from anywhere and view teacher's (super admin) details, is to allow students to view teacher's (super admin) details. This project provides all university students with a simple class schedule. As a result, this project saves time for all users and super admins when it comes to scheduling.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

A time or schedule management system is indispensable in each case of education. The manual and dynamic system is the most common and competitive for this management system. Manually works are time-consuming and need to ensure the data correctly. As opposed to, a dynamic scheduling system is a process, where the system modifies itself during runtime according to the requirement [17]. Nevertheless, we need a tiny help of the manual system, in that case, we named the system as a time management system.

In this proposed project, we will present the system with three major sections. The first section is for Administrator. Administrators can always modify the information of the whole system. One Super Admin can create accounts of Admin with the default username and password. Every admin can change his/her personal details. The admin will have to give the required data for generating the task or project.

The second section is for teachers. By default, teachers will get an activation URL with some information over Email. Teachers will request for activating their account with proper information [17]. They need to login to access the system with username and password they provided. They can only modify their information. Teachers will be able to book a room for extra classes and send the request to the admin for changing the class time, section or classroom number and so on. They will see their class routines in the system. The last section and the most significant section is the user. Users can be anyone, who can only view or download the routine for printing or another academic purpose [11].

However, they need not create an account in the system. In short words, Time Scheduling Management System is the project, which will input the data from administrators and database after that it can generate a task or project dynamically with the given data and little help of the manual system. In our current age of automated systems, where software and hardware are used, it is not advisable to use manual systems. The productivity of a company is the main objective of that company, if the productivity is low then the improvement of that company can be said to be very uncertain. And in order to increase productivity, time must be used in the right way, if time can be used in the right way, then productivity will improve and the company will improve and go

much further. This project is designed to use time wisely. It will help increase productivity through an automated system that has been implemented through a web application. With this system, a company will be able to share the work with one and a half of its employees and there will be no shortage of information as it is stored in the server for a certain period of time. Employees will accept their work and submit it within the stipulated time and will indicate in progress that their work has been completed. If the employee completes his work within the stipulated time of the company, a self-contained commission will go to his salary account as per the rules of the company, it will be added only if the company offers commission.

However, it will ensure the accurate information and will be the user-friendly project.

1.2 Motivation

It is a web application where the owner of the system (admin / super admin) will allow the employees or students and teachers of the company or organization to complete the specific work for a specific project and the employee will receive the work instruction and submit the work by time limit. This system will help increase the productivity of the company and help the officers and employees of the company to complete the work in a smart way. Super admin is the highest person or administrator in this system. This system has many features including creating project work, creating different tasks within the project, handing over the work to the staff, viewing job updates and editing those things or complimenting the staff.

1.3 Objective

In this project, our main object is to develop a time scheduling management system for university classes or any institutions. Some specific objectives needed for this project.

- It is important to analyze the manual system. Then we need to collect the data, identify the system's requirements, and evaluate this data and requirements.
- Next is to design the model for this time schedule management system. This application is web-based. So, firstly design the Front-end part for user interaction and next implement the system using PHP or other frameworks of PHP.
- Maintain and manage information on the company's new or running projects.
- To avoid complications and reduce time in data processing.
- Provide data access according to the role and level of admin and user.

- Increase productivity in less time and using fewer employees
- Timely completion of work directed by the administrator.
- To complete the sent work within the stipulated time to increase productivity.
- Error-free, functional and easy for database related work.
- To run the application safely and smoothly.
- Above all, to increase productivity, to automatically maintain and manage the work of staff and admins.
- The last part is to test and validate the system that to ensure that it runs successfully.

1.4 Expected Outcome

- We expected a complete system that generates the routine dynamically but due to some constraints, it is not possible to generate a fully automated time schedule.
- We expect that our proposed system will save time for management to generate task or project manually.
- This proposed system will effective for all three major users of the system, Administrator no need to generate manual task, and the teacher or super admin can view their individual task.
- It will monitor all kinds of projects and various works of the project.
- Manage project, admin and employee information.
- Creating and editing project details.
- Transferring work to employees, and work updates monitored by the admin.
- Editing, adding and updating the project and updating the work progress in a timely manner.

1.5 Report Layout

The term "report layout" refers to detailed information about each project chapter. We shall describe our project in six chapters because it is a development project. Introduction, Background, Requirement Specification, Design Specification, Implementation, and Testing, Impact on Society, Environment, and Sustainability, and Conclusion and Future Scope are the six chapters of the book.

In First Chapter, Introduction, Motivation, Objectives, Expected Outcomes, and Report Layout were just a few of the aspects of our project that we covered.

In the Second Chapter, Shows information about our project's background, such as previous works, comparative studies, the scope of the problem, and the problems we had in developing the routine.

In the Third Chapter, Describes some of our project's requirements and functionalities. The business process model and use case modeling detailed exactly how to carry out the routine. In addition, the types of data required for this project were described in the requirement collecting and design criteria.

In Chapter Four, Front-end design, back-end design, interaction design, UX, and implementation requirements are all included in the design specification. This section will also cover the various sorts of language used in the front-end and back-end.

In Chapter Five, Following the completion of the front-end and back-end designs, the implementation and testing phase begins. This document explains how to utilize a database and how to interact with the system as a user. The testing results and report can also be seen in this section.

In Chapter Six, We discussed the impact on society, the environment, constraints, and obstacles in this chapter.

In Chapter Seven, This is the final section of the project, and it is divided into two sections: Conclusion and Future Scope. The Future Scope section goes into great length regarding the features that the system may incorporate in the future.

CHAPTER 2

BACKGROUND

2.1 Introduction

Every Educational institution has a routine to manage their classes. The university is a non-profitable well-known institution between Bangladesh. At first, it starts his journey only sixty students, but now the number of student at the university is among fifteenth thousand. The University provides under-graduate and master's program separately. The university already ensures their high-quality teaching ability. An educational institution has different kinds of the department. In each year in every department has at most 3 semesters. Each department has one routine. They create routine manually. University routines depend on some condition, like that teacher, class time, number of periods and room [13]. It is very annoying to update routine manually in each semester.

As a Good university, it is more Significant to make routine automatically. The automated time scheduling management system to maintain the routine all the department of the university. Using an automated system to remove this problem. Then it is easier to update routine several times. In this system, students will see all information of the teachers. Automated routine managements system makes an educational institution is more effective and efficient.

2.2 Related Works

The work might be virtual calculation components, for example, strings, procedures or information streams, which are thus booked onto equipment assets. In this Process, there are huge complicated requirements. Most of the organization and institution have already tried to develop the routine [5]. Even in our institution also tried to develop the routine. However, they have faced the same problem and this was overlapping. We have some limitation on the overlap. When the teacher takes a class in one slot then he/she cannot take another class in the same section [17]. In addition, back-to-back classes not allowed for teachers but allowed for students. Besides teacher cannot take more than three classes in a day. In the same, way we are confined the time and room overlapping.

2.3 Scope of the Problem

The project Semi-Automated time scheduling management system for university classes is helpful for every educational institution. Because our proposed system is very easy to find routine automatically. Easy to find routine teacher's details in every semester. In this system also remain a manual system. However, our project is web based, so the user interface of this system is easy to operate all the students [14]. The system easily creates an automated routine and maintain the system. We think the educational institution will be interested in our project, and they can create an automated system for their institution.

2.4 Comparative Analysis

The university experience requires an understudy to enter an automatic learning climate where one should control and assess individual learning conduct utilizing metacognition, inspiration, and vital activity. Key activity expects thoughtfulness regarding using time productively, and powerful using time effectively can give benefits including decreased pressure, better-kept up with a balance, expanded efficiency, and further developed achievement. Time is a restricted asset and understudies should oversee data handling undertakings, including perusing, examining, tasks, tests, and the setting exchanging among them. What's more, they should oversee time for extracurricular exercises, occupations, and public activity. Appropriately oversaw time produces scholarly achievement, and understudies think that it is normal to consider and assess how they oversee assignments of varying lengths, intricacies, cutoff times, and likely interferences.

Various people might have diverse time-usage rehearses, yet self-controlled advancing frequently includes self-observing, self-judgment, and sharpness; consequently, expecting that understudies are mindful of their time-usage rehearses permits specialists to utilize self-announcing surveys to comprehend the job of using time productively in scholarly achievement.

2.4 Challenges

Our proposed system is to generate an automated time scheduling in task or project. To develop, the system we are faced with some challenges. To generate the dynamic routine is so tough. We convert the static task or project to dynamic. There are some challenges that we already faced in generating the dynamic routine [14]. Some challenges are –

- ❖ We are capable of every room must be used for every time slot.
- ❖ Book a room dynamically/powerfully.
- ❖ Not covering every section/room.
- ❖ None overlaps the Trainer/educators.
- ❖ Not persistent class more than three.
- ❖ To keep up the consecutive classes.
- ❖ To upload the teacher's information and initial.
- ❖ To alter the system as user requirements.
- ❖ To explore the routine based on teacher initial, course code and semester.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Business Process Modeling

In this section, we will discuss the main structure by the business process model Time Management System which defines the workflow of the applications. The Elaboration of BPM is Business Process Model. Business Process Model refers to the graphical user interface [1]. It indicates how the process exactly works. Here is a two portion, first one is user BPM and second one is super admin BPM.

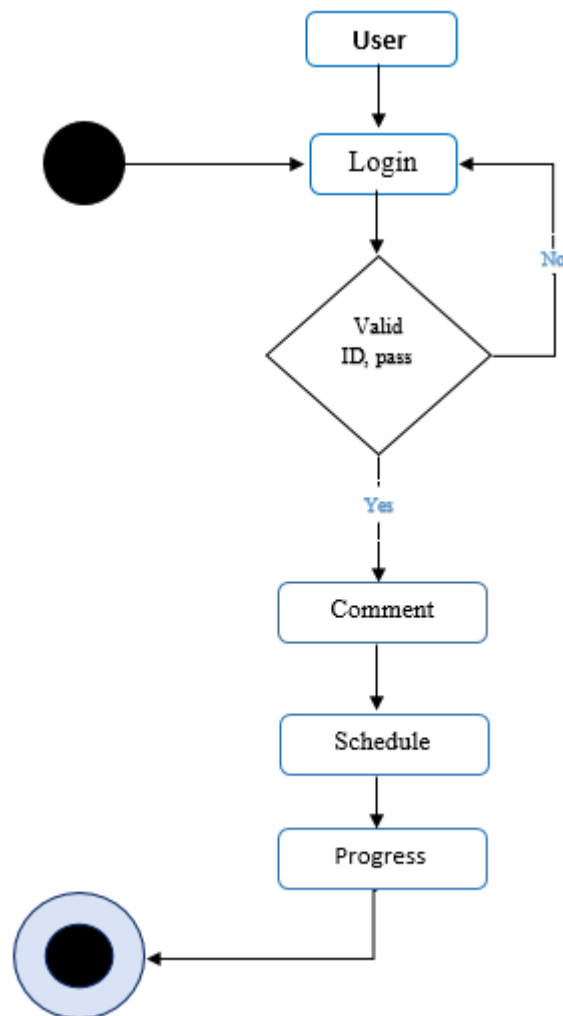


Figure 3.1: Business Process Modeling-I

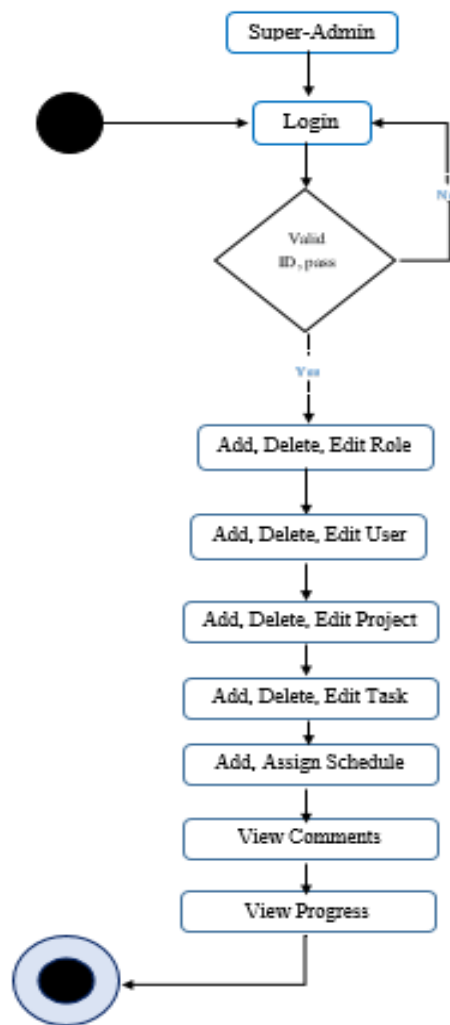


Figure 3.2: Business Process Modeling-II

BPM provides you a Clear thought about your idea. BPM likewise gives you a consistency of your application. It reduces the wasteful capacity. BPM helps the project to decrease the cost, increment speed and increment the nature of the process.

Therefore, Business Process Model easily describes the full project in a simple graphical interface.

3.1.1 Class Diagram

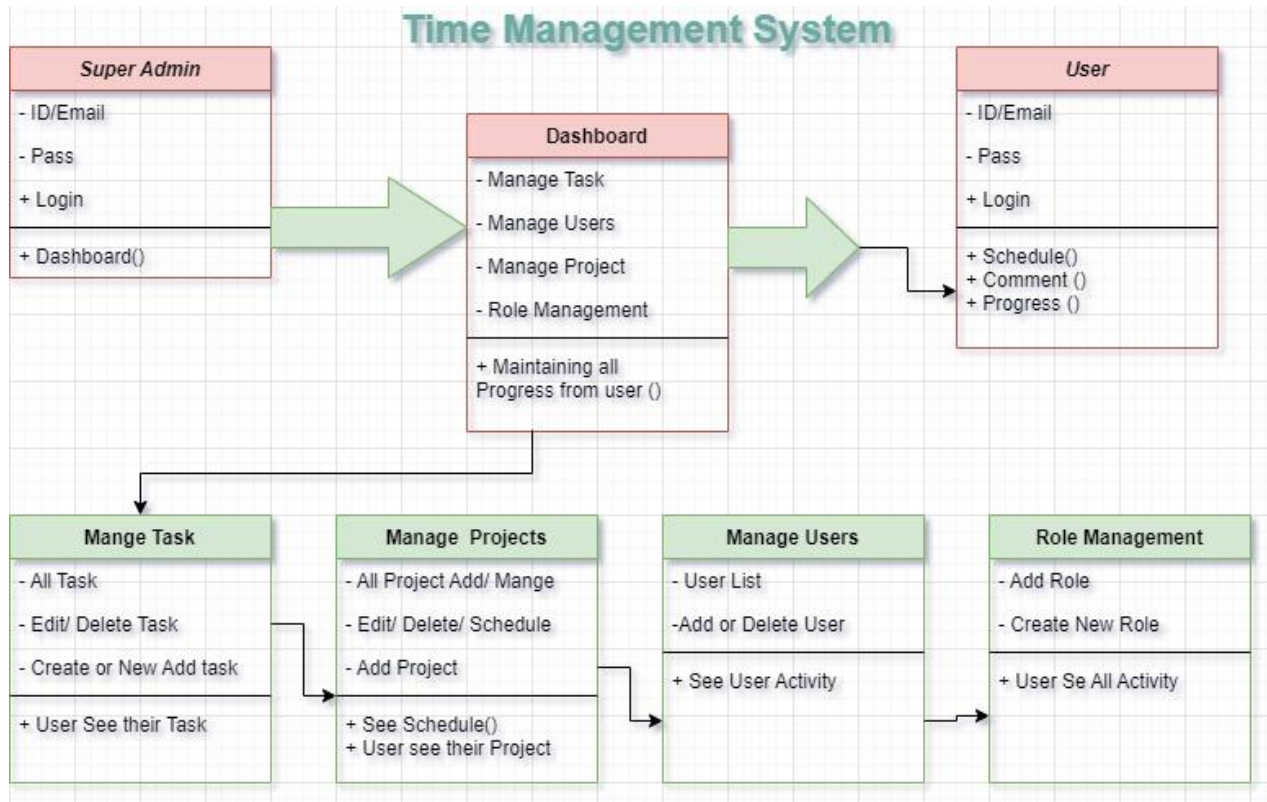


Figure 3.2.1: Class Diagram

3.2 Requirement Collection Analysis

Time management system creates an environment, which helps the teacher, student, employee, and everybody. Before taken this project at first we meet our project committee. We discuss the final year project more briefly. Then they suggested us about this topic. Because this project is more useful for university classes. Then we gone to our course teacher and suggested the same topic [6]. After all discussion, we started a study about dynamic routine, but we see that is so difficult to generate dynamically.

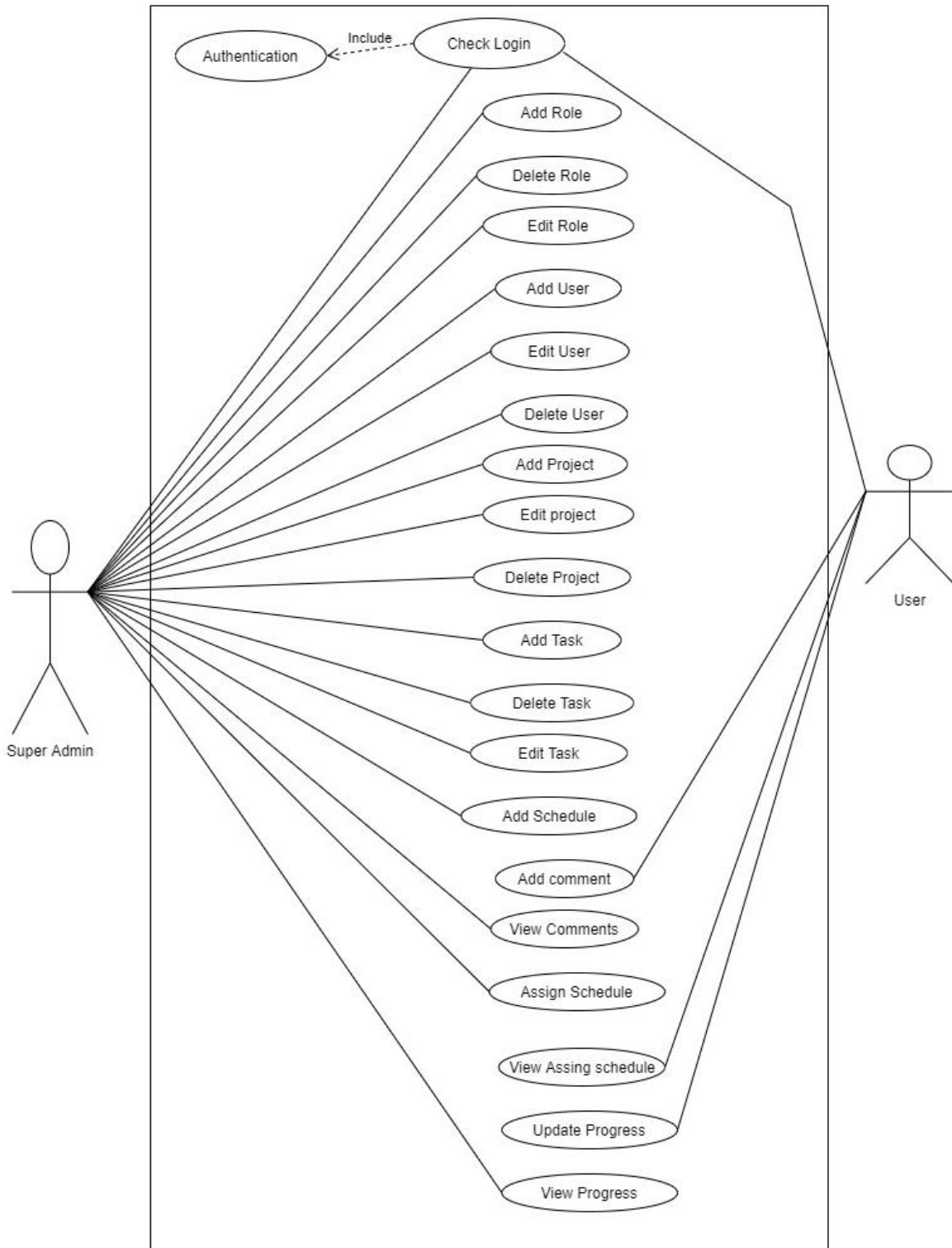
3.3 Use Case Modeling and Description

A use-case model depicts how various sorts of users interact with a system in order to solve an issue. A use case diagram is a type of scenario that connects typical individuals, organizations, and external systems in your system or framework. In most cases, a use case diagram depicts the

relationship between the user and the program in a variety of situations. A use case can quickly condense the entire project for the user. A use case diagram allows us to see the complete project in a single diagram. The use of a case diagram can aid in the development of a project. The oval shape represents the use case and stick figure represent the actor or user in the process. The proper use case diagram and activities used to reach the actual destination.

In this project, user or students have no required to login. They can search task or project easily. Student's user can also request for change section, slot and time. They can report having start and end time. Students can also view the full task or project.

Normally, an actor to accomplish a complete project transaction performs the use case description [21]. Besides use case, description defines the actual task of the user or actor. At first, it has initiated by an actor or user and given the value of an actor. There are distinctive types of use case description given the underneath. If we focus on the table, we can say that there are various types of data given the table. They are at first, use case name, actor, precondition, user, internal path, exceptional path, and note. Use case name characterizes name of the procedure or use case. Actor or user indicate who will be the user of the system. Pre-condition are those things that should be set up before the utilization case begin.



Use Case Didagram

Figure 3.3: Use Case Modeling and Description

The internal path is the most successful path of the process. There are different kinds of task perform here. Predominantly the progression of the procedure. Exceptional is defined which types of error occurred of previous steps like that the internal path. Furthermore, the last one notes, it identifies who will create or update the process and when he updated the table that is included in the note part.

3.4 Entity Relationship Diagram

Entity relationship diagram is one kind of summary of all data structure of system [22]. For this system, the entity relationship diagram represents the database that is important for this system. The relationship between tables is also shown with the entities in this diagram.

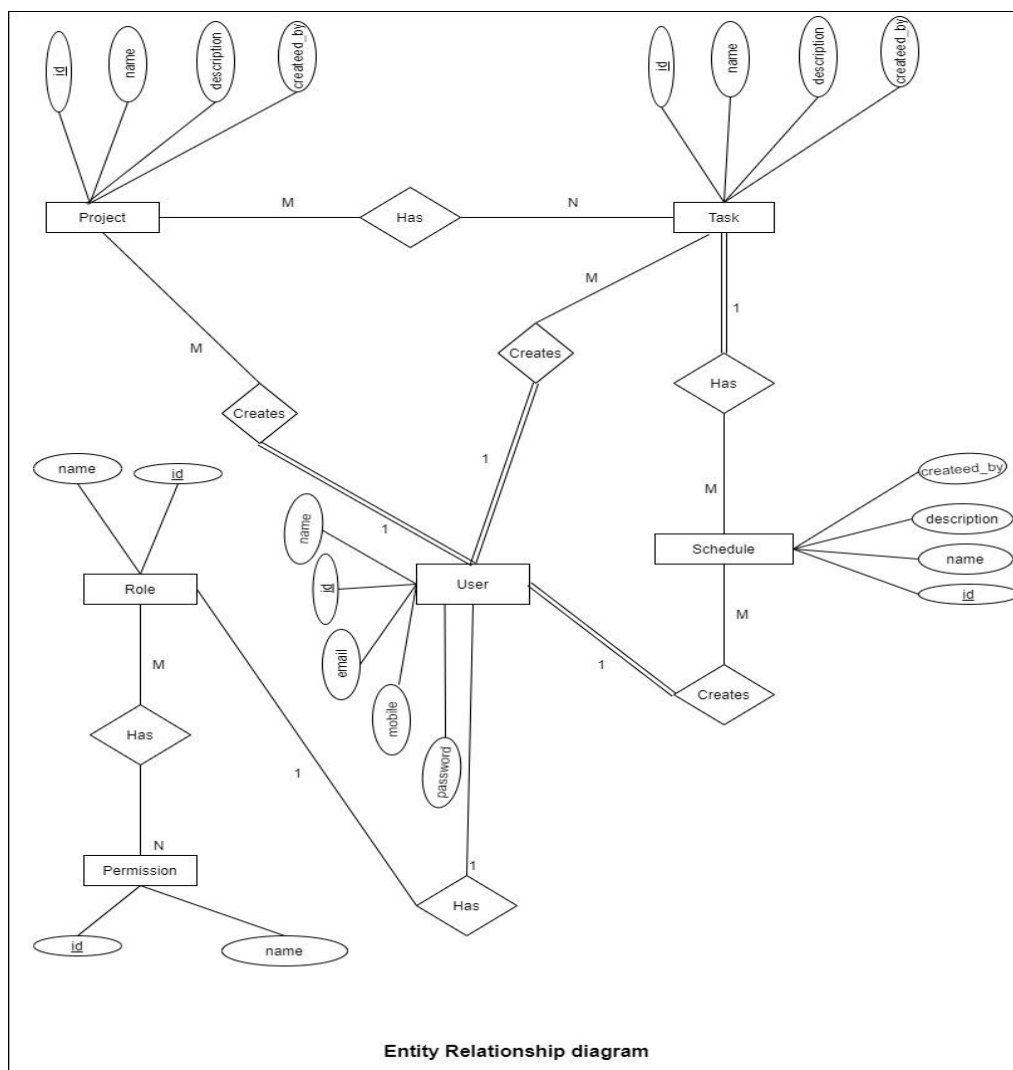


Figure 3.4: Entity Relationship Diagram

3.5 Logical Data Model

All the data will have to be in the database which is shown in Logical Data Model figure and it will be the current time responsible. Data will transfer from database to web application.

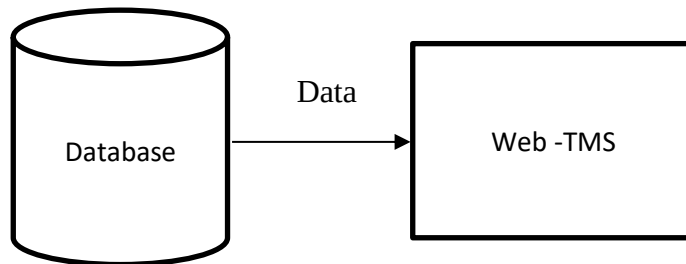


Figure 3.5: Logical Data Model

3.6 Design Requirements

Design requirements are very important for web application. It attracts the user to use. So, to complete the design, we must have mobile application design skills. For this, we have to know the various types of computer programming languages. Market analysis can be a good trick for the design. We have to give proper attention to design the database so that it works appropriately and easily.

Hardware Requirements:

Hardware requirements or specification means what kinds of hardware needed to operate the project. [25]

- Processor: Platinum III or Higher
- RAM: 512 Mb or more
- Hard Disk: 500 Mb or more
- Screen Resolution at least 640 * 480 or above.
- Support for printer
- Required Internet Connection

Software Requirements:

Though the system is a web-based application, so the client side is required-

- Web server: Apache Server (XAMPP)
- Operating system: Windows/Linux
- Database: MySQL
- Sublime Text for Editing
- Internet Browser for View

Language:

- HTML
- CSS
- Bootstrap
- PHP
- Laravel

CHAPTER 4

DESIGN SPECIFICATION

4.1 Front-End Design

Front-End is the place where the user interacts. So, considering this factor, we have created a user friendly and smooth design. Every user can easily use this application. The Front-end is one kind of application that user interacts the application directly. Front-end convert the data to a graphical interface so that the user may readily see and interact with it.

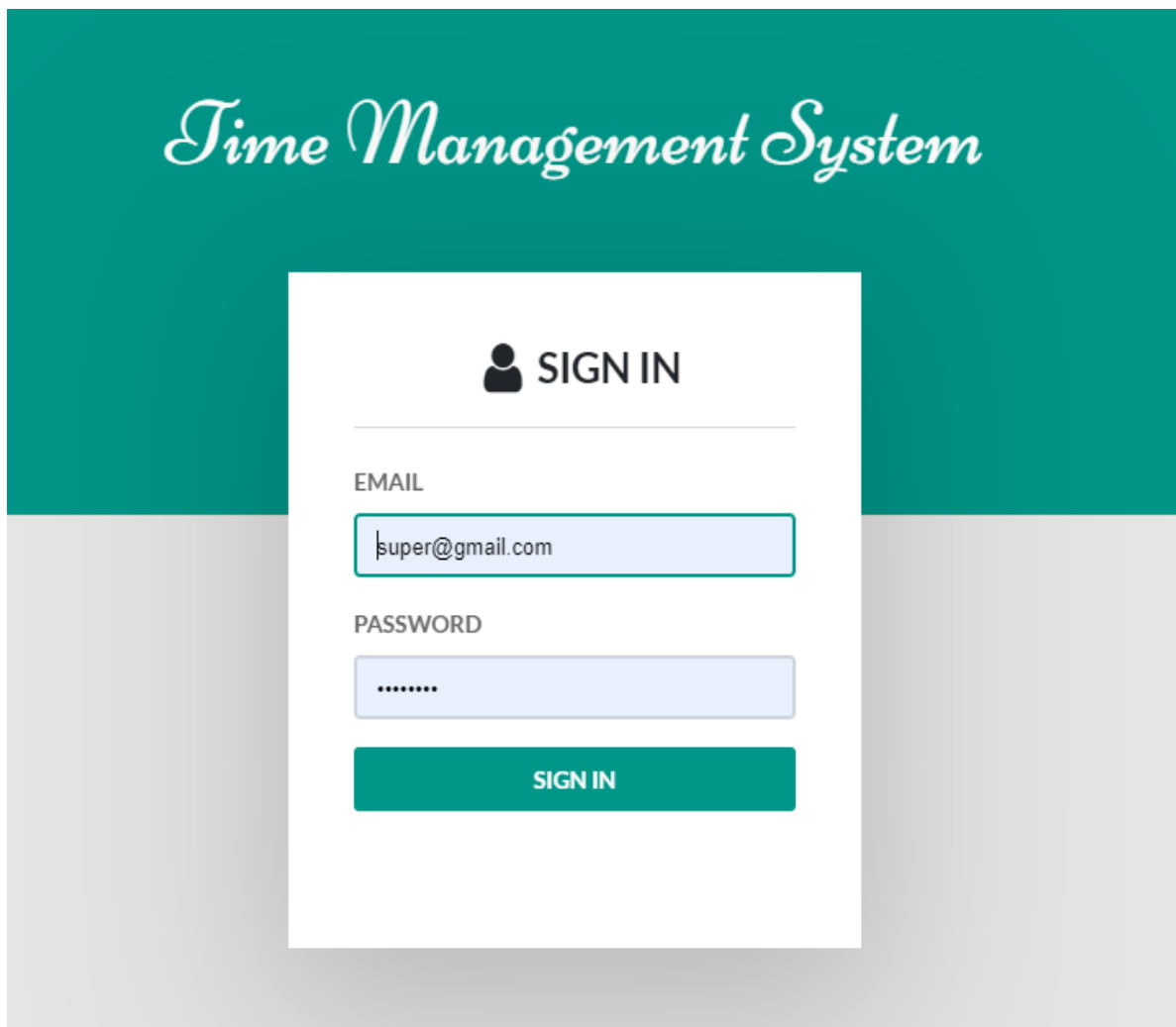


Figure 4.1: Front-End Design

Front-end is the viewer site of the user. Our Project “Time Management System” is one kind of web-based application. This Application also has a two part. One is front end and another is back-end.

The front-end includes some language. We used HTML, CSS, and JavaScript, as well as a free Vali template. CSS stands for Cascading Style Sheets while HTML is for Hypertext Markup Language. On the other side, JavaScript is one kind of scripting language.

HTML and CSS used for creating a structure for the application [3].HTML can derive the header, footer. In addition, how the text display in the application and how the media and images appear. HTML and CSS is the main structure of the website [3]. If you have no knowledge about HTML and CSS, you cannot create a website. JavaScript added a more functionality to your website.

After completing, the front-end part user can interact the site, clicking some button and input something like that your name, mail, etc.

4.2 Back-End Design

Basically, in software development back-end means rendering server side. Usually, the backend programming consists of three parts: application, server and database. For database we have used Firebase Realtime Database and other implemented back-end technologies that are Java, Firebase Cloud Messaging, and many other libraries. The back-end is also a program that supports indirectly to the front-end site. The back-end also called the server-side. Because it helps to how the site works, updates and changes. The back-end is a program that user cannot see the browser.

Our project is called "Semi-Automated Routine Management System" and it is a web-based application, as we previously stated. The application is dynamic in nature. Program automation is nearly impossible without a back-end [16]. The back-end programmer was contacted by several folks who work in the back-end. The back-end is usually divided into three sections. An application, a server, and a database are the three components. In this system, all data is kept in a database, after which a server is created. Back-end also controls the security of the application. Dynamic sites are always changing updates in real time. For dynamics sites, a database is required to work properly. PHP is server-side scripting language. PHP refers to the hypertext preprocessor. In this project, we have also used PHP. Because PHP runs different kinds of the platform and supports many databases like that MySQL, Oracle etc. [2].

4.3 Interaction Design and UX

We have tried to make our project UX design as simple as possible. Because we have researched on the internet and visit various site, used various android applications. Then we made the UX design of our application.

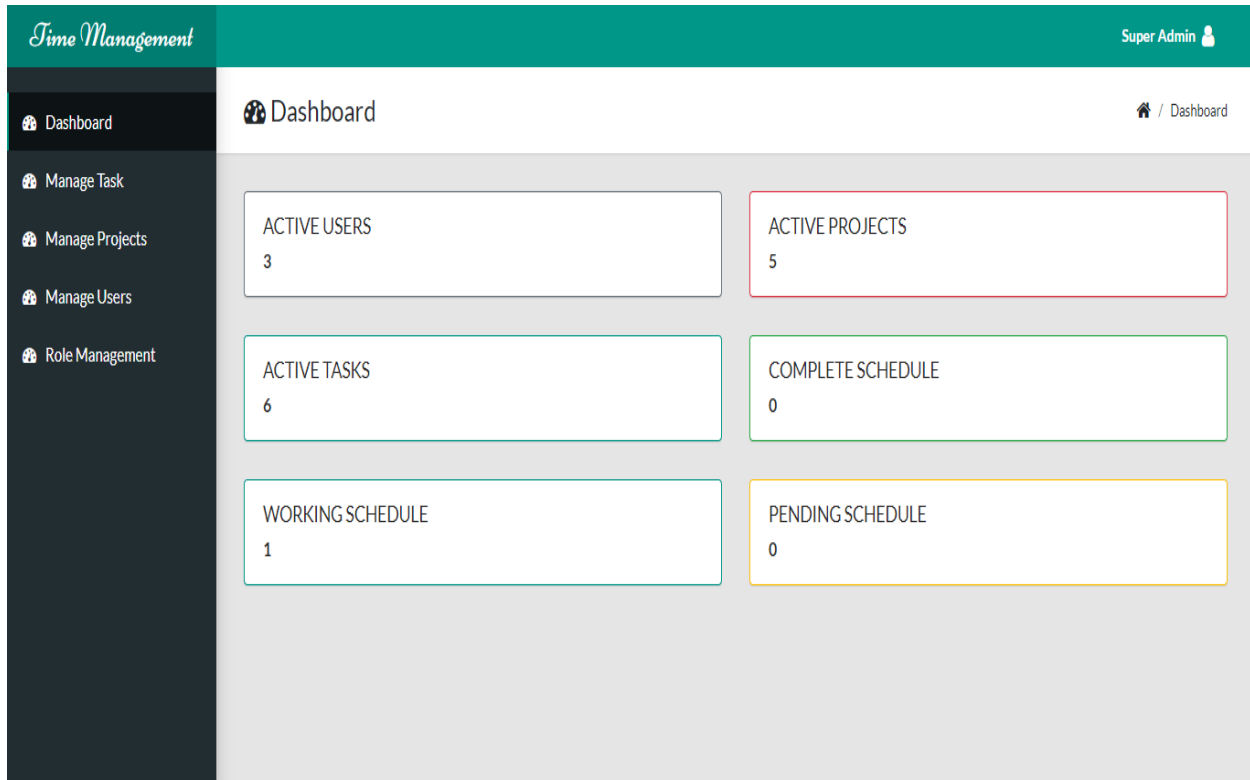


Figure 4.2: Interaction Design and UX

Goal Driven Design: User research is critical for understanding real-world settings and issues [19]. This is the individual who really used the system. User stories should clearly clarify what we aim to achieve with our persona. User stories provide rationality to our ideas, resulting in a flawless design.

User Expectations: This is the same situation as when a user visits an application and does some activities in the hopes of receiving a response from the product. If a user fills out a form and hits 'Done,' he expects a confirmation alert or an error message if any of the fields are incorrect.

Usability: So that the user can focus on finishing the task, less time should be spent learning how to utilize the application. It should be relatively simple to use and understand the product's functions.

Utility: It is the most significant factor, concentrating on "Is the function valuable to the user?" or "Is the function critical, or is it just intended to provide a high-quality UI factor?" [19]' only when the function solves a problem or serves a goal is it beneficial to the user. To fulfill a valuable duty, the function should have a very clear thinking behind it.

4.4 Implementation Requirements

It was our first service-related work. So, we had to learn a lot of new technologies and spent a huge time to fulfill all the requirements.

Requirements for implementing Front End: This system is implemented with Web programming. For this, I have used Sublime Text to write the code and the languages are HTML, CSS and PHP.

Requirements for implementing Back End: To implement the database I have used XAMPP server to connect the database with PHP and implement database design with MySQL database.

Summary of languages, Frameworks, and tools

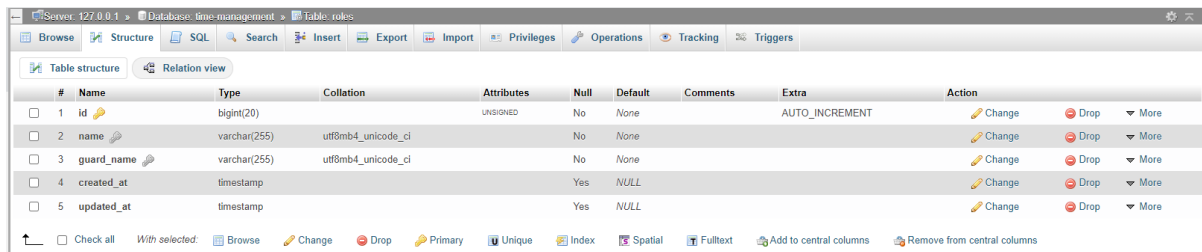
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- XAMPP

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Implementation of Database

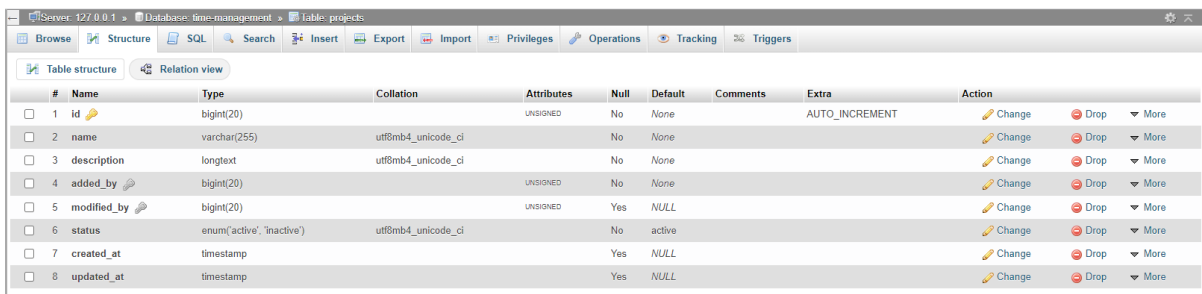
Data should be stored in a database for reuse the data. To implement the database, I have used XAMPP Apache and MySQL server to run the web application by localhost [24]. The Database Tables are Given Below:



The screenshot shows the MySQL Table Structure for the 'roles' table. The table has 5 columns: id, name, guard_name, created_at, and updated_at. The 'id' column is a bigint(20) with AUTO_INCREMENT. The 'name' and 'guard_name' columns are varchar(255) with utf8mb4_unicode_ci collation. The 'created_at' and 'updated_at' columns are timestamps with NULL default values.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	bigint(20)		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
2	name	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
3	guard_name	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
4	created_at	timestamp			Yes	NULL			Change Drop More
5	updated_at	timestamp			Yes	NULL			Change Drop More

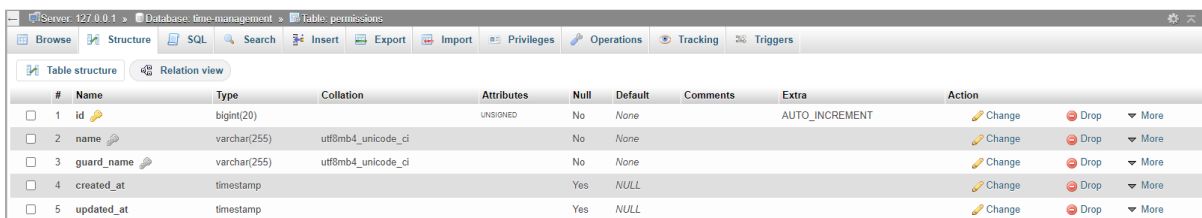
Table 5.1: Data Structure for Role Management.



The screenshot shows the MySQL Table Structure for the 'projects' table. The table has 8 columns: id, name, description, added_by, modified_by, status, created_at, and updated_at. The 'id' column is a bigint(20) with AUTO_INCREMENT. The 'name' column is a varchar(255) with utf8mb4_unicode_ci collation. The 'description' column is a longtext. The 'added_by' and 'modified_by' columns are bigints(20) with UNSIGNED attributes. The 'status' column is an enum('active', 'inactive') with utf8mb4_unicode_ci collation. The 'created_at' and 'updated_at' columns are timestamps with NULL default values.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	bigint(20)		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
2	name	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
3	description	longtext	utf8mb4_unicode_ci		No	None			Change Drop More
4	added_by	bigint(20)		UNSIGNED	No	None			Change Drop More
5	modified_by	bigint(20)		UNSIGNED	Yes	NULL			Change Drop More
6	status	enum('active', 'inactive')	utf8mb4_unicode_ci		No	active			Change Drop More
7	created_at	timestamp			Yes	NULL			Change Drop More
8	updated_at	timestamp			Yes	NULL			Change Drop More

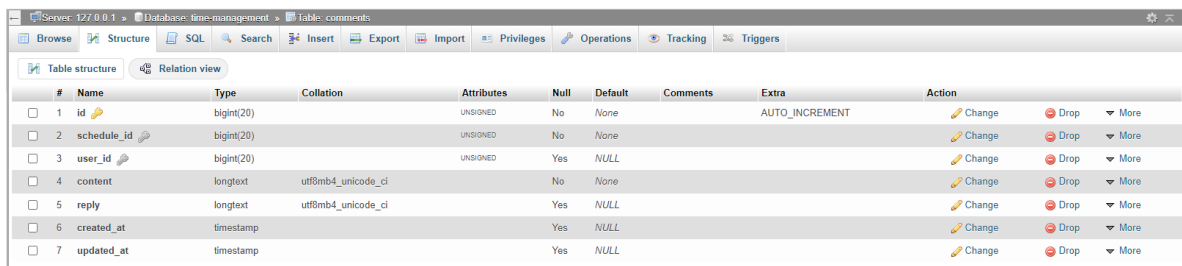
Table 5.2: Data Structure for Project Management.



The screenshot shows the MySQL Table Structure for the 'permissions' table. The table has 5 columns: id, name, guard_name, created_at, and updated_at. The 'id' column is a bigint(20) with AUTO_INCREMENT. The 'name' and 'guard_name' columns are varchar(255) with utf8mb4_unicode_ci collation. The 'created_at' and 'updated_at' columns are timestamps with NULL default values.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	bigint(20)		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
2	name	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
3	guard_name	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
4	created_at	timestamp			Yes	NULL			Change Drop More
5	updated_at	timestamp			Yes	NULL			Change Drop More

Table 5.3: Data Structure for permission Management.



The screenshot shows the MySQL Table Structure for the 'comments' table. The table has 7 columns: id, schedule_id, user_id, content, reply, created_at, and updated_at. The 'id' column is a bigint(20) with AUTO_INCREMENT. The 'schedule_id' and 'user_id' columns are bigints(20) with UNSIGNED attributes. The 'content' and 'reply' columns are longtexts with utf8mb4_unicode_ci collation. The 'created_at' and 'updated_at' columns are timestamps with NULL default values.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	bigint(20)		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
2	schedule_id	bigint(20)		UNSIGNED	No	None			Change Drop More
3	user_id	bigint(20)		UNSIGNED	Yes	NULL			Change Drop More
4	content	longtext	utf8mb4_unicode_ci		No	None			Change Drop More
5	reply	longtext	utf8mb4_unicode_ci		Yes	NULL			Change Drop More
6	created_at	timestamp			Yes	NULL			Change Drop More
7	updated_at	timestamp			Yes	NULL			Change Drop More

Table 5.4: Data Structure for comment table.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	bigint(20)		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
2	project_id	bigint(20)		UNSIGNED	No	None			Change Drop More
3	task_id	bigint(20)		UNSIGNED	No	None			Change Drop More
4	added_by	bigint(20)		UNSIGNED	No	None			Change Drop More
5	assigned_by	bigint(20)		UNSIGNED	Yes	NULL			Change Drop More
6	assigning_for	bigint(20)		UNSIGNED	Yes	NULL			Change Drop More
7	start_date	datetime			No	None			Change Drop More
8	end_date	datetime			No	None			Change Drop More
9	progress	int(11)			No	0			Change Drop More
10	status	enum('pending', 'accept', 'completed')	utf8mb4_unicode_ci		No	pending			Change Drop More
11	created_at	timestamp			Yes	NULL			Change Drop More
12	updated_at	timestamp			Yes	NULL			Change Drop More

Table 5.4: Data Structure for schedules table.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	bigint(20)		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
2	name	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
3	description	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
4	added_by	bigint(20)		UNSIGNED	No	None			Change Drop More
5	modified_by	bigint(20)		UNSIGNED	Yes	NULL			Change Drop More
6	status	enum('active', 'inactive')	utf8mb4_unicode_ci		No	active			Change Drop More
7	created_at	timestamp			Yes	NULL			Change Drop More
8	updated_at	timestamp			Yes	NULL			Change Drop More

Table 5.5: Data Structure for task table.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	bigint(20)		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
2	name	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
3	email	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
4	mobile	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
5	email_verified_at	timestamp			Yes	NULL			Change Drop More
6	password	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
7	status	enum('active', 'inactive')	utf8mb4_unicode_ci		No	active			Change Drop More
8	remember_token	varchar(100)	utf8mb4_unicode_ci		Yes	NULL			Change Drop More
9	created_at	timestamp			Yes	NULL			Change Drop More
10	updated_at	timestamp			Yes	NULL			Change Drop More

Table 5.6: Data Structure for user table.

5.2 Implementation of Front-end Design

We use to implement the front-end section with HTML and CSS and Bootstrap [6]. To run in localhost server we need XAMPP server and one browser [24]. The following figure described all graphical user interfaces.

Sign In View

In the login view, we have the project title, logo, fields for taking signup information and a sign in button.

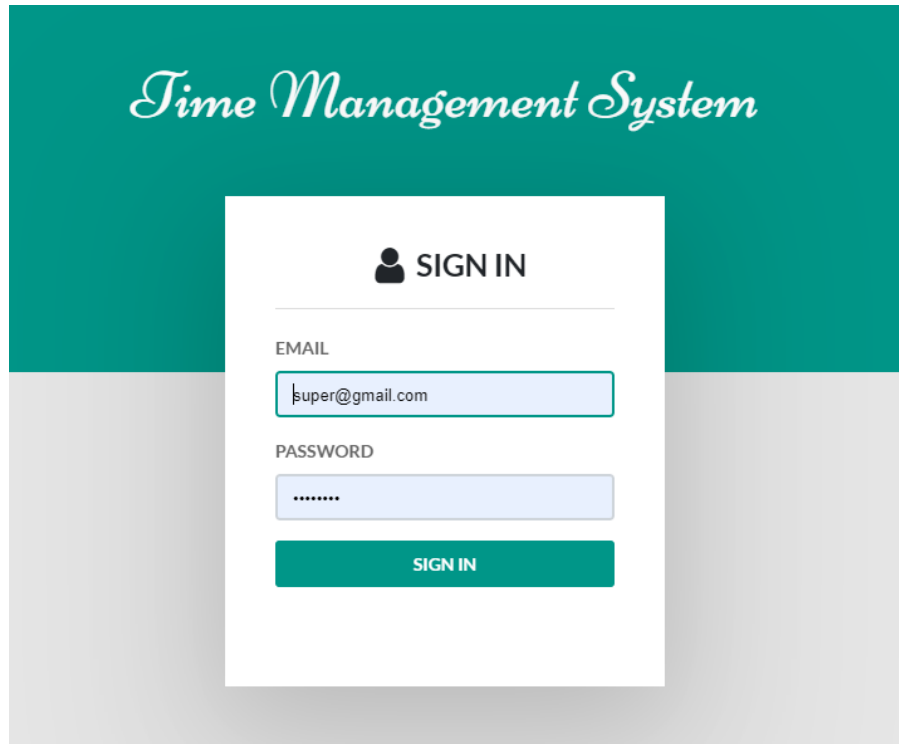


Figure 5.1: Sign In View

Dashboard View

In the dashboard view, we have the project title, logo, fields of task, project, and role management option.

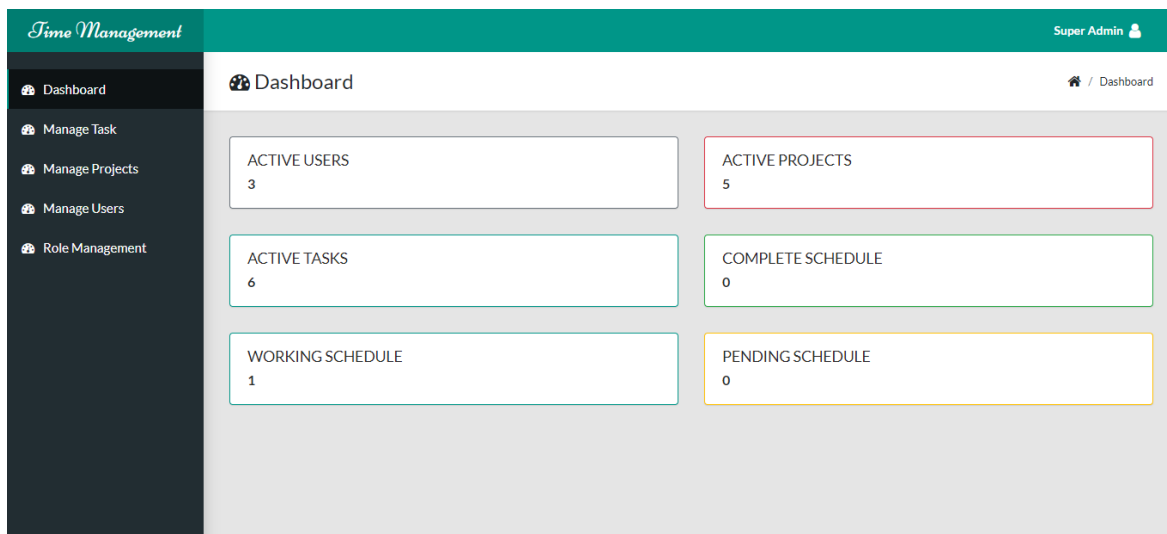


Figure 5.2: Dashboard View

Manage Task View

Manage task view shows all the features of the website. User & Admin can see his own all task. They can edit and add a new task.

The screenshot displays the 'Manage Task View' interface. On the left is a dark sidebar with the 'Time Management' logo and a menu containing 'Dashboard', 'Manage Task', 'Manage Projects', 'Manage Users', and 'Role Management'. The main content area has a teal header with 'Super Admin' and a user icon. Below the header, the page title is 'Task' with a home icon and a breadcrumb 'Task / All Task'. The main section is titled 'All Task' and includes an '+ Add Task' button. It contains a table with the following data:

SI	Name	Description	Created By	Modified By	Status	Action
1	Check bug	Please check the bugs from XYZ project	Name: Super Admin Email: super@gmail.com Mobile: 01710355709	Name: Super Admin Email: super@gmail.com Mobile: 01710355709	Active	<button>Edit</button> <button>Delete</button>
2	Requirement Analysis	Example Description	Name: Admin Email: admin@gmail.com Mobile: 01710355789	This info is not modified yet	Active	<button>Edit</button> <button>Delete</button>
3	Coding	Example Description	Name: Admin	This info is not modified	Active	<button>Edit</button> <button>Delete</button>

Figure 5.3: Mange Task View

The screenshot displays the 'Create Task View' interface. It features the same sidebar as Figure 5.3. The main content area has a teal header with 'Super Admin' and a user icon. Below the header, the page title is 'Task' with a home icon and a breadcrumb 'Task List / Task Create'. The main section is titled 'Create Task' and contains a form with the following fields:

- Name:
- Description:
- Submit

Figure 5.4: Create Task View

Manage Project View

In manage project view, super admin can see all update information by users. Top corner in the right side Super admin & user can edit, delete and view schedule. They are also adding a new project and adding a new schedules.

SI	Name	Description	Tasks	Created By	Modified By	Status	Action
1	Point of sell	Example Description	Check bug	Name: Super Admin Email: super@gmail.com Mobile: 01710355709	Name: Super Admin Email: super@gmail.com Mobile: 01710355709	Active	Edit Delete View Schedule
2	Inventory Management System	Example Description		Name: Super Admin Email: super@gmail.com Mobile: 01710355709	This info is not modified yet	Active	Edit Delete View Schedule

Figure 5.5: All Project View.

Create Project

Name

Description

Add Task

[Submit](#)

Figure 5.6: New Create Project View.

Time Management

Super Admin

Dashboard

Manage Task

Manage Projects

Manage Users

Role Management

Project List

Point of sell

+ Add Schedule

SI	Task Name	Start Date	End Date	Time Remaining	Created By	Assigned By	Assigned For	Progress	Status	Action
1	Check bug	Date: 30 Oct 2021 Time: 12:00 PM	Date: 01 Nov 2021 Time: 12:00 PM	Start time: 30 Oct 2021, 12:00 PM End time: 01 Nov 2021, 12:00 PM Time Remaining: 00:18:12:59	Name: Super Admin Email: super@gmail.com Mobile: 01710355709	Name: Super Admin Email: super@gmail.com Mobile: 01710355709	Name: User Email: user@gmail.com Mobile: 01710355788	50%	Accept	View Comments

Figure 5.7: View Schedule & Progress.

Time Management

Super Admin

Dashboard

Manage Task

Manage Projects

Manage Users

Role Management

Manage Schedule

Point of sell

Add Task

Check bug

Start Date

YYYY-MM-DD HH:MM

End Date

YYYY-MM-DD HH:MM

Submit

Figure 5.8: Add Schedule & Progress.

Manage User View

In mange user view, super admin can see all update information by users. Top corner in the right side Super admin can edit, and delete. Admin also adding a new user and maintain their activity.

The screenshot shows the 'Manage User View' interface. On the left is a dark sidebar with a menu: Dashboard, Manage Task, Manage Projects, Manage Users, and Role Management. The top header is teal with 'Time Management' on the left and 'Super Admin' with a user icon on the right. The main content area has a breadcrumb 'User' and a home icon followed by 'User List'. Below this is a 'User List' section with an 'Add New' button. It contains a table with columns: #, Name, Email, Mobile, Role, and Action. The table lists three users: Super Admin, Admin, and User, each with their respective contact details and role labels. The Action column for each user contains 'Edit' and 'Delete' buttons.

#	Name	Email	Mobile	Role	Action
1	Super Admin	super@gmail.com	01710355709	Super Admin	Edit Delete
2	Admin	admin@gmail.com	01710355789	Admin	Edit Delete
3	User	user@gmail.com	01710355788	User	Edit Delete

Figure 5.9: Mange User View.

The screenshot shows the 'New Create User View' interface. It features the same sidebar and header as Figure 5.9. The breadcrumb is 'User' followed by 'User Create'. The main content area is titled 'Create New User' and contains a form with four input fields: Name, Email (with placeholder 'Enter Email'), Mobile (with placeholder 'Enter Mobile'), and Roles (a dropdown menu currently showing 'Admin'). A green 'Submit' button is located at the bottom left of the form.

Figure 5.10: New Create User View.

Role Management View

In role management view, super admin can see all update information by users. Top corner in the right side Super admin can edit, and delete. Admin also adding a new user and maintain their activity.

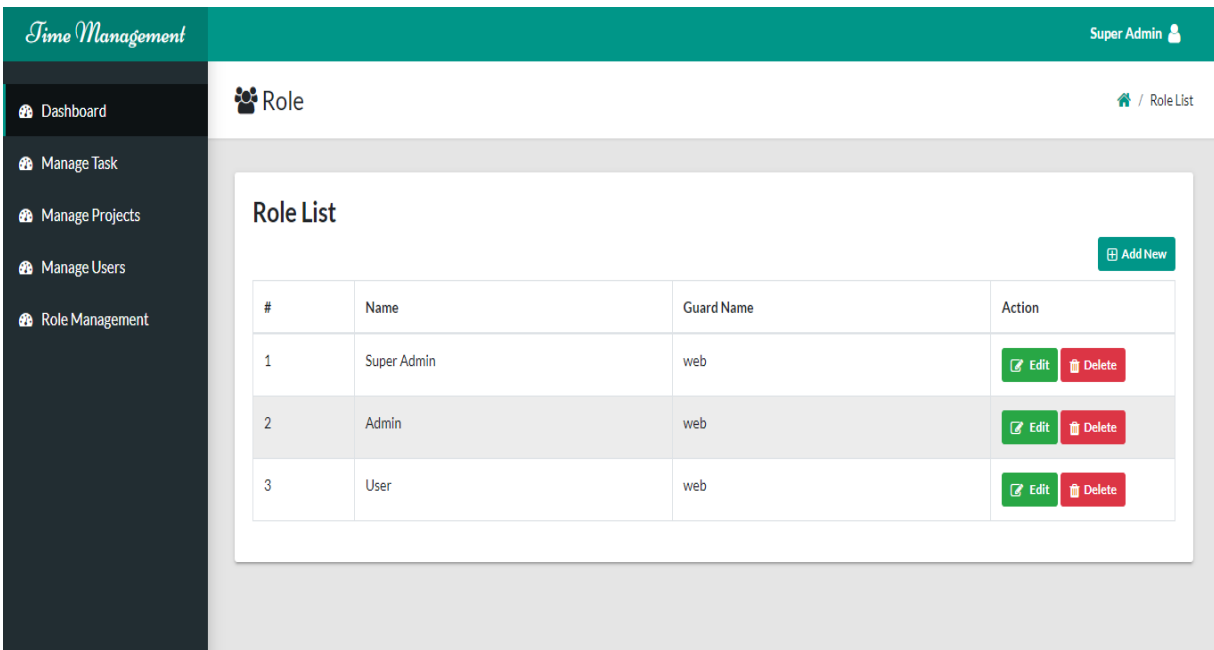


Figure 5.11: Role Management View.

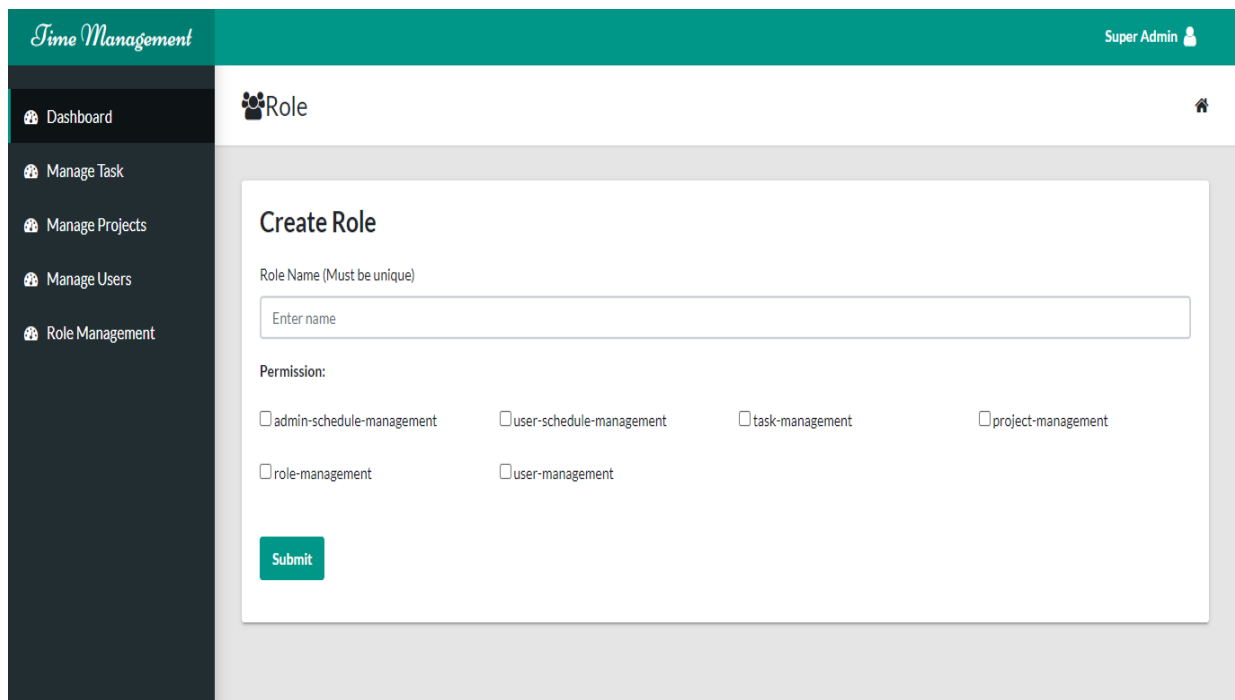
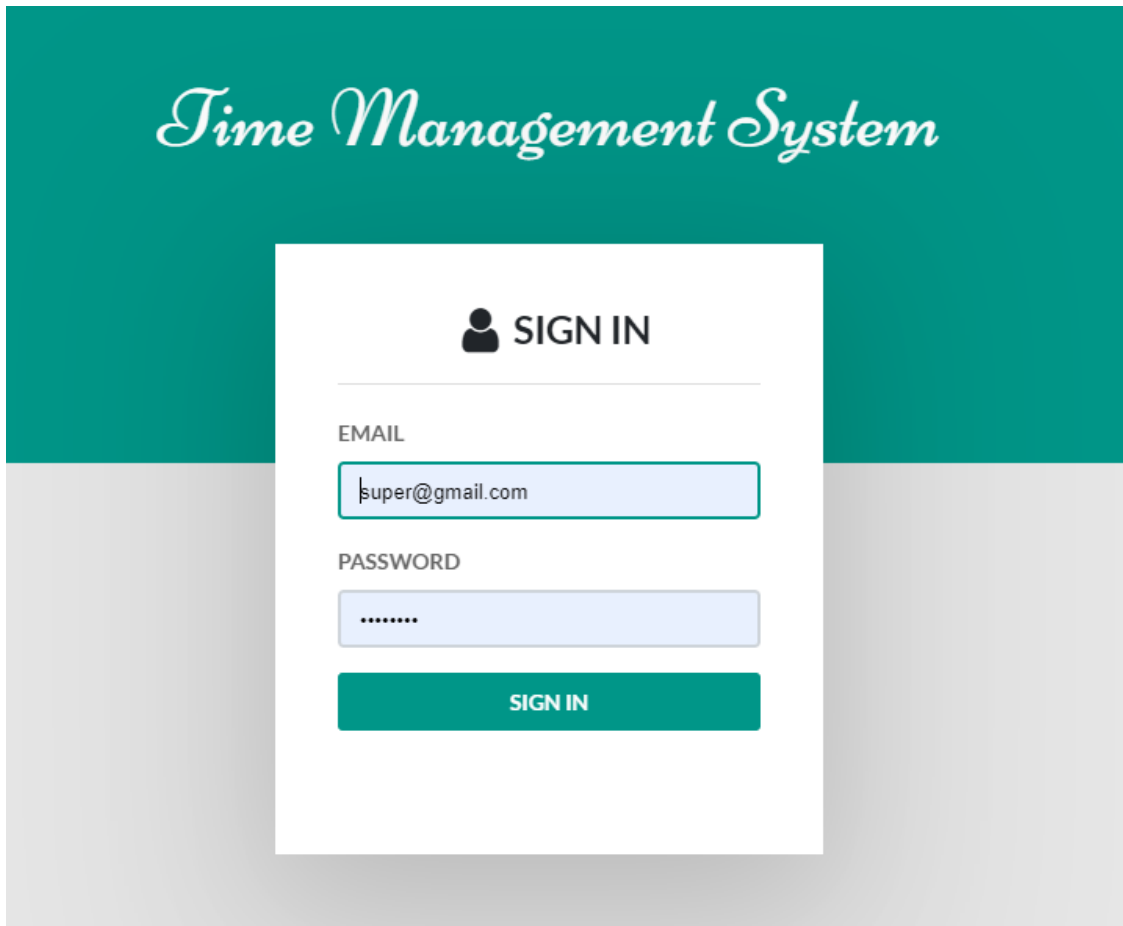


Figure 5.12: Create New Role Management View.

5.3 Testing Implementation

User and Password Error Validation

Whenever a user gives wrong input on password or mobile number, the application will show an error message.



The screenshot displays the 'Time Management System' login interface. It features a teal header with the system name in a white script font. Below the header is a white sign-in box. At the top of this box is a user icon and the text 'SIGN IN'. A horizontal line separates this header from the input fields. The first field is labeled 'EMAIL' and contains the text 'super@gmail.com'. The second field is labeled 'PASSWORD' and contains seven dots, indicating a masked password. Below these fields is a teal button with the text 'SIGN IN' in white capital letters.

Figure 5.13: User and Password Error Validation

A systems quality assurance is a matter of concern. It is very important to assure that the product quality is meeting its goal. The only way to assure the system stability and to assure that the quality is meeting the goal is to test the system more than once. By using different testing methods, a tester can identify the errors and problem. In addition, it helps the developers to solve the problems with further development. Testing is also important to make the developers know is there any lack of something to implement that is necessary to satisfy the users of a system.

A systems quality assurance is a matter of concern. It is very important to assure that the product quality is meeting its goal. The only way to assure the system stability and to assure that the quality is meeting the goal is to test the system more than once. By using different testing methods, a tester can identify the errors and problem. In addition, it helps the developers to solve the problems with further development. Testing is also important to make the developers know is there any lack of something to implement that is necessary to satisfy the users of a system.

There are several types of testing that we have already maintained. They are-

- Unit Testing
- Integration Testing
- System Testing
- Validation Testing
- Acceptance Testing
- Regression Testing

Unit Testing: Unit testing represents them, isolate each part of the process [30]. And also test every unit of the process. Normally unit testing performed by developers before the setup is transferred over to the testing team to formally run the test case. We also test each part of the process, like that Import Process, Database posting, Single Addition, and Modification.

List of unit test to the system-

- Input parameter
- Variable data types
- Data overflowing
- Data receive a response from the server
- Data hash mapping
- Filtering the desired result is working or not
- Database connection
- Session starting and ending
- Exception Handling

Integration Testing: Integration testing is a type of testing that connects pieces of a system to see if they work properly [30]. Integration testing can be carried out in two ways:

- Bottom-up Integration
- Top-down Integration

Bottom-up Integration: The bottom-up approach Unit testing comes first, followed by the trial of logically higher quantity mixes of units termed modules or assemblies.

Top-Down Integration: The highest-level modules were evaluated first, followed by lower-level modules in this testing.

System Testing: This kind of testing examines the entire system. After all of the components have been merged, the application as a whole is tested letter by letter to ensure quality [30]. The specialized testing team is in charge of this type of testing. System testing is crucial since it helps in a variety of ways. The development life cycle is the first phase; second, it verifies functionality; and third, it verifies and validates requirements as well as processor architecture.

Validation Testing: Validation Testing is also another important testing of the test system. Because it measured the durability of the system. We are checking this system with various input in a different field and incorrect use id, password to login to the system.

Acceptance Testing: Probably this is the most significant type of testing in the test system. The testing directed by the quality assurance team. It also finds out the actual accuracy of the system. Acceptance testing finds out the spelling mistakes, interface gaps but also search any bugs in the system.

Regression Testing: Regression testing used to verify the fixed bug that hasn't resulted in another requirement. When the testing finds any fault of the system it does not publish the result its being uncovered in the process. Regression testing also reduces the gaps when testing, verify the new changes, moderate risk when testing is performed and also increase the speed to market the product.

5.4 Test Results and Report

There are different types of error that we had to face while measuring the performance of the system [30]. We got various errors like that library error, input error, mailing error, message error, data type error, syntax error. We were tried to solve the plenty of error but we were not able to solve all of this error.

List of major errors are-

Not declaring the variable type as they meant to be

- Lower-case and Upper-case values
- Data Parsing
- Lots of Syntax error
- Exception handling

We tries to solve this entire problem to get this well-made system and to ensure the best of it to the users.

CHAPTER 6

IMPACT ON SOCIETY, ENVIRONMENT AND SUSTAINABILITY

6.1 Impact on Society

Using this web application, any company or organization can easily monitor their productivity and increase production. People who use this app will be able to see all the details of their project and start working on a new project before or after their project deadline, thus making it easier to increase the productivity of that company or organization. This application is also very easy to manage, so users can easily manage it.

6.2 Limitation

A management approach is essential in most projects. But it shows that it is never enough, there is always another dimension which means "management" and it has some limitations. The limitations of this project are outlined below: -

- Unassigned users will not get any access.
- Normal users or employees will not be able to delete their account.
- Super admin will have access to maintain all the users in this system.
- Users of this system will not be able to block or complain to anyone, but the comments section will be able to share users' problems.
- Employee or normal user will only see his work type and schedule.

6.3 Obstacles & Achievements

As soon as we process this web application, we will solve the inevitable problems and we will add many more features to spark our creativity. PHP is the most popular language for web applications and Laravel is the most secure, popular and powerful framework for PHP language. It is a widely used, free and efficient option for competitors.

CHAPTER 7

CONCLUSION AND FUTURE SCOPE

7.1 Discussion and Conclusion

People loves to have maintain time scheduling in real life. For this reason, we chose to develop this project which will help the people to maintain their time properly. Also, this application can become a platform Educational and Institutions. These services will reduce user's wastage of time and fear as our application is quite resourceful. For this web application we can solve all the existing problems. Through this web application, different companies will be able to increase their productivity and will be able to see the progress of all the projects as well as include all the new projects and complete and review the completed projects.

7.2 Scope for Further Developments

The number of internet and computer users is increasing day by day. The purpose for which this web application was created has already been discussed in detail. We will continue to work to make this project more efficient and easier and try to add many more features to the future, which will be more effective for the User Company or organization. In this project we will use Future AI through which the company will automatically realize that its productivity is increasing and time is being saved. Due to limitation of time, knowledge and experience, we couldn't develop some features of our project. In future, we want to develop those features one by one.

Those features are:

- Develop web application for the better admin maintenance of server and android app.
- Request feedback.
- Publish the web based in international site.
- We would like to implementation for the entire department.
- To enhance the ease of use and capability.
- Increase more functionality for the user's requirements.
- To build up the examination routine for the entire department.

APPENDICES

Appendix: Project Reflection

HTML - HTML stands for Hyper Text Markup Language, and it is the markup language used to create Web pages.

CSS - Cascading Style Sheets (CSS) is an acronym for Cascading Style Sheets. CSS is a style sheet language that describes how a document published in a markup language like HTML should look.

Laravel - Laravel is a free, open-source PHP web framework built by Taylor Otwell and based on Symphony. It is intended for the building of online applications that follow the model–view–controller architectural paradigm.

PHP - PHP (Hypertext Preprocessor) is a server-side scripting language for Web development that can also be used for other purposes.

Java script - JavaScript is a high-level, interpreted programming language that is sometimes abbreviated as JS. It is also known as a dynamic, weakly typed, prototype-based, and multi-paradigm language.

URL - A Uniform Resource Locator, or URL, is a reference to a web resource that identifies its position on a computer network as well as a technique for getting it.

MySQL - MySQL is a relational database management system that is free and open source. "My" is the name of co-founder Michael Widenius's daughter, and "SQL" is the abbreviation for Structured Query Language.

UI & UX - User interface design, also known as user interface engineering, is the process of creating a user interface. UX design stands for user experience design, and UI design is for user interface design. Both are critical components of an IT product and must perform in tandem.

Bootstrap - Bootstrap is a front-end framework for creating websites and online apps that is free and open-source. It includes design templates for typography, forms, buttons, navigation, and other interface elements that are based on HTML and CSS, as well as optional JavaScript extensions.

Project Link: <http://127.0.0.1:8000>

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