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# Design and Implementation of Project and Finance Management System Using PHP and MySQL

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# ABSTRACT

The rapid evolution of web-based technologies has necessitated the development of efficient and userfriendly systems for managing projects and finances in organizations. This paper presents the design and implementation of a Project and Finance Management System using PHP and MySQL. The system is a web-based application that facilitates the management of projects, employee attendance, and financial records for businesses. The project management module allows administrators to create, assign, and track projects, while employees can log their attendance and update project statuses. The finance management module enables the management of customer accounts, account types, and account statuses through CRUD (Create, Read. Update, Delete) operations. The system is built using XAMPPv3.3.0, PHP, MySQL, HTML, CSS, JavaScript, Ajax, jQuery, Bootstrap, and Admin LTE. It features a responsive and intuitive user interface, ensuring ease of use for both administrators and employees. The system also includes reporting and analytics capabilities, allowing for the generation of printable reports for projects, attendance, and financial records. By centralizing project and financial data, the system enhances organizational efficiency, reduces time and costs, and improves collaboration among stakeholders.

**Keywords:** Project and Finance Management System, web-based application, project and financial data, CRUD, PHP, JavaScript, MySQL.

# **1. INTRODUCTION**

A current problem occurring in a few companies is the lack of well-thought-out work organization. The severity of the problem increases if the role of the company is to provide its premises to employees who use them for organizing various projects. For this type of organization, optimal planning and occupancy management of the premises is very important. The traditional way of dealing with this often involves complex, time-consuming manual administrative tasks, which often lead to disorganization and errors in the form of various collisions. It is precisely this type of task that should be automated in the right way. The ideal solution is to use a Project and Finance Management System that is efficient, flexible, and easy to use, both for the administrators who manage the data and for the employees.



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In the modern era of digital transformation, organizations are increasingly adopting web-based solutions to streamline their operations, enhance productivity, and reduce operational costs. Among the critical areas requiring efficient management are **project management** and **financial record-keeping**. Traditional methods of managing projects and finances, often reliant on manual processes, are prone to inefficiencies, errors, and delays. To address these challenges, this paper presents the design and implementation of a Project and Finance Management System using **PHP** and **MySQL**. This web-based application is designed to automate and centralize project management, employee attendance tracking, and financial record management, providing a comprehensive solution for businesses to improve their operational efficiency.

The **Project Management System** module is a core component of this application, enabling organizations to efficiently manage and distribute projects among employees. It includes features such as project creation, assignment, tracking, and status updates, ensuring that projects are completed on time and within scope. The system incorporates an **employee attendance management system**, allowing employees to log their attendance online. The system automatically computes working hours, reducing administrative burden HR departments. The application supports the on two user roles: Admin and Employee. Admin users have full access to manage projects, attendance, and employee records, while employees have limited access to view and update their assigned projects and attendance. The system also includes reporting capabilities, enabling administrators to generate printable daily reports for projects and attendance, thereby facilitating better decision-making.

The **Finance Management System** module complements the project management functionality by providing a platform for managing customer accounts, account types, and account statuses. This module supports **CRUD** (**Create, Read, Update, Delete**) operations for each list, allowing management to store, retrieve, and update records efficiently. The system also includes a **dashboard** that provides a summary of financial records, offering insights into the organization's financial health. Additionally, the application generates printable reports using the **TCPDF Library**, ensuring that financial data is easily accessible and presentable. The integration of project and finance management into a single system enhances collaboration, reduces redundancy, and ensures data consistency across the organization.

The system is developed using a combination of modern web technologies, including **XAMPP v3.3.0**, **PHP**, **MySQL**, **HTML**, **CSS**, **JavaScript**, **Ajax**, **jQuery**, **Bootstrap**, and **AdminLTE**. These technologies ensure a robust, scalable, and user-friendly application.

The use of **Bootstrap** and **AdminLTE** provides a responsive and intuitive user interface, making the system accessible across various devices. The integration of **Ajax** and **jQuery** enhances the user experience by enabling dynamic content updates without page reloads. By leveraging these technologies, the system offers a comprehensive solution for organizations to manage their projects and finances effectively, ultimately leading to improved productivity, cost savings, and better decision-making.



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The implementation of the — Project and Finance Management system should improve the organization of the entire company. A very important function of the system should be the ability to notify administrators and employees, for example by email messages, about events related to the creation and modification tasks. Administrators could also be able to edit assigned tasks to the employees. A great advantage of the Project and Finance Management system would also improve productivity and cost savings.

# ANALYSIS OF PROJECT AND FINANCE MANAGEMENT

The role of Project and Finance Management system systems is to make work more efficient, whether for employees or external users. The main disadvantage of Project and Finance Management system is the need to specify them for a specific project. It is downright impossible to create a unique Project and Finance Management system to meet the needs for every company. Ease of use for the user is also an important aspect. The Project and Finance Management system must be easy to use.

# A. Project Management Module Analysis

The Project Management Module is designed to streamline the creation, assignment, and tracking of projects within an organization. The module supports two user roles: Admin and Employee. Admin users have full access to manage projects, including adding new projects, updating project details, and deleting projects. They can also assign projects to employees and generate printable daily project reports. On the other hand, employees have limited access, allowing them to view and update the status of assigned projects. The module also includes an attendance management system, where employees can log their attendance online. The system automatically computes working hours, reducing the administrative burden on HR departments. This module enhances organizational efficiency by centralizing project-related information, ensuring that projects stay on schedule, and providing valuable insights through reporting and analytics.

# **B.** Finance Management Module Analysis

The Finance Management Module provides a platform for managing customer accounts, account types, and account statuses. This module supports CRUD (Create, Read, Update, Delete) operations for each list, enabling the management to store, retrieve, and update records efficiently. The module includes a dashboard that provides a summary of financial records, offering insights into the organization's financial health. The application generates printable reports using the TCPDF Library, ensuring that financial data is easily accessible and presentable. The integration of project and finance management into a single system enhances collaboration, reduces redundancy, and ensures data consistency across the organization. This module is particularly beneficial for finance businesses that need to manage client accounts and generate detailed financial reports.

# C. Impact on Organizational Efficiency

The Project and Finance Management System significantly improves organizational efficiency by automating and centralizing critical business processes. The Project Management Module ensures that projects are completed on time and within scope, while the attendance management system reduces the administrative burden on HR departments. The Finance Management Module provides a comprehensive platform for managing financial records, enabling organizations to make informed decisions based on accurate and up-to-date information. The system's reporting and analytics capabilities further enhance decision-making by providing valuable insights into project progress, employee performance, and



financial health. By leveraging modern web technologies, the system offers a scalable and user-friendly solution that can be adapted to the needs of various organizations.

# 2. TECHNOLOGIES FOR CREATING WEB APPLICATIONS

The design and implementation of web applications, especially for systems like Project and Finance Management, require the use of various technologies to ensure efficiency, scalability, and user-friendliness. The combination of server-side and client-side technologies plays a significant role in the overall performance and usability of the system. This section discusses the key technologies used in the development of the Project and Finance Management System, which include PHP, MySQL, HTML, CSS, JavaScript, and other frameworks.

# A . PHP: Server-Side Scripting Language

PHP (Hypertext Preprocessor) is the primary server-side scripting language used in the development of both the Project Management System and the Finance Management System. PHP is a versatile language known for its ability to efficiently handle dynamic content generation and database interaction. It allows developers to create robust and scalable applications by interacting seamlessly with databases like MySQL, handling form submissions, session management, and performing server-side validation. Its ability to integrate easily with HTML and CSS makes it an ideal choice for creating dynamic and interactive websites. Additionally, PHP provides excellent support for managing user authentication, file handling, and performing complex business logic required for both project and finance management functionalities.

# B. MySQL: Relational Database Management System

For data storage and management, MySQL, an open-source relational database management system (RDBMS), is employed in both systems. MySQL is known for its high performance, reliability, and ease of use. It allows the seamless storage of information such as project details, attendance logs, employee and admin data, as well as customer and account information. The relational model used by MySQL ensures that data is well-organized, and queries can be executed quickly to retrieve the required information. The use of MySQL helps in the efficient management of large datasets and supports complex queries and relationships, which is essential for the performance of a project and finance management system. Additionally, its compatibility with PHP further enhances the development process by simplifying the integration of database operations.

# C. HTML: Structure and Content Presentation

HTML (Hypertext Markup Language) is the backbone of the web page structure and is fundamental to creating the layout of the Project and Finance Management System. It defines the structure of web content through tags, including headings, paragraphs, tables, forms, links, and other elements. HTML ensures that the content is organized in a way that is accessible and viewable across different browsers. It is essential for presenting data to users in a readable and accessible format. By using HTML, the developer can create well-structured web pages that display dynamic content generated by PHP and data retrieved from the MySQL database. The role of HTML is fundamental in creating interactive, user-friendly, and visually organized web pages.

# **D. CSS: Styling and User Interface Design**

CSS (Cascading Style Sheets) is used to style the HTML elements and define the visual layout of the



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web pages. It plays a critical role in enhancing the aesthetics of the Project and Finance Management Systems. CSS allows for the control of fonts, colors, spacing, and overall layout, making the application visually appealing and easy to navigate. The use of CSS ensures that the web application has a responsive design, which is vital for user interaction on various devices such as desktops, tablets, and smartphones. Through CSS, the user interface is designed to be intuitive and user-friendly, ensuring that both the administrative users and employees find it easy to manage projects, attendance, or financial records.

# E. JavaScript: Enhancing Interactivity

JavaScript is a dynamic programming language used to add interactivity and enhance user experience on the frontend of web applications. It enables features like form validation, dynamic content updates, event handling (such as clicks and user input), and asynchronous operations (AJAX calls). In the Project Management System, JavaScript is used for operations such as real-time updating of project status, managing time clocking for employee attendance, and validating input data before it is submitted to the server. JavaScript makes the user interface more engaging by enabling live updates, error handling, and interactivity without requiring page reloads, which significantly enhances the responsiveness of the application.

# F. AJAX: Asynchronous Data Exchange

AJAX (Asynchronous JavaScript and XML) is a set of web development techniques used to create dynamic and interactive user interfaces. It allows web pages to update asynchronously by exchanging small amounts of data with the server behind the scenes. This technology is particularly useful in the Project and Finance Management Systems where data such as project updates, attendance status, or financial records need to be fetched or modified without reloading the page. By leveraging AJAX, the application ensures that users have a seamless experience with quick updates and reduced server load, improving performance and making the application more responsive.

# G. jQuery: Simplifying JavaScript Tasks

jQuery is a fast and lightweight JavaScript library that simplifies the process of handling DOM manipulation, events, animations, and AJAX requests. It is used extensively in both the Project and Finance Management Systems to simplify and speed up frontend development. jQuery makes it easier to implement interactive features like dropdown menus, modals, and form validation without writing complex JavaScript code. Its cross-browser compatibility ensures that the application works uniformly across different web browsers, providing consistency for users regardless of the platform.

# H. Bootstrap: Responsive Web Design

Bootstrap is a popular open-source front-end framework used to design responsive and mobile-first websites. It is based on HTML, CSS, and JavaScript, and it includes pre-built components like buttons, modals, navigation bars, and grids that significantly speed up the design process. The Project and Finance Management Systems make use of Bootstrap to create a clean, modern, and responsive design. By using Bootstrap, the developers can ensure that the web applications are compatible with a wide range of devices, providing a consistent user experience whether accessed on a desktop, tablet, or smartphone.

#### I. Font Awesome: Iconography

Font Awesome is an icon library that provides scalable vector icons that can be customized with CSS. In both the Project and Finance Management Systems, Font Awesome is used to enhance the user interface with intuitive and visually appealing icons. These icons help users quickly understand the



actions available to them, such as adding new records, deleting items, or generating reports. The use of Font Awesome icons contributes to a more polished and professional-looking application, improving overall usability and navigation.

# J. AdminLTE: Admin Dashboard Framework

AdminLTE is an open-source admin dashboard template based on Bootstrap. It is used in the Project and Finance Management Systems to provide an intuitive and user-friendly admin interface. AdminLTE offers a variety of pre-built components and widgets for displaying data, such as tables, charts, and forms. By integrating AdminLTE into the system, the developers can provide administrative users with an organized, functional, and easy-to-navigate dashboard. The dashboard allows admin users to manage projects, employees, and finances efficiently, streamlining the overall management process.

# 3. WEB APPLICATION SECURITY

Securing web applications from various attacks is an important part of web application development. It is important to prevent attackers from retrieving data from a database that contains sensitive data, such as emails, phone numbers, and more. Wherever the user enters data, it is necessary to treat this data to protect ourselves from XSS attacks. According to the authors in [8], application security is important because security flaws can have a devastating effect on the personnel or economic level. From the outset, it is important not to underestimate safety. Most security problems arise when there is a lack of knowledge and lack of emphasis on security in the early stages of web application development. Crosssite request forgery (CSRF) attacks are also dangerous. They are performed by an attacker performing an unwanted action for which he is not authorized, such as sending a request to a server without filling in the form. The OWASP software security site is useful for studying various attacks and security flaws.

#### A. Protection against XSS attacks

XSS attacks exploit a security flaw in scripts such as untreated input. An attacker could use this attack to insert malicious JavaScript code into a page if the inputs were not treated. The list XSS as the most common type of attack in web pages using PHP. This is a potential security issue if we need to display user- supplied content. PHP includes features for handling content. If the texts contain HTML code that needs to be displayed, then this can be a big danger and then we must come up with some other solution. It is necessary to use a library that can handle the DOM (Document Object Model). A well- known library is DOM Purify. One possible client-side treatment is for content to be treated before it is displayed. Another solution is to use server-side content treatment. One of the best ways for PHP is the HTML Purifier library. This library is used by several CMS systems to handle content. HTML Purifier uses an allowlist instead of a blocklist. So only what is safe is allowed. This approach is better, because if something new is added where a security vulnerability could occur, it will not be possible in HTML Purifier, because it is disabled by default.

#### B. Mechanisms for database protection

An important element of a web application is a database. We should not underestimate the protection of the database. One of the dangerous attacks is SQL injection. The SQL injections are the main way attackers attack today and seriously compromise the security of web applications. Many inexperienced programmers do not handle user input, thus creating a security threat. If the inputs are not treated, an attacker can enter SQL code and, for example, retrieve data from a database.



If we want to protect ourselves against SQL injection, there are different ways to do so. The first important step is always to treat the inputs. One of the possible ways to protect against SQL injections is to use parameterized queries. The PHP scripting language has two different classes for communicating with databases - PDO and MySQLi. Both classes contain prepared statements. Both have their advantages and disadvantages.

#### C. Data protection

An important part of a web application is data protection. This part must not be underestimated. The data is a critical resource in many organizations and therefore effective access to data is needed. Web applications are becoming increasingly popular, but security is neglected, and attackers can steal, alter or delete data. As Project and Finance Management systems may also contain sensitive data, data security must not be underestimated during development. Sites that display personal data for a given Project and Finance Management must be protected from the entry of foreign persons so that only the administrator or the specific person who created the Project and Finance Management has access to them.

# 4. PROJECT AND FINANCE MANAGEMENT SYSTEM DESIGN

When creating a web application, it is important to design the system. The aim is to create a Project and Finance Management system through which Project and Finance Managements can be created, approved, or managed. The problem with current Project and Finance Management systems is the lack of functions and, in the case of commercial systems, the high price. Our goal is to create a comprehensive, efficient system with many functions. The application must be clear and provide administrators with the ability to manage the entire system easily and efficiently. The security of the system is certainly also an important element, as the database stores sensitive user data, which must be protected against theft.

#### A. Database design

The system uses MySQL as the relational database management system (RDBMS). The database is designed to store and manage data related to projects, employee attendance, customer accounts, account types, and account statuses. Key database tables include:

Projects Table: Stores project details such as project name, description, assigned employee, and status.

Attendance Table: Stores employee attendance records, including clock-in and clock-out times.

Users Table: Stores user details, including admin and employee users.

Customers Table: Stores customer details, including name, contact information, and account status.

Account Types Table: Stores different types of accounts (e.g., savings, current).

Account Statuses Table: Stores account statuses (e.g., active, inactive).



#### B. Project Management Module:

MyFinance		🕒 Sign out
Dashboard Customer	Dashboard	
🏜 Customer Type	Greate new account     If Manage account     ● Print all account	
Accounts Type	CUSTOMER ACCOUNT OPENING FORM	
Accounts status	New Account created successfully	×
SAVED REPORTS Current month	Account number	
Last quarter	749615475	
Social engagement Year-end sale	Customer information Select one	¢
	Account Type	
	Selectione	•

Admin Features: The admin user has full access to manage projects, employee attendance, and system users. Key features include:

Project Management: Add, edit, update, view, and delete projects.

Attendance Management: Track employee attendance, including clock-in and clock-out times.

User Management: Add, edit, update, and delete admin and employee users.

**Reporting:** Generate printable daily reports for projects and attendance.

Employee Features: Employees have limited access to the system. Key features include:

Project Management: View and update the status of assigned projects.

Attendance Management: Log attendance (clock-in and clock-out) and view attendance records.

#### C. Administration panel design

The administration panel is an essential part for the organization's employees. Without a quality panel, Project and Finance Managements are difficult to manage. Therefore, we tried to ensure that the admin panel provided as many settings as possible. It is necessary to log in to the administration system using email and password. Of course, system security is an important part. Passwords are stored in the database using special functions for one-way password encryption. Brute force testing of passwords is also avoided. Figure 1 shows the home page of the admin panel. Our panel is fully customizable and adapts to all screen sizes. The administrator has no problem performing a task with his mobile device. Restricting users' privileges should also be an important feature. Not every administrator should have the right to approve and modify Project and Finance Managements or manage rooms, services, and the like. In our system it is possible to set their rights for administrators.





Figure 1. Administrator panel

#### IMPLEMENTATION OF PROJECT AND FINANCE MANAGEMENT SYSTEM

When developing a web application, it is important to determine which technologies will be used. We opted for the PHP scripting language for the back end and the scripting language JavaScript was used for the front-end. A MySQL database is used to store data. We opted for the Apache web server, for its great configuration options and for its popularity. Of course, it is not a problem to transfer a web application to another web server. The web application uses the Bootstrap framework. Thanks to it, the site adapts to different resolutions and devices. Our goal was to create the most efficient and secure Project and Finance Management management system that can automate many tasks and make work easier for administrators.

#### A. Implementation of Support

Great emphasis in the development of a web application must be placed on various functions that solve a certain problem or enrich the whole solution. One of the necessary parts is communication with the database. This is one of the most important aspects of a web application. Also, very vulnerable. As for the features that enrich the system, it is the generation of CSV, PDF, or iCal files. Email alerts are an important feature of the system. It is important to send a confirmation to the user who made the Project and Finance Management and then notify the system administrators.

The most important element of a web application is the database. We used a MySQL database. There are several ways to connect to a database in PHP. As part of our Project and Finance Management system, we have decided to use the PDO class. The advantage of our Project and Finance Management system is that it is easy to put into operation. The system contains a config file where the user enters the data needed to connect to the database during the first setup. After entering the necessary data, the system connects and can work with the database immediately. We use prepared queries to secure against SQL injections. It is recommended to use this method especially when user input is entered into the database, because it automatically treats the user and prevents SQL injections.

#### **B.** Implementation of the administration panel

An important part of the system is the administration panel. Its task is to display data and manage the project and finance management system. Access to the admin panel is secure and only privileged users can access the system. Of course, each user has their rights, which determine what they can do in the system, such as manage, approve, and reject request of employees, add or edit tasks or many other



activities.

After successful login, the user will be taken to the Dashboard. The Dashboard provides a quick overview of upcoming events. at the top are squares with information.

#### C. Architecture and Technology Stack

The Project and Finance Management System is built with a Model-View-Controller (MVC) architecture. This separation of concerns ensures that the application is easy to maintain, scalable, and secure. The front-end (View) communicates with the back-end (Model) through PHP, which processes requests and interacts with the MySQL database. The application logic is handled by the Controller, which coordinates user interactions and updates the database accordingly.

The technology stack includes:

XAMPP v3.3.0: Used for running the PHP server locally.

PHP: The primary scripting language for server-side logic.

MySQL: The relational database management system for storing user, project, and financial data.

HTML/CSS: For web page structure and styling.

JavaScript/jQuery/Ajax: For dynamic content updates without reloading the page.

Bootstrap: For responsive design and an intuitive user interface.

AdminLTE: For an efficient and customizable admin panel.

# D. Entity Relationship Diagram (ERD)

The **Entity Relationship Diagram** (**ERD**) helps to visualize the relationships between the entities in the system's database.

- Entities:
- **Users**: Represents both employees and admins.
- **Projects**: Stores details about the projects.
- Attendance: Tracks employees' clock-in and clock-out times.
- **Clients**: Represents client information.
- Accounts: Stores account-related details, which are linked to clients.
- Relationships:
- A User can be assigned multiple Projects.
- A Project can have multiple Attendance records.
- Clients can have multiple Accounts.
- Accounts have specific Account Type
- E. Flowchart for Admin

The Flowchart for Admin represents the process flow for admin users managing the system. It typically



includes the following steps:

- 1. **Login**: Admin logs in to the system.
- 2. **Manage Projects**: Admin can view, add, update, or delete projects.
- 3. **Manage Employees**: Admin manages employee records and attendance.

4. **Generate Reports**: Admin generates printable reports (e.g., daily project report, attendance report).

5. **Logout**: Admin logs out of the system.

FlowChart :

[Start] --> [Login] --> [View Assigned Projects] --> [Update Project Status] --> [Clock In/Clock Out] --> [Logout] --> [End]

#### *F.* User Model Diagram

The User Model Diagram represents the system users and their roles. It includes two main user roles:

- Admin User:
- Can manage all the system features, such as projects, attendance, employees, and reports.
- Can manage both admin and employee users.
- Employee User:
- Can only view and update assigned projects.
- Can clock in and out to track attendance.



#### G. Database Tables Structure

The **Database Tables Structure** outlines the relationships between various database tables involved in the project and finance management system. Here are the tables and their relationships:



- Users Table:
- Fields: user\_id, username, password, role (Admin or Employee).
- Projects Table:
- Fields: project\_id, project\_name, description, status, assigned\_to (foreign key to users table).
- Attendances Table:
- Fields: attendance\_id, user\_id (foreign key to users table), clock\_in, clock\_out.
- Clients Table:
- Fields: client\_id, client\_name, contact\_details.
- Accounts Table:
- Fields: account\_id, client\_id (foreign key to clients table), account\_type, account\_status.

#### H. Login and Registration Process Flowchart

This Login and Registration Process Flowchart illustrates the process an admin or employee undergoes to log in or register in the system:



#### *I.* System Architecture Diagram

The **System Architecture Diagram** shows the layers and components of the system:

- 1. Client Side:
- The user interacts with the front-end, which uses HTML, CSS, JavaScript, and Bootstrap.
- 2. Server Side:
- The server processes requests using PHP and handles logic.

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3. **Database Layer**:



• The MySQL database stores and retrieves data related to users, projects, attendance, clients, and accounts.

The **Project and Finance Management System** is a web-based application designed to automate the management of projects and finance records for businesses. It is developed using **PHP** as the programming language and **MySQL** for database management. This system aims to streamline and automate the process of managing projects and financial data for organizations, enhancing the efficiency of the project management team and ensuring accurate data management. This system supports role-based access for both **Admin** and **Employee** users, where the admin has full access to project management and employee records, while employees can only manage their assigned projects and log attendance.

The system features an intuitive **user interface** built using **Bootstrap** and provides functionalities such as project assignment, employee attendance tracking, and the ability to generate printable reports. Additionally, it integrates financial management features, allowing businesses to manage customer accounts, account types, and statuses. The application ensures **improved organization** by centralizing project and financial data in an easily accessible and updatable format, ultimately saving time and reducing costs for the company.

Certainly! Below is the detailed **Implementation** section of the project "Design and Implementation of Project and Finance Management System Using PHP and MySQL" formatted in IEEE base paper style.

# AA. Implementation of Project and Finance Management System

The implementation of the Finance Management System involves several stages, from setting up the environment to coding the backend logic and designing the frontend interface. This section outlines the key implementation steps for the Finance Management System, developed using PHP, MySQL, and other supporting technologies such as HTML, CSS, Bootstrap, and TCPDF for report generation.



# 1. System Setup and Environment Configuration

The development of the Finance Management System began by setting up the necessary development environment. XAMPP v3.3.0, an open-source cross-platform web server solution package, was used to install and configure Apache, MySQL, and PHP. XAMPP allowed for local development and testing, ensuring that the system could be accessed via a web browser for testing and troubleshooting. PHP (Hypertext Preprocessor) was chosen as the server-side scripting language due to its widespread usage, flexibility, and ease of integration with MySQL for database management. MySQL, an open-source relational database management system, was used for storing the application's data, including customer, account, and status information.

# 2. Database Design and Management

The database schema for the Finance Management System was designed to efficiently handle the information related to clients, accounts, account types, and statuses. Several tables were created in MySQL to store the required data:

• **Customers Table: Stores** information about the customers, including customer name, address, contact information, etc.

• Account Types Table: Contains different types of accounts such as savings, checking, etc.

• Account Status Table: Tracks the current status of accounts, such as active, inactive, closed, etc.

• Accounts Table: Holds information about individual accounts, including the customer ID, account type ID, and status ID.

• **Customer Types Table**: Contains types of customers (individual, corporate, etc.).

Each table is linked to others through foreign key relationships, ensuring data integrity and consistency. The use of MySQL's relational model allows for the easy retrieval and management of customer and account information.

# **3. CRUD Operations Implementation**

One of the primary functions of the Finance Management System is its ability to perform CRUD (Create, Read, Update, and Delete) operations on various entities within the system, such as customers, account types, and account statuses. The system was developed with these functionalities in mind, and each entity in the application has a corresponding page where administrators can:

• Add New Records: A form is provided for adding new customers, account types, account statuses, etc., with input validation to ensure that all fields are correctly filled.

• **View Records**: The system allows for viewing the complete list of customers, account types, and other entities stored in the database. Each record can be viewed in a tabular format, and the details of any specific record can be accessed by clicking on it.

• **Update Records**: The system enables administrators to update any information regarding customers, account types, or statuses. Updates are made via pre-populated forms, where users can modify data and save the changes back to the database.

• **Delete Records**: The Finance Management System provides a delete function that allows administrators to remove records from the database. These actions are performed with appropriate



confirmation dialogues to prevent accidental data loss.

All CRUD operations are implemented using PHP for server-side processing, ensuring that data is handled securely and efficiently. The interaction between the PHP backend and the MySQL database is accomplished through SQL queries executed via PHP's MySQLi extension.

### 4. User Authentication and Security

To ensure the system's security, the Finance Management System features secure login and logout functionalities for administrators. Passwords are hashed using PHP's built-in password\_hash() function before being stored in the database, enhancing security by preventing the storage of plaintext passwords. The login system verifies user credentials against the stored credentials in the database and grants access only if the provided username and password match. Upon successful login, administrators are redirected to a secure dashboard, where they can manage customers, account types, account statuses, and generate reports.

Additionally, session management is used to maintain a secure user session after login, ensuring that unauthorized users cannot access the system's protected areas.

#### 5. Dashboard and User Interface Design

The user interface (UI) of the Finance Management System was designed to be simple, intuitive, and responsive. The dashboard is the central hub of the system, providing quick access to various management functions, such as customer type management, account management, and customer management. It also displays summaries of the records and provides quick links to generate printable reports for the various entities.

The frontend design utilizes **Bootstrap**, a popular open-source CSS framework, to ensure the system is fully responsive and accessible across devices with different screen sizes. Bootstrap's pre-built components, such as buttons, navigation bars, tables, and modals, were used to accelerate the UI development process and ensure a consistent look and feel. Custom CSS was also applied to further refine the design and match the business requirements.

#### 6. Report Generation

A key feature of the Finance Management System is its ability to generate printable reports. For instance, reports can be generated for customer details, account details, and account statuses. This functionality was implemented using **TCPDF**, a PHP library that allows for the generation of PDF files directly from the web application. The generated PDF files can be downloaded or printed, allowing management to have physical copies of the reports for record-keeping and analysis.

Each list in the application includes a "Print" button, which triggers the generation of a PDF document containing the details of the selected records. These reports are structured and formatted in a professional layout, making them easy to read and understand.



# 7. Error Handling and Data Validation

To ensure a seamless user experience, comprehensive error handling and data validation mechanisms were implemented across the system. On the client-side, JavaScript and HTML5 form validation were used to ensure that all required fields are filled and that data types are correct before submission. On the server-side, PHP checks for missing or invalid data and returns appropriate error messages, guiding the user to correct the input.

This section outlines the detailed implementation process of the Finance Management System, which includes setting up the environment, database design, CRUD operations, authentication, report generation, error handling, and the user interface. The chosen technologies (PHP, MySQL, Bootstrap, TCPDF) allowed for a seamless development process, and the system meets the business requirements effectively.

#### 8. Conclusion:

The Project and Finance Management System developed using PHP and MySQL offers a comprehensive solution for managing both projects and financial records in an organization. By leveraging modern web technologies like Bootstrap, AJAX, and AdminLTE, the system provides a user-friendly and responsive interface for both Admin and Employee users. This dual-functionality system empowers businesses to streamline their operations and enhances productivity by automating project assignments, tracking employee attendance, and managing financial records.

One of the key strengths of this system is its ability to centralize and efficiently organize project and financial information. Admin users can easily manage projects, assign them to employees, and generate reports on project progress and employee attendance, ensuring that critical data is always up-to-date and easily accessible. This organization aids in improved decision-making, as managers can quickly assess the status of projects and monitor employee performance through the system's analytics and reporting capabilities.

The finance management module integrates seamlessly with the project management system, enabling businesses to track and manage client accounts, account types, and account statuses with ease. The inclusion of CRUD (Create, Read, Update, Delete) functionalities for managing customer records and accounts ensures that all client-related activities are handled efficiently. Furthermore, the integration of the TCpdF library allows for the generation of printable lists, making it easier for the management to create hard copies of records for administrative or audit purposes.

The attendance management system within the platform provides automated tracking of employee working hours. By offering a simple yet effective clock-in/clock-out feature, the system automatically calculates attendance duration, saving time and reducing the chances of manual errors. This enhances employee accountability and ensures that attendance records are accurate and accessible for future reference.

From a technological perspective, the project leverages widely-used frameworks and libraries such as XAMPP, PHP, MySQL, Bootstrap, and AdminLTE, ensuring that the system is both reliable and scalable. The adoption of a responsive and clean interface built using Bootstrap ensures that the application is accessible from various devices, whether it's a desktop, tablet, or smartphone, contributing



to a more flexible working environment.

Moreover, the system's security features, including secure login and role-based access control, ensure that sensitive data is protected and that users only have access to the features they are authorized to use. The Admin role, in particular, has full control over user management, allowing for the addition, deletion, and modification of both employee and admin records, which helps maintain an organized and secure system.

MyFinance		🕒 Sign out
Dashboard	Dashboard	
🖶 customer		
to Customer Type	Create new account   Manage account  Print all account	
Accounts Type		
Accounts	CUSIOMER ACCOUNT OPENING FORM	
Accounts status	New Account created successfully	x
SAVED REPORTS	Account number	
Current month Last quarter	748615475	
Social engagement	Customer Information	
Year-end sale	Select one	÷
	Account Type	
	Select one	÷
	Account status	

The integration of MySQL for the backend database provides a reliable and efficient means of handling large amounts of data, ensuring that the system performs well even as the volume of projects, clients, and employee records increases over time.

This web-based solution is a powerful tool for companies looking to manage their projects and finances more effectively. Moving forward, additional features like file sharing, version control, and deeper integration capabilities could further expand the system's functionality and improve collaboration within team.

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