“Employee Management System”

Department of Computer Science and Engineering

Bangladesh University of Business and Technology

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Bangladesh University of Business and Technology

"Employee Management System"

A Project Report

submitted to the Department of Computer Science and Engineering in partial fulfilment of the requirements for the degree of Bachelor of Science in Computer Science and Engineering

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DECLARATION OF AUTHORSHIP

We hereby declare that this project titled “Employee Management System” and the work presented in it are our own. We confirm that:

- This work was done wholly or mainly while in candidature for a B.Sc Engineering in CSE degree at this University.
- This software development project has been explicitly stated where some part of it has previously been applied for a degree or other certification at this University or another institution.
- Where we have quoted from the work of others, the source is always given. With the exception of such quotations, this project is entirely our own work.
- We have acknowledged all primary sources of help.
- The project is based on work done by ourselves jointly with others; we have made clear exactly what was done by others and what we have contributed ourselves.

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APPROVAL

This project "**Employee Management System**" Submitted by **Md. Tahmidul Huque, Jafreen Jafor Godhuli, Rajiur Rahman Pushon, Fabia Zaman Ekah, Ehtashamul Haque, ID No. 19202103158, 19202103227, 19202103214, 19202103225, 19202103130** Department of Computer Science and Engineering (CSE), Bangladesh University of Business and Technology (BUBT) under the supervision of **T.M. Amir-Ul-Haque Bhuiyan, Assistant Professor, Department of Computer Science and Engineering** has been accepted as satisfactory for the partial fulfilment of the requirement for the degree of Bachelor of Science (B.Sc. Eng.) in Computer Science and Engineering and approved as to its style and contents.

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ABSTRACT

Employee Management System is a distributed application, developed to maintain the details of employees working in any organization. It maintains the information about the personal details of their employees, also the details about the payroll system which enable to generate the payslip. The application is actually a suite of applications developed using PHP, CSS and Javascript. It is simple to understand and canbe used by anyone who is not even familiar with simple employee system. It is user friendly and justasks the user to follow step by step operations by giving him few options. It is fast and can perform many operations of a company. This software package has been developed using the powerful codingtools of PHP at Front End and Microsoft SQL Server at Back End. The software is very user friendly. The package contains different modules like Employee details. This version of the software has multi-user approach. For further enhancement or development of the package, user's feedback will be considered.

Chapter 1
Introduction

1.1 Introduction

This Employee Management System Project application stores all the employee's information in a database. The entire system is designed to enhance a company's operations and controls and manages the information at all levels. It also allows employees to view information in real time in order to increase productivity. Earlier systems were manual where there was no way of properly storing information. Employee records were stored manually which led to errors. There was no proper way of tracking employee records. It was very difficult and required a lot of paperwork which made the application time consuming and not secure. There was no administrator which could handle the records. In these circumstances, the updated system Employee management system is an easy to use application which is created to manage the employee data. This reduces the dependency on the manual system which could create errors. It will keep records of the company's operations where data can be found very easily using search operation and also edited and updated just in a second.

Employees are more than just labors or support operators for your thriving business. They are the central source of your productivity, which is why understanding the significance of employee performance and Employee Management Systems (EMS) can assist you further. Earlier systems were manual where there was no way of properly storing information. Employee records were stored manually which led to errors. It was very difficult and required a lot of paperwork which made the application time consuming and not secure. There was no administrator which could handle the records. So there was the need to develop a system which could manage all these things and reduce the paperwork. That's why we've established this system EMS which is an easy to use application that can manage the employee data and more operations of a company. This reduces the dependency on the manual system which could create errors. In today's world where technology is considered as the key to success, we now have the opportunity to thank smart technology systems like EMS for improved performance. The EMS provides insights for your business like no other. Workers can enjoy a timely payroll and will be more efficient, all while the system regularly maintains employee attendance, working hours, tracking worker location via GPS, and supports the payroll process for companies. The system can manage a remote worker's activities,and introduce reliable methods for attendance logs and entries to admin and HR departments

1.2 Motivation

In this project we can manage the database system. Here user can collect the information and an admin can manage the system. We have analyzed some software and some of them are nnecteam.com, Bitrix24, monday.com, seba. From all of them we have got some problems. Basically among all of them, the admin has to update their employees information time to time and has to delete the old information due to short storage. We have tried to solve all these problems in our system. We manage everything from the admin panel smoothly.

.1.3 Problem statement

- Need Faster Computer for Start Project.
- There is little reuse of assets between projects.
- Inconsistency in data entry, room for errors.
- Large ongoing staff training cost.
- Duplication of data entry.
- Reduction in sharing information and customer services.
- Time consuming and costly to produce reports.
- System is dependent on good individuals.
- Lack of security of data.

1.4 Aims and Objectives

Objective of the employee management system is developing a simple, cheap and reliable system to achieve the goal of making records and salary calculation of employees easy and genuine. We aim to develop a system that prevents cheating by employees and make sure they get proper documents of their information, facilities to update information or make applications. This system is developedwith the main objective to solve the problem of small

factories and businesses that are still using pen and paper to maintain staff records. These industries even face many clashes with employees as most of the staff working here is from labor class and they really do hard work to earn, so our system will put an effort to reduce these clashes and will make sure that these workers get each penny of their work. This system will save a lot of time for the employer and reduce the tension of handling information of employees. So, they can focus on other things and develop their businesses.

1.5 Features and Scopes of proposed project

Admin Panel:

- **Login:** When an admin tries to use the system, he must login in order to use it.
- **Dashboard:** After login, a dashboard is shown having many options to choose.
- **View employee details:** Admin can view all the details of each employee.
- **Add employee details:** When a new employee joins the company, his record issaved in the database.
- **Delete employee details:** When a employee leaves the company, his record is deleted in thedatabase.
- **Update employee details:** Whenever an employee needs to change his details, admin can updateit in the database.
- **Assign Project:** Admin can assign any task or project to the employees with due date.
- **Project Status:** Admin can see all the status of the employees which was assigned by him/her.
- **Employee leave application:** Admin can view and update the status of every application from employees.
- **View/Update salary:** Here salary information is stored for each employee.

User Panel:

- **Login:** After registration process the user must login with ID and Password.
- **Dashboard:** After login, a user dashboard is showed including all the Employee Leaderborad, individual due projects, salary status, leave status.
- **View details:** User will be able to view every detail stored in the system.
- **Update profile details:** User can update his personal details here, Password can be changed if needed.
- **Project Status:** Here user can submit and see their assigned projects given by admin.
- **Apply for leave:** If the user wants a leave from the company he'll fill-up this form which will be directly shown in the admin panel for future procedure. He can also view status of his application from here.
- **View salary details**: Here salary details can be seen with bonus points.

1.6 Project Overview

Employee Management System is a distributed application, developed to maintain the details of employees working in any organization. It maintains the information about the personal details of their employees, also the details about the payroll system which enable to generate the payslip. The application is actually a suite of applications developed using Java.

It is simple to understand and can be used by anyone who is not even familiar with simple employees system. It is user friendly and just asks the user to follow step by step operations by giving him few options. It is fast and can perform many operations of a company.

This software package has been developed using the powerful coding tools of PHP, CSS, javascript at Front End and Microsoft Sql Server at Back End. The software is very user friendly. The package contains different modules like Employee details. This version of the software has multi-user approach. For further enhancement or development of the package, user's feedback will be considered.

Chapter 2
Requirements Analysis

2.1 Language

• **PHP:** PHP is a server side scripting language. that is used to develop Static websites or Dynamic websites or Web applications. PHP stands for Hypertext Pre-processor, that earlier stood for Personal Home Pages. PHP scripts can only be interpreted on a server that has PHP installed. The client computers accessing the PHP scripts require a web browser only.

• **CSS:** Cascading Style Sheets is a style sheet language used for describing the presentation of a document written in a markup language such as HTML or XML. CSS is a cornerstone technology of the World Wide Web, alongside HTML and JavaScript. Cascading Style Sheets is a style sheet language used for describing the presentation of a document written in a markup language such as HTML or XML. CSS is a cornerstone technology of the World Wide Web, alongside HTML and JavaScript.

• **JavaScript:** JavaScript is a dynamic programming language that's used for web development, in web applications, for game development, and lots more. It allows you to implement dynamic features on web pages that cannot be done with only HTML and CSS. Many browsers use JavaScript as a scripting language for doing dynamic things on the web. Any time you see a click-to-show dropdown menu, extra content added to a page, and dynamically changing element colors on a page, to name a few features, you're seeing the effects of JavaScript.

2.2 Software Requirement

• **Visual Studio Code:** Visual Studio Code, also commonly referred to as VS Code, is a source-code editor made by Microsoft with the Electron Framework, for Windows, Linux and macOS. Features include support for debugging, syntax highlighting, intelligent code completion, snippets, code refactoring, and embedded Git.

• **XAMPP:** XAMPP is a free and open-source cross-platform web server solution stack package developed by Apache Friends, consisting mainly of the Apache HTTP Server, MariaDB database, and interpreters for scripts written in the PHP and Perl programming languages. Since most actual web server deployments use the same components as XAMPP, it makes transitioning from a local test server to a live server possible.

2.3 Hardware Requirement

Developer:

• Processor: Intel core i7 8700K
• RAM: 8 GB DDR4
• Operating System: Windows 10 Pro 64 Bit

User End:

• Memory Space: Minimum – 100 , Recommended – 150MB
• Operating System: Windows 7 32Bit
• Processor: Intel Core i3, 1GHZ or above
• Ram: 256MB or above

Chapter 3
Development Model and Diagram

3.1 Development Model

Develop this employee management system we will choose the SDLC model.
The reason behind choosing SDLC model is given below:

- It provides an effective framework and method to develop software applications.
- It helps in effectively planning before starting the actual development. SDLC allows developers toanalyze the requirements.
- It helps in reducing unnecessary costs during development. During the initial phases, developerscan estimate the costs and predict costly mistakes.
- It enables developers to design and build high-quality software products. This is because theyfollow a systematic process that allows them to test the software before it is rolled out.
- It provides a basis when evaluating the effectiveness of the software. This further enhances thesoftware product.

3.2 Data Flow Diagram (DFD):

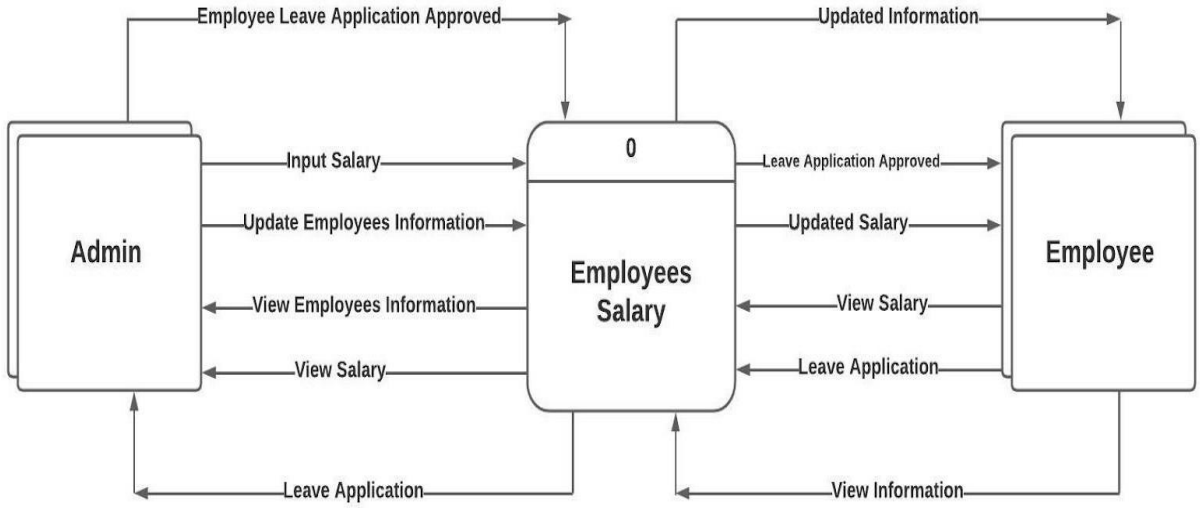

Figure: Data Flow Diagram of Employee Management System

Data flow diagrams are used to graphically represent the flow of data in a business information system. DFD describes the processes that are involved in a system to transfer data from the input to the file storage and reports generation. Data flow diagrams can be divided into logical and physical. The logical data flow diagram describes flow of data through a system to perform certain functionality of a business. The physical data flow diagram describes the implementation of the logical data flow.

3.3 ER-Diagram:

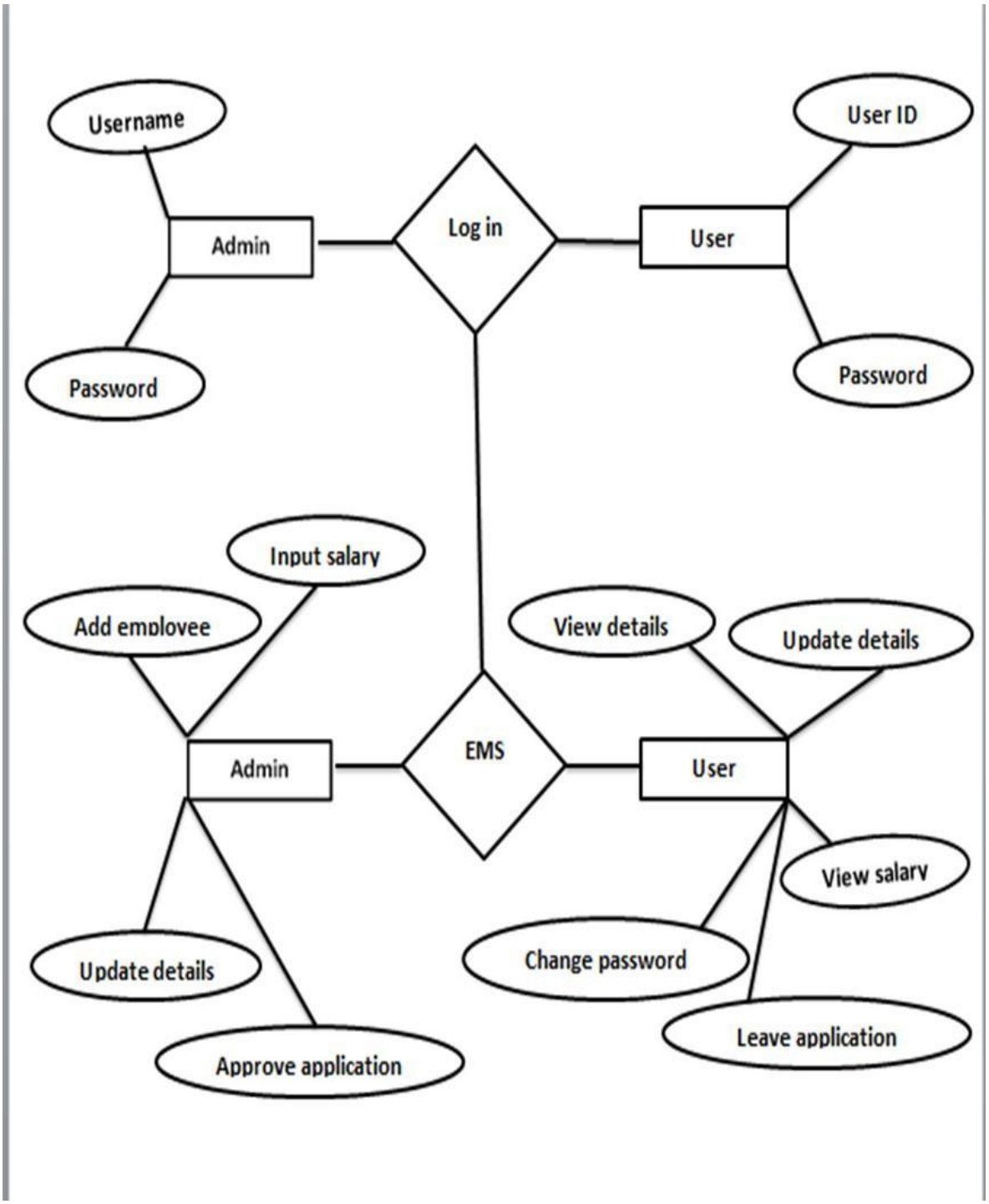

Figure: ER- Diagram of Employee Management System

ER (Entity Relationship) Diagram represents the model of Project Management System Entity. The entity-re lationship diagram of Project Management System shows all the visual instrument of database tables and the rela tions between Employee, Task, Project, Ticket etc. It used structure data and to define the relationships between structured data groups of Project Management System functionalities.

3.4 Use Case Diagram:

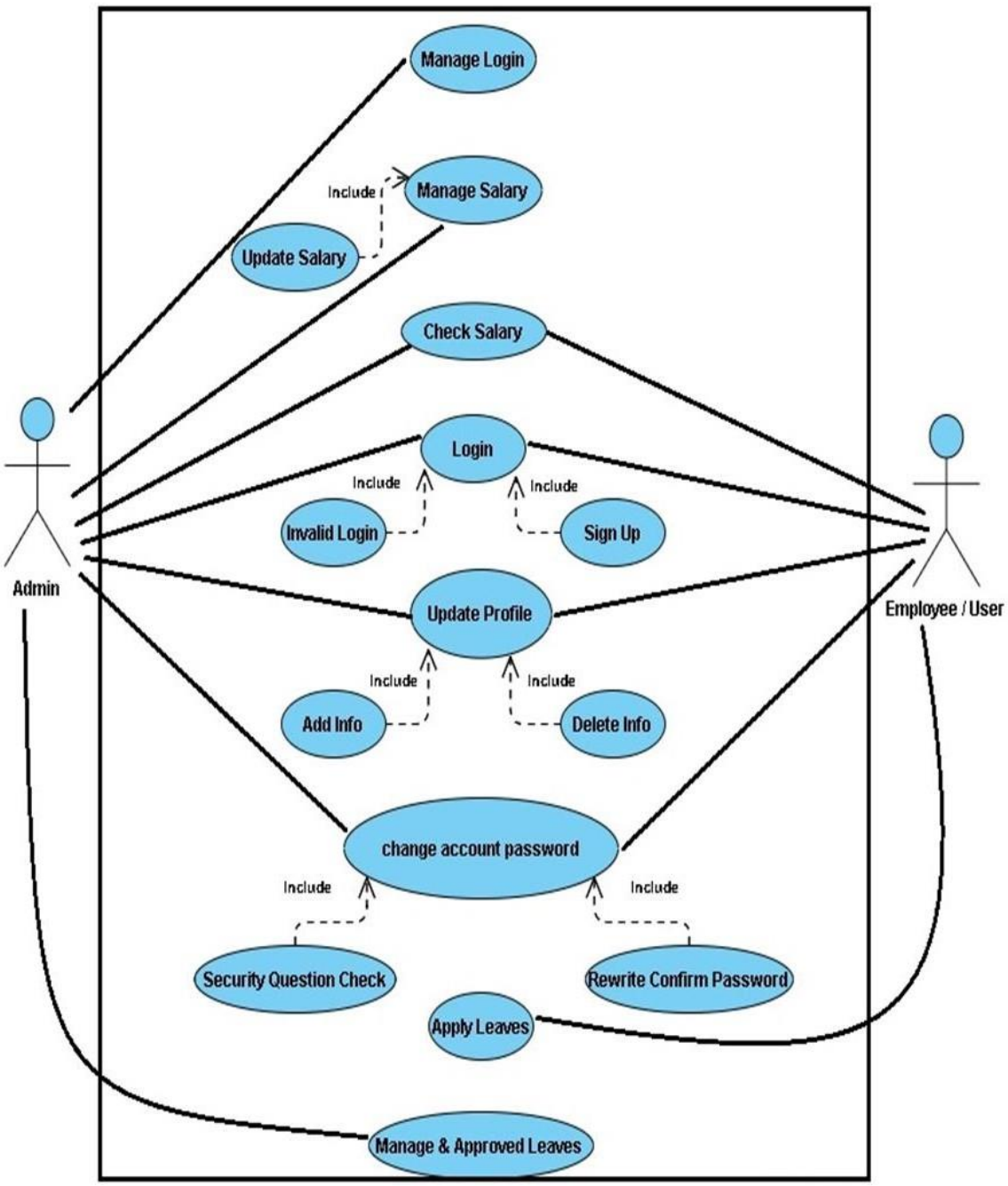

Figure: Use Case Diagram of Employee Management System

A use case diagram is a way to summarize details of a system and the users within that system. It is generally shown as a graphic depiction of interactions among different elements in a system. Use case diagrams will specify the events in a system and how those events flow, however, use case diagram does not describe how those events are implemented.

3.5 Gantt Chart:

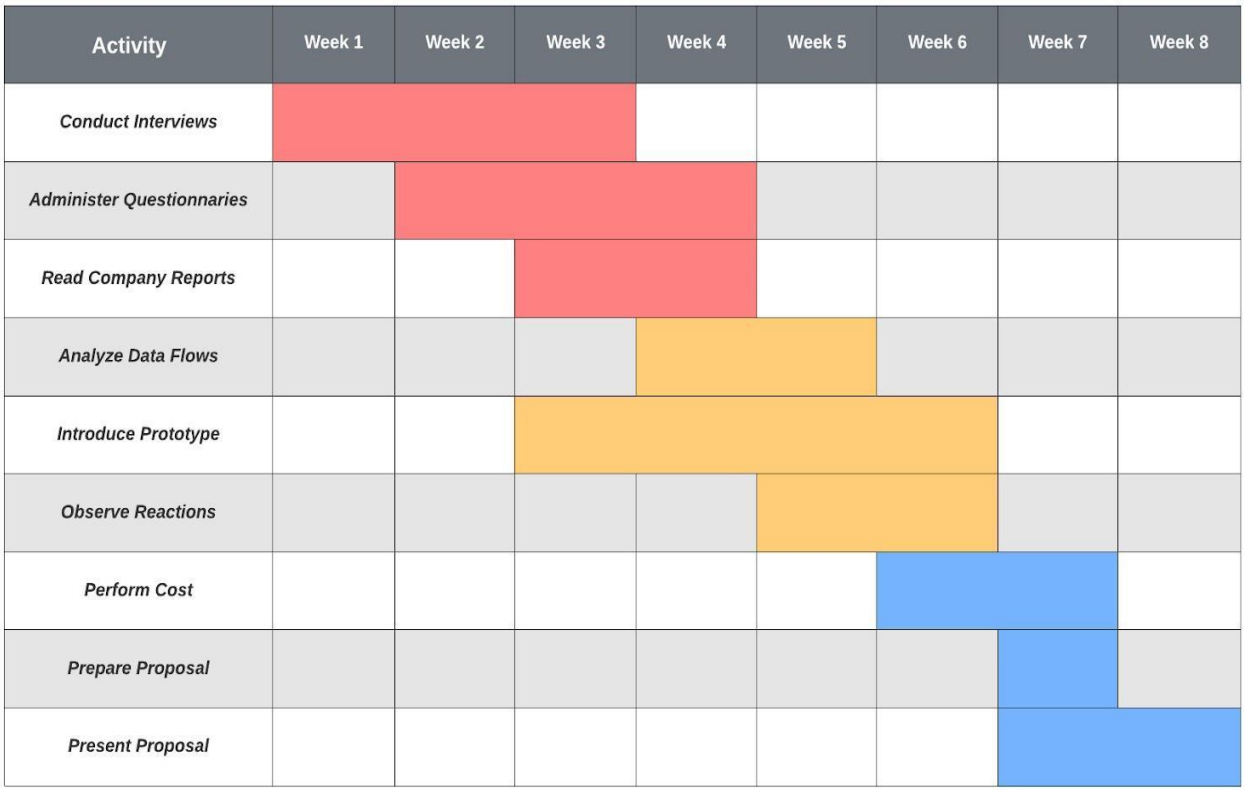

Figure : Gantt Chart of Employee Management System

Gantt Charts are commonly used for tracking project schedules, and they are especially useful in project management. To put it simply, they illustrate and allow you to know what needs to be done, and when it needs to be done. Gantt charts are also able to show additional information regarding the different tasks or sections of a project, such as how far have tasks progresses, how a group of tasks might depend or other groups of tasks, how important several tasks are, and resources are being used within a project.

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Chapter 4
Implementation and Testing

4.1 Detail Design and Implementation

This phase of the systems development life cycle refines hardware and software specifications, establishes programming plans, trains users and implements extensive testing procedures, to evaluate design and operating specifications and/or provide the basis for further modification.

4.2 Technical Design

This activity builds upon specifications produced during new system design, adding detailedtechnical specifications and documentation.

4.3 Test Specifications and Planning

This activity prepares detailed test specifications for individual modules and programs, job streams, subsystems, and for the system as a whole.

4.4 Programming and Testing

This activity encompasses actual development, writing, and testing of program units or modules.

THE STEPS IN THE SOFTWARE TESTING

The steps involved during Unit testing are as follows:

a) Preparation of the test cases.
b) Preparation of the possible test data with all the validation checks.
c) Complete code review of the module.
d) Actual testing done manually.
e) Modifications done for the errors found during testing.
f) Prepared the test result scripts,

The unit testing done included the testing of the following items:

1) Functionality of the entire module/forms.
2) Validations for user input.
3) Checking of the Coding standards to be maintained during coding.
4) Testing the module with all the possible test data.
5) Testing of the functionality involving all type of calculations etc.
6) Commenting standard in the source files.

After completing the Unit testing of all the modules, the whole system is Integrated with all its dependencies in that module. While System Integration, We integrated the modules one by one and tested the system at each step. This helped in reduction of errors at the time of the system testing.

The steps involved during System testing are as follows:

- Integration of all the modules/forms in the system.
- Preparation of the test cases.
- Preparation of the possible test data with all the validation checks.
- Actual testing done manually.
- Recording of all the reproduced errors.

Modifications done for the errors found during testing.

4.5 User Training

This activity encompasses writing user procedure manuals, preparation of user training materials, conducting training programs, and testing procedures.

Acceptance Test : A final procedural review to demonstrate a system and secure user approval before a system becomes operational.

Installation Phase : In this phase the new Computerized system is installed, the conversion to new procedures is fully implemented, and the potential of the new system is explored.

System Installation : The process of starting the actual use of a system and training user personnel in its operation.

Review Phase : This phase evaluates the successes and failures during a systems development project, and to measure the results of a new Computerized Tran system in terms of benefits and savings projected at the start of the project.

Development Recap : A review of a project immediately after completion to find successes and potential problems in future work.

Post-Implementation Review : A review, conducted after a new system has been in operation for some time, to evaluate actual system performance Also identifies maintenance projects to enhance or improve the system. against original expectations and projections for cost-benefit improvements.

Chapter 5
User Manual and Outcome

5.1 Index

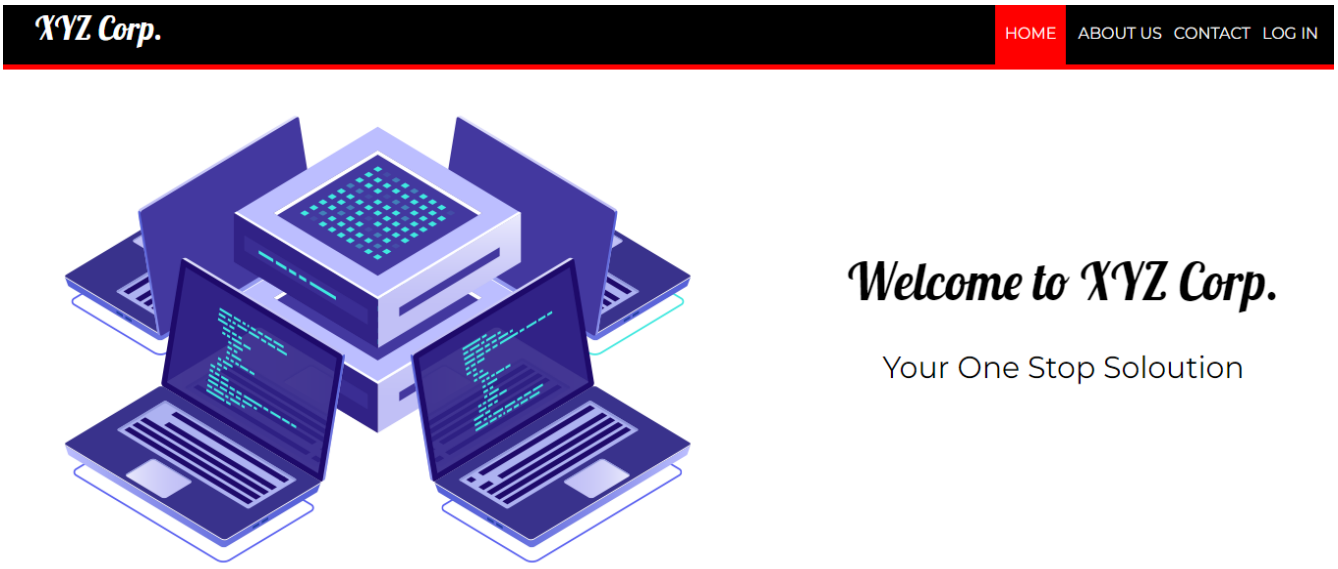


Figure 1: Index page of project

This is the first interface of Employee Management System. There is four button which is Home, About Us, Contact and Login. In the Login Button there are two module which is Admin and Employee. Admin button is for Admin panel and Employee button is for Employees. .

5.2 Admin Login

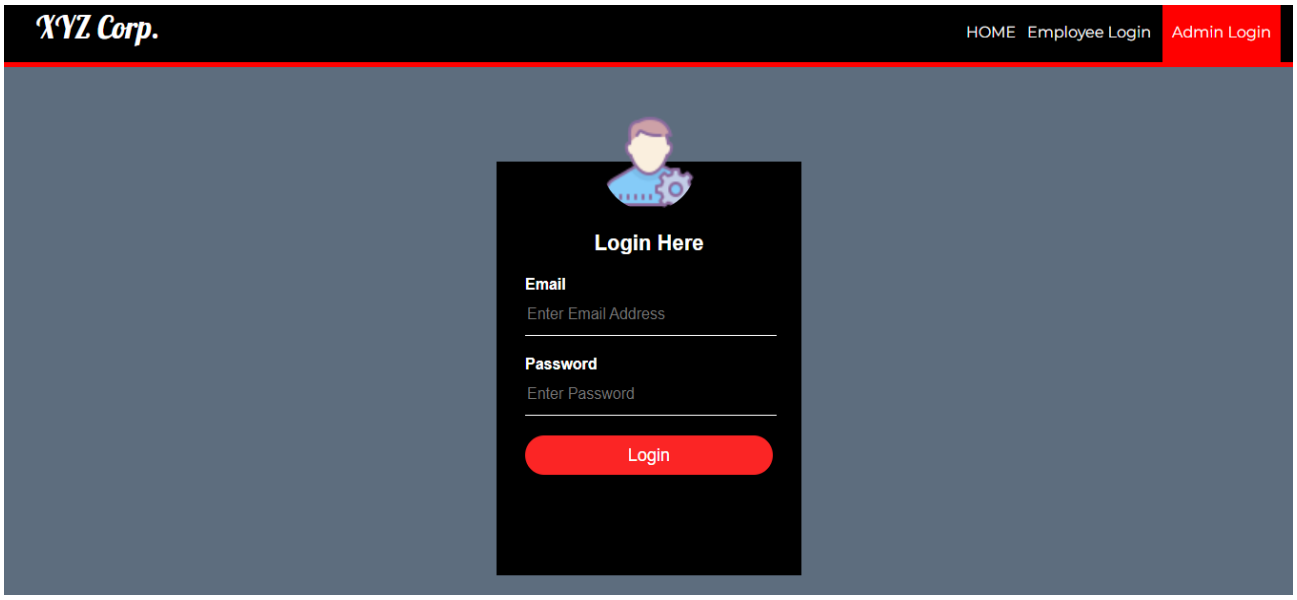


Figure 2: Admin login page

This is the admin login page. Where admin have to input his/her User Name and Password to run this system.

5.3 Admin Dashboard

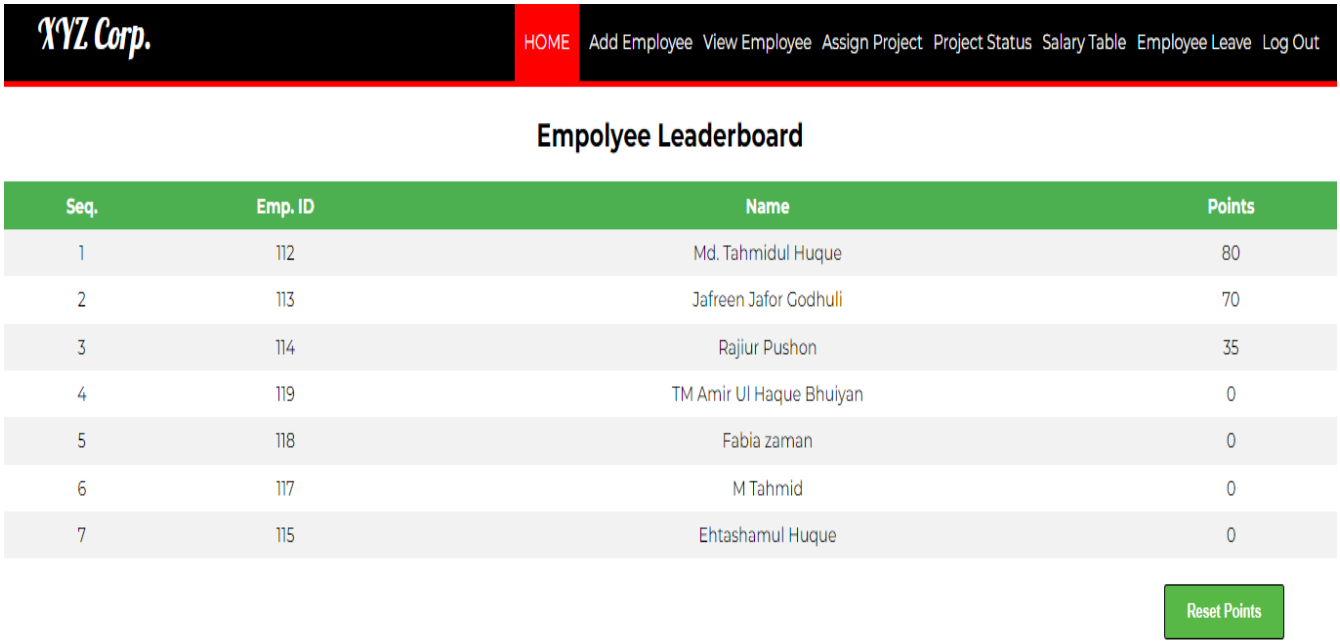


Figure 3: Admin dashboard

Here is the Admin Dashboard from where admin can use all the module of the system.

5.4 View Employee

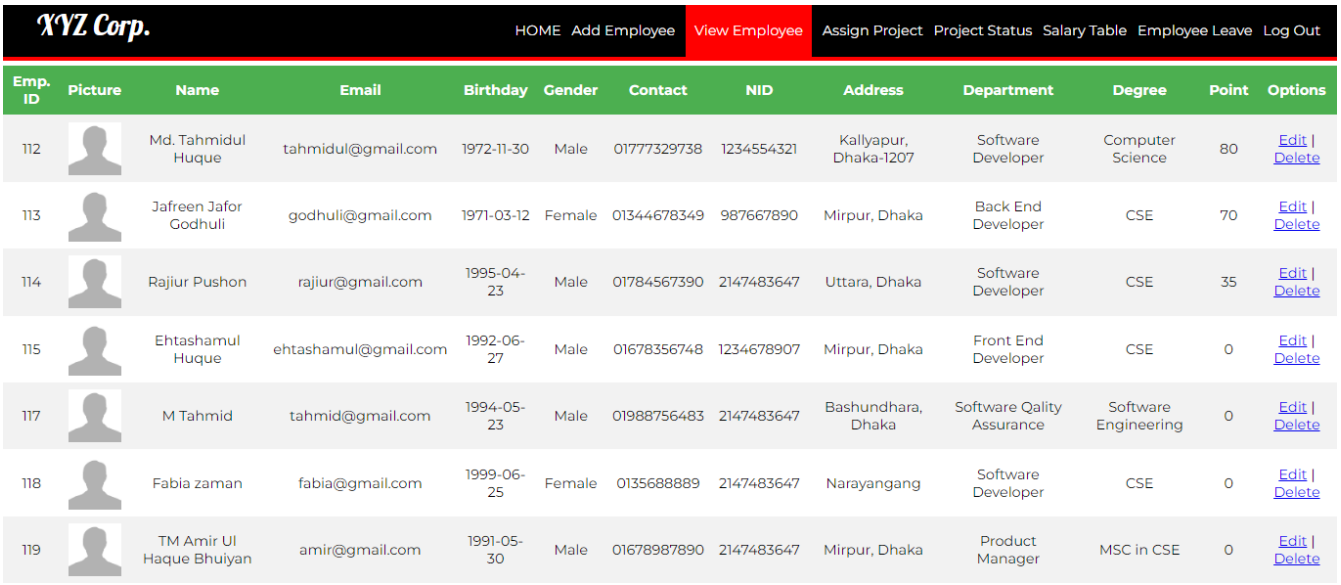


Figure 4: View Employee page

This is the View Details page of our systems from where admin can view any employees details/information of the organization or company.

5.5 Add Employee

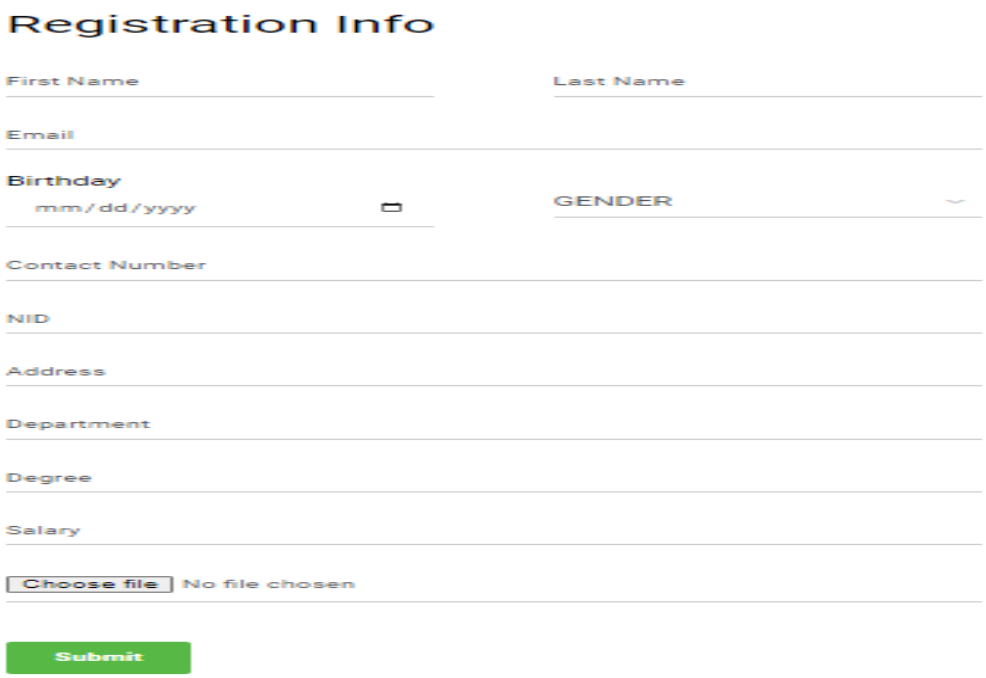


Figure 5: Add employee page

Admin can add new employee in the database from this section.

5.6 Assign Project

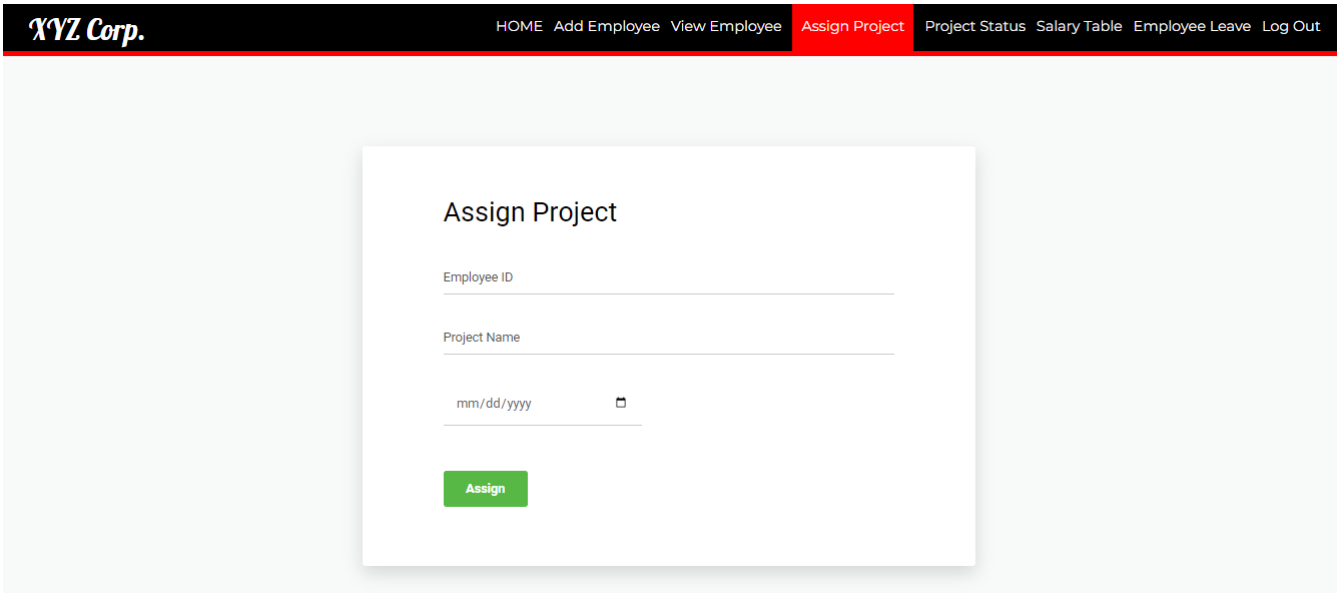


Figure 6: Assign Project page

Admin can assign any task to the employees from this section.

5.7 Project Status

XYZ Corp. HOME Add Employee View Employee Assign Project Project Status Salary Table Employee Leave Log Out

Project ID	Emp. ID	Project Name	Due Date	Submission Date	Mark	Status	Option
226	112	Tahmidul/PHP	2022-12-15	2022-12-01	30	Submitted	Mark
227	112	Godhuli/Back End	2022-12-07	2022-12-01	15	Submitted	Mark
228	114	pushon/coding	2022-12-04	0000-00-00	25	Due	Mark
229	115	Ehtashamul/Front End	2022-12-26	0000-00-00	0	Due	Mark
230	113	Godhuli/SQA	2022-12-30	0000-00-00	40	Due	Mark
231	118	Fabia/Front End	2023-05-12	0000-00-00	0	Due	Mark

Figure 7: Project Status

Admin can see the status of the status of the assign project which was given to the employees and give marks based on their performance .

5.8 Salary

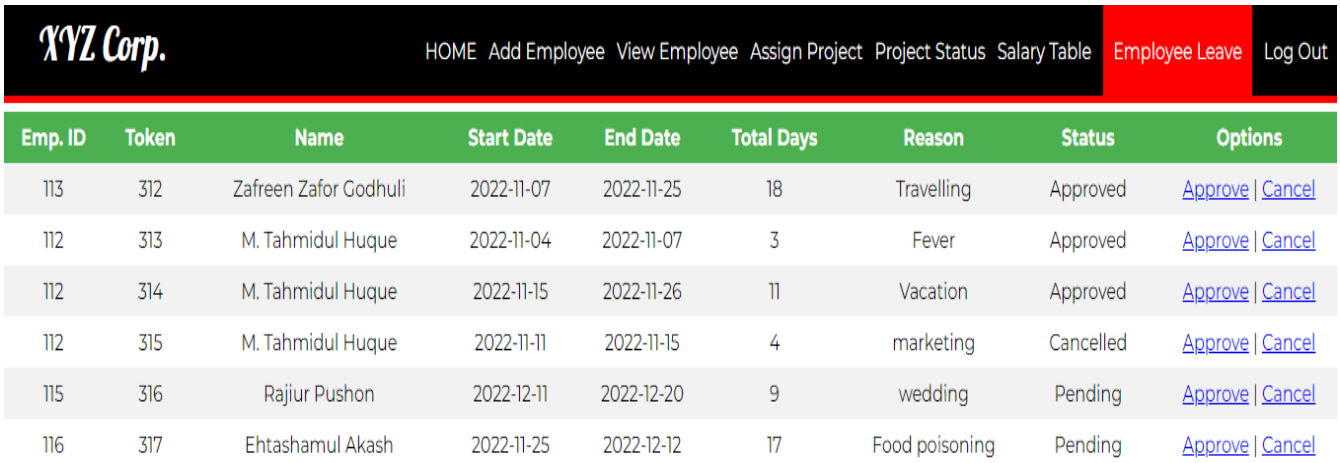
XYZ Corp. HOME Add Employee View Employee Assign Project Project Status Salary Table Employee Leave Log Out

Emp. ID	Name	Base Salary	Bonus	TotalSalary
112	M. Tahmidul Huque	50000	0 %	50000
113	Zafreen Zafor Godhuli	600000	0 %	600000
114	Nourin Khondoar Mam	500000	0 %	500000
115	Rajiur Pushon	30000	0 %	30000
116	Ehtashamul Akash	30000	0 %	30000
117	Tahmidul Huque Hridoy	25000	0 %	25000

Figure 8: Salary page

Admin see salary details of every employee from here and he can also add, update anddelete them.

5.9 Approved Application



Emp. ID	Token	Name	Start Date	End Date	Total Days	Reason	Status	Options
113	312	Zafreen Zafor Godhuli	2022-11-07	2022-11-25	18	Travelling	Approved	Approve | Cancel
112	313	M. Tahmidul Huque	2022-11-04	2022-11-07	3	Fever	Approved	Approve | Cancel
112	314	M. Tahmidul Huque	2022-11-15	2022-11-26	11	Vacation	Approved	Approve | Cancel
112	315	M. Tahmidul Huque	2022-11-11	2022-11-15	4	marketing	Cancelled	Approve | Cancel
115	316	Rajiur Pushon	2022-12-11	2022-12-20	9	wedding	Pending	Approve | Cancel
116	317	Ehtashamul Akash	2022-11-25	2022-12-12	17	Food poisoning	Pending	Approve | Cancel

Figure 9: Leave application page

Application made by employees will be shown here and admin can change the status toapproved or cancel.

5.10 User/ Employee Login

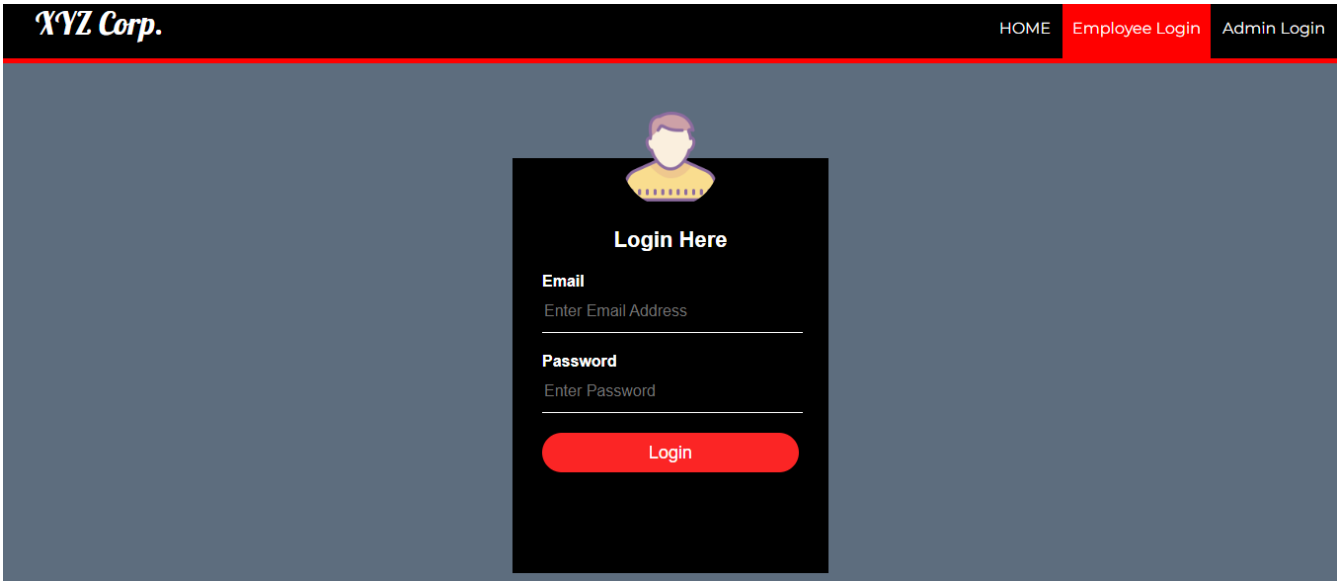


Figure 10: User/Employee login page

This is the User login page. Employees have to input his/her User ID and Password to enter or run this system.

5.11 User/ Employee Dashboard

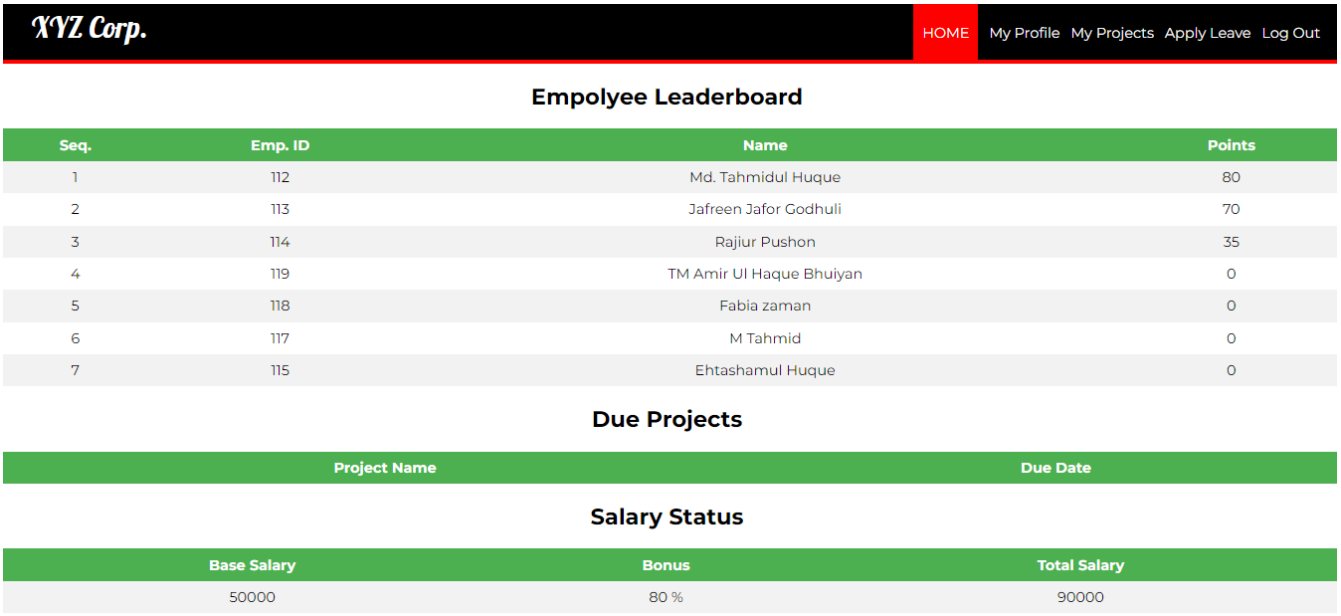


Figure 13: User Dashboard

This is the user/employee dashboard. Here is total 5 buttons which are Home, My profile, My projects, Apply Leave and Logout.

5.12 View Details

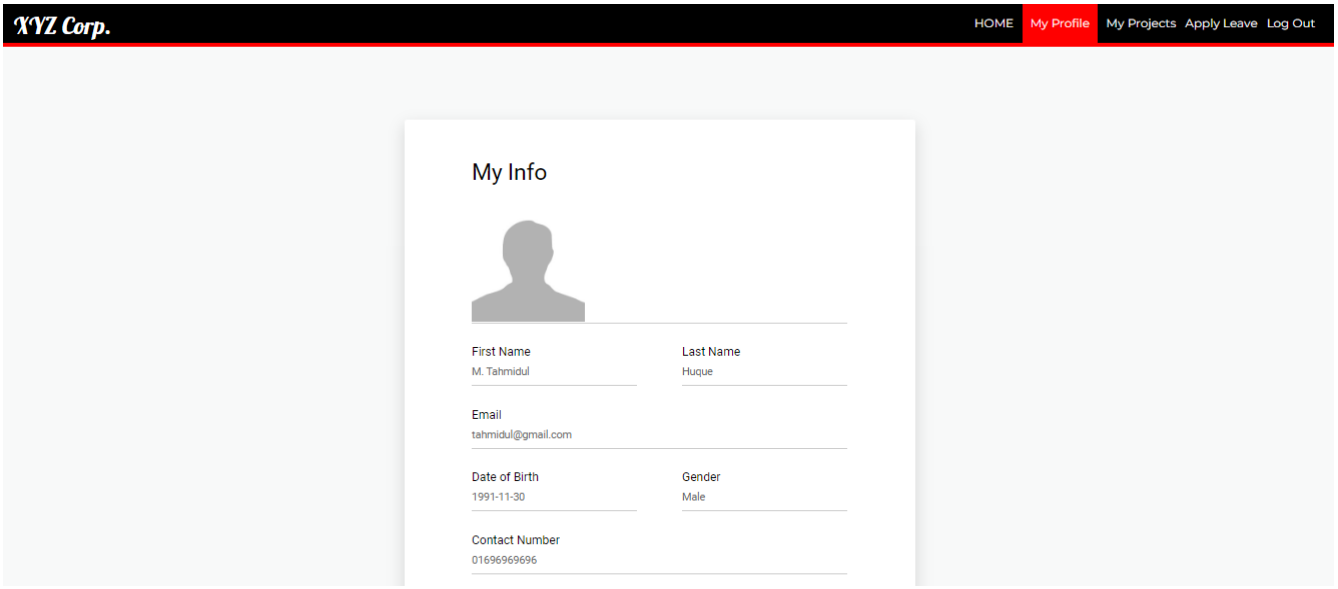


Figure 14: View details page

From this module employees can view his/her details as well as also can update or change the details.

5.13 My Projects

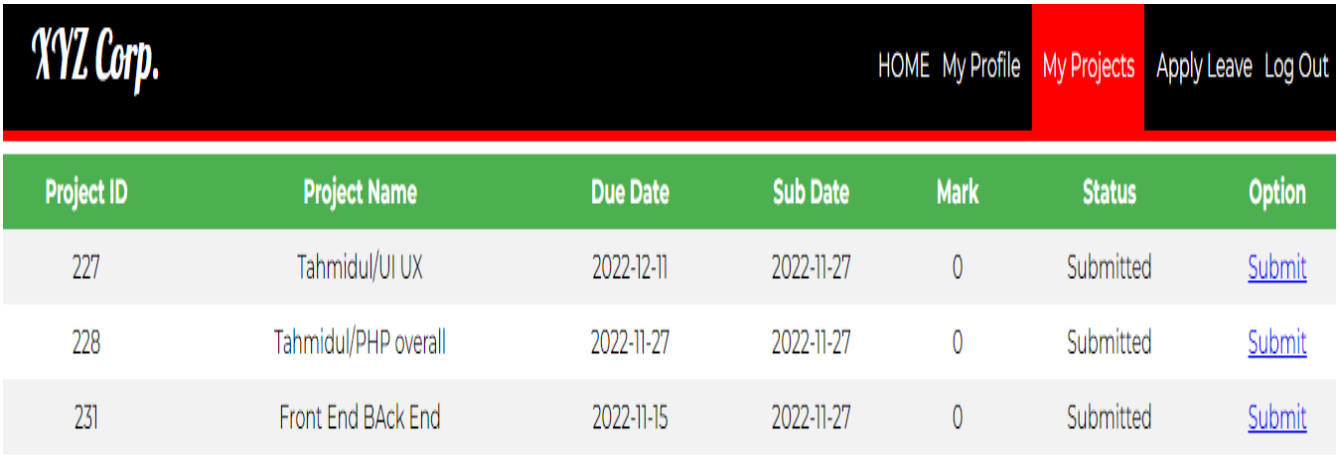


Figure 15: My Projects page

User/ Employees can submit there assigned projects from this module and they can also see their Assigned work, marks, due date, submit date and status.

5.14 Apply For Leave

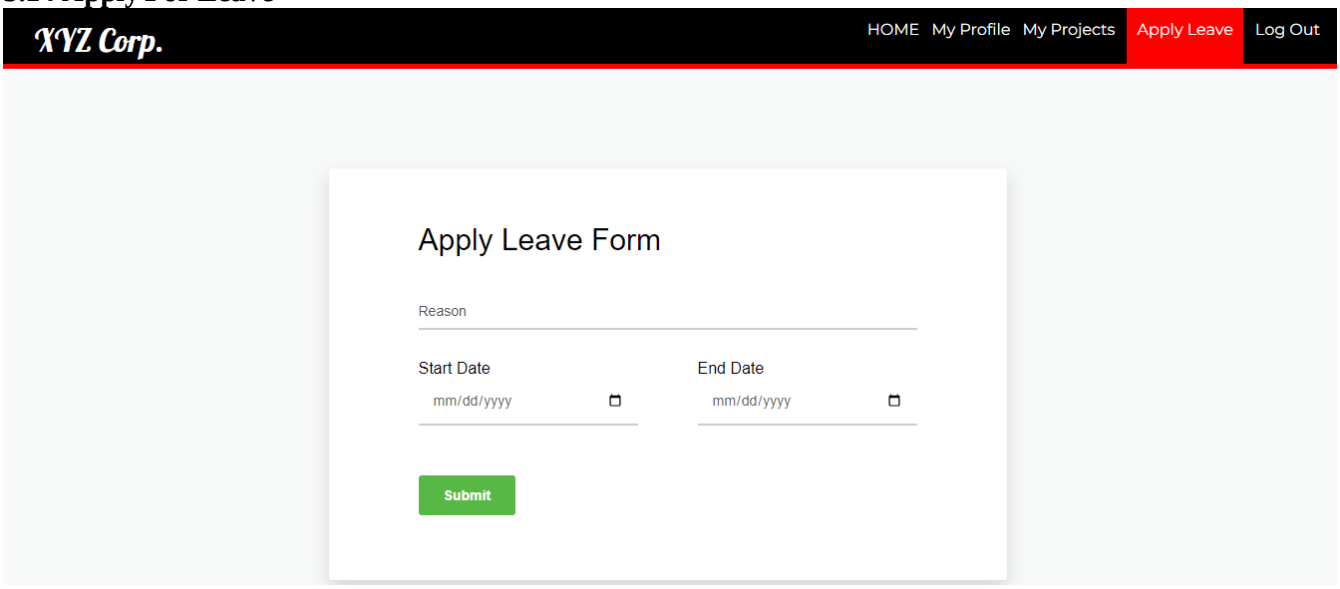


Figure 16: Leave Application

User can apply for a leave with this option. Also, he can see the status of his application.

5.15 View Salary

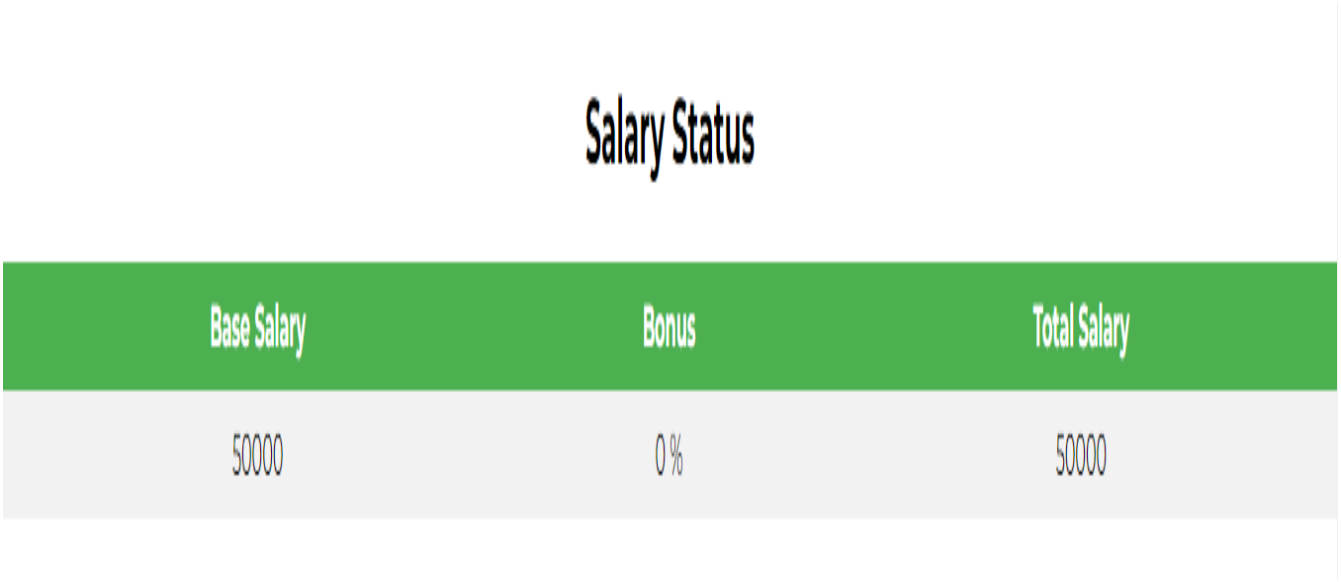


Figure 17: Salary details page

From here user will be able to see detailed information about his/her Basic Salary, Total Salary and Bonus based on their Performance and Points.

Chapter 6
Conclusion and Future Work

6.1 Conclusion

In this report, an information system's development has been presented. It was emphasized on the basic steps, consequently taken during the project's development course as a particular attention was turned to the basic operative functions performed upon the data into the database. The report's content comprises the whole task solution, starting from the programming environments have been selected, going through the database, the application's analysis and construction, and finishing with the code- implementation and test-samples, shown separately in Appendix chapters. As a future work, some additional stuff could be implemented and integrated into the application code making it much more reliable and flexible; especially what concerns a pay-roll module, for instance. Apparently, the role of such systems is basic and essential within each company that wants to keep a really good control and record concerning its personnel data, functionality and performance on all levels in its structure. Every organization, nowadays, has the necessity of managing its staff on a really good level as the staff has definitely the greatest merit of building up a company as such as it is. The well managed staff means giving the appropriate financial award-ness and all kinds of benefits as such as they have been deserved. That's why the development of such systems is not just a programming business – a lot of people are ordinarily involved in such projects and one of the basic requirements is the reliability of the system, especially what concerns the storage of data and all of the operations that will be performed upon it.

6.2 Future Work

As a future work, some additional stuff could be implemented and integrated into the application code making it much more reliable and flexible; especially what concerns a pay-roll module, for instance. Apparently, the role of such systems is basic and essential within each company that wants to keep a really good control and record concerning its personnel data, functionality and performance on all levels in its structure. Moreover, we can improve the interface of the system in future for better management. We can connect the system with network so the system can be used worldwide by anyone and have better usage.

Chapter 7
Reference

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