PROJECT PROPOSAL
CST 291-2 / IIT 271-2

Group No: 12

EMPLOYEE MANAGEMENT SYSTEM FOR SOFTWARE COMPANY

Computer Science and Technology

Department of Computer Science and Informatics

Uva Wellassa University

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Group Details

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GROUP DETAILS:-

Registration Number	Name	E- mail	Contact Number
UWU/CST/18/004	S.Mathushan.	cst18004@std.uwu.ac.lk	0779570811
UWU/CST/18/010	S.Ketheeswaran.	cst18010@std.uwu.ac.lk	0774855658
UWU/CST/18/013	J.Thayakunan.	cst18013@std.uwu.ac.lk	0767260597
UWU/CST/18/024	B.Sivarajah.	cst18024@std.uwu.ac.lk	0764934269

Supervisor:-

Name	E-mail	Contact Number
Mr.M.S.S.Razeeth.	suhail@uwu.ac.lk	0770656214

Co-Supervisor:-

Name	E-mail	Contact Number
Mr.R.Jeyakanth.	Jeyamsrk@gmai.com	0553560090

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1   Introduction

1.1 Project Title.

EMPLOYEE MANAGEMENT SYSTEM FOR SOFTWARE COMPANY

1.2 Project Background.

Employee management system is a project, which aims in developing a computerized system to maintain all activities of a software company in order to make Employee Management more efficient and easier to handle. It is the effort to help employees do their best work each day in order to achieve the larger goals of the organization (*Employee Management System*, 2021).

When we handle this system through manually we face lots of struggles. The paper document is less secure compared to technology system. Handling of each and every document and store them safely is not easy. It's not only about security but also about transporting or carrying out documents at different places. It takes more effort and physical space to keep track of paper documents, to find information, make changes and to keep details secure. So we reduce these problems by using technological way.

Employee Management system is a new digital technology that allow the company's business to automate manual processes. This project has many features, which are generally not available in manual Employee management systems. Achieving effective and efficient employee management system through an innovative system can drive businesses to the next level with increased productivity and employee satisfaction. It is a platform where all work-related as well as important personal details of an employee is stored and managed in a secure way.

Overall this project of ours is being developed to maintain the whole company in the best way possible and also reduce the human efforts. This system is useful for running a smooth organization. The goals of this project are to provide simplicity as well as security and efficiency to the management of Company. Throughout the project the focus has been on handling the all thing in an easy and intelligible manner and increasing the targets of the company.

1.3 Project aims / objectives

The project aims and objectives that will be achieved after completion of this project are which is expecting to accomplish. It is discussed in project background. The aims and objectives are as follows:

- Provide an improvement in control and performance.
- Provide the job vacancy details through the advertisements and announcements to the user.
- Increasing the rate at which projects are completed accurately by employees.
- It tends to be more accurate rather than manual system.
- To facilitate the HR manager and administrator to manage their works easily.
- To maintain the employee details and financial details easily by the administrator.
- Save time and cost.
- Provide an option of feedback.
- Provide safety and performance to the management of company.
- Provide 24/7 service.

2   Project Description

2.1 Functional / Non-functional Requirements

Functional Requirements

1. Employee login and registration
   - Admin can only register each employee.
   - All the employees can login to the system.
2. User accessible module
   - Provide access control. It is the technique that regulates who can view or use resources in this system based on their job role.
3. Email verification
   - Provide email verification for the purpose of fraud prevention.
   - When each employee login to the system at first time should verify that via email.
   - If any employees forget their password they can be access the system via their email by update their password.

4. Admin maintenance
5. Employee maintenance module
   - Admin can register employees and he can manage the employee details.
6. Project maintenance module
   - There is a facility to assign project for employees and manage it.
   - Maintain the project documentation by the administrator.
7. Salary calculation and maintenance
   - HR manager can calculate each other employee's salary and also calculate the EPF and ETF amount and make a salary report.
   - Administrator also views and maintains the salary report.
8. Payment Registration
   - According to the salary report administrator records the payment registration.
9. Loan service maintenance module
   - There is a facility to get a loan service for each employee.
   - Administrator can assign the loan services which are available.
10. Advertisements and announcements.
   - There is a facility to provide the job vacancies or any other announcements.

11. Job applications and maintenance.
   - Based on the job vacancy, any of the users (viewers) can apply the job without any registration.
   - HR manager can view the job applicants and maintain their details.
12. Leave apply maintenance module
   - All the employees can apply leave via login to this system.
   - Administrator can approve or reject the leave application.
13. Rewards addition.
   - It facilitate rewards addition for the purpose of encourage the employee's performance by the administrator.
14. Feedback addition.
   - User can be contact the administrator for the job vacancy and any other purpose.
   - All the employees have a facility to give feedback.
15. Search option
   - It facilitates the search option to easily get any of the employee's details.

Non-Functional Requirements

- Usability Requirement

   The system is designed for a user-friendly environment so that Admin, HR manager and other employees of company can perform the various tasks easily and in an effective way.

- Efficiency Requirement

   After the employee management system will be implemented User, Admin, HR manager and other Employees will easily do their works very fast and maintain the whole company in the best way.

- Reliability Requirement

   The system should accurately perform vacancies' announcements adding, employee validation, project maintenance, salary calculation, leave and loan service management.

- Delivery Requirement

   The whole system is expected to be delivered in three months of time with a weekly evaluation by the Admin.

- System Implementation Requirement

  In implementing whole system it uses html, CSS and Bootstrap in front end with php as server side scripting language, which will be used for database connectivity and the backend i.e. The database part developed using MySQL.

- Security

  The whole system is expected to be secured. We will facilitate email verification and password encryption. We will provide the access control technique also.

2.2 User Levels, User Roles

- Administrator
  - Account
    - Admin login.
      - Username & password authentication.
      - Forget password.
    - My profile
    - Logout.

  - Employee validation.
    - Employee addition.
    - Modify and manage employee details.
    - View employee details.
    - Response the leave application.
    - Rewards addition.

  - Handle the projects.
    - Project addition.
    - choose the project teams
    - Supervise the projects' groups.
  - Maintain the loan service.
  - Supervise the salary reports.
  - Payment registration.
  - Response Leave application
    - Approve
    - Reject

- HR manager(Human resource)
  - Account
    - HR manager login.
      - Username & password authentication.
      - Forget password.
    - My profile
    - Logout.
  - Salary calculation.
  - Apply for leave.
  - Apply for loan services.
  - View rewards.
  - View project details.
  - Feedback
- Other Employees
  - Account
    - Employee login
      - Username & password authentication.
      - Forget password.
    - My profile
    - Logout.
  - Apply for leave.
  - Apply for loan services.
  - View rewards.
  - View project details.
  - Give Feedback.

- User(viewers)
  - View company info.
  - View job announcements.
  - Apply for job.
  - Give Feedback

3   <u>Methodology</u>

We choose the Agile model for this system because we can make small objective changes without huge amendments. Agile is very flexible and allows making changes in any phase (*Agile Methodology*, 2021; Lu Bauer, 2021). In Agile, project requirements can change frequently.

- Requirements gathering

  Requirement gathering process will be achieved by the field visit to the company .And we understood the requirements which company want to achieve its 'goal. We gathered the information from informal interviews with the employees.

- Analysis.

  We actively work together on a just-in-time basis to understand the structure of the system, to identify what needs to be built, to estimate that functionality, to prioritize the functionality.

  Likewise we implement our system like this. All the details of the company, advertisements and announcements for the vacancies of various departments are provided through an online. User can Access it throughout the local internet. It also has login facility of admin, HR manager (Human resources) and other employees. After logging into the system Admin, HR manager, other employees can access their functionalities which are available for them.

- Design

  We use the Star UML diagram for our designing.

- Coding

  We are going to use language technologies to design our system.

  Ex: html, php, java script, jQuery, Bootstrap, CSS

- Testing

  The testing begins at the start of the project and there is ongoing integration between testing and development. By this set up we can achieve a high product quality (*Agile testing principle methods*, 2021).
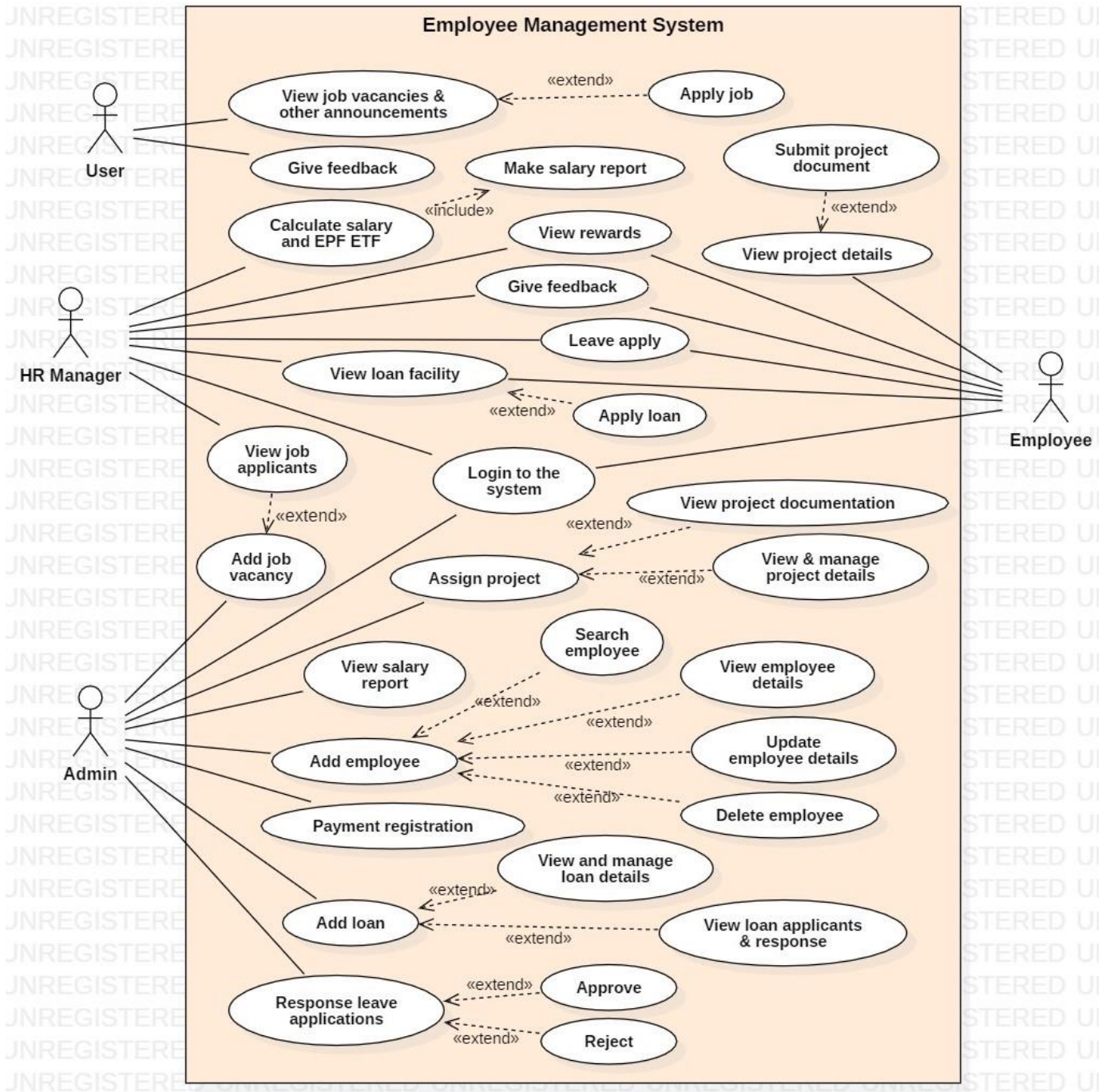
- Maintenance

  Here we usually involve small numbers of changes that will be grouped together in a release build to increase the quality of the product without breaking it in other ways.

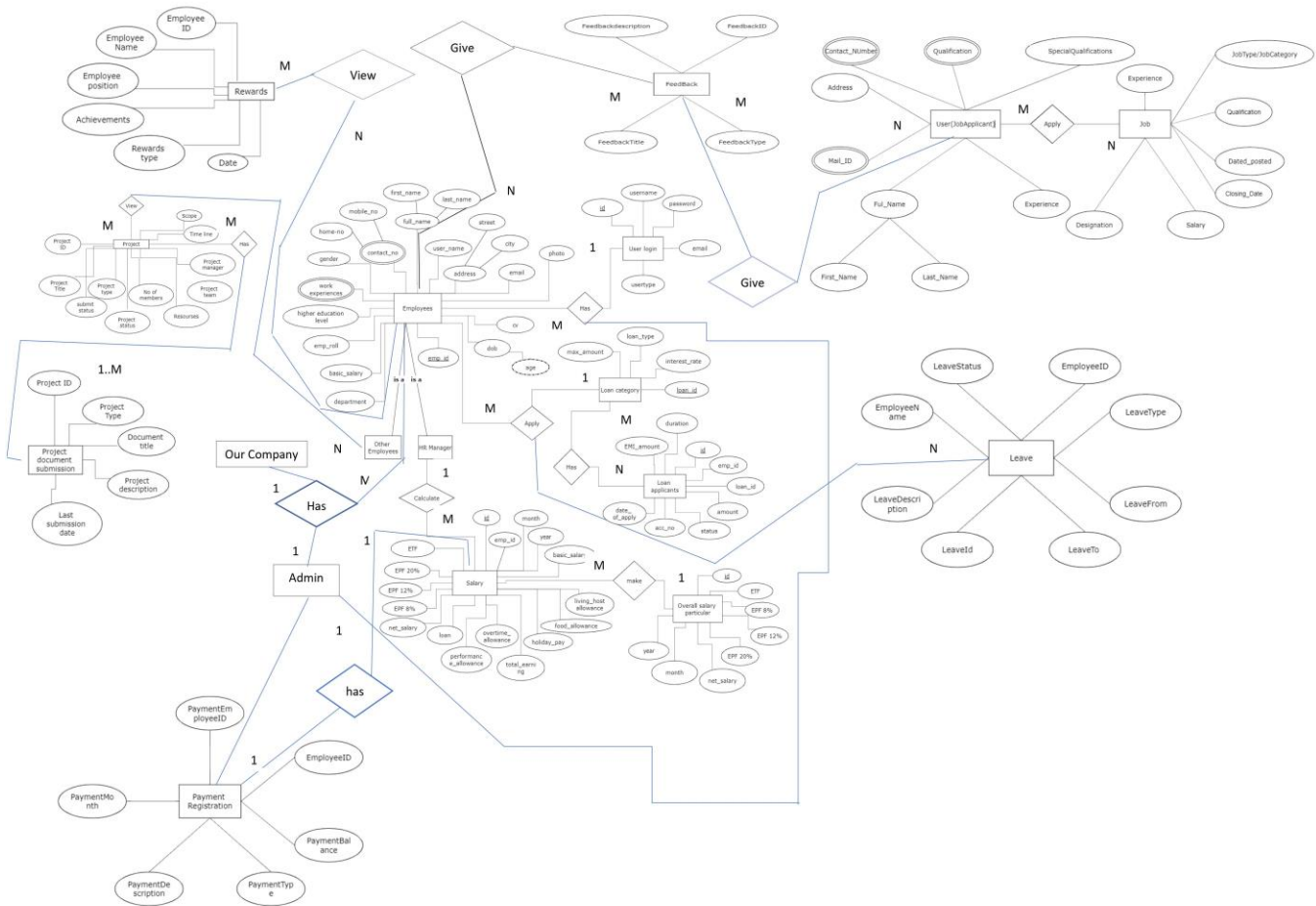**Figure 3.1: Agile life cycle**

Use case Diagram

ER Digram

**Figure 3.3 ER diagram of employee management system**

4: Resources

1. Software Resources

   - Technology: PHP 7.2.4, CSS4, HTML5, Bootstrap5, JavaScript and jQuery.

     HTML is used to write the whole code and develop webpages with CSS, bootstrap, jQuery, java script for styling work and PHP for sever side scripting.

   - Database: MySQL 5.7.21

     MYSQL is used as database as it easy to maintain and retrieve records by simple queries which are in English language which are easy to understand and easy to write.
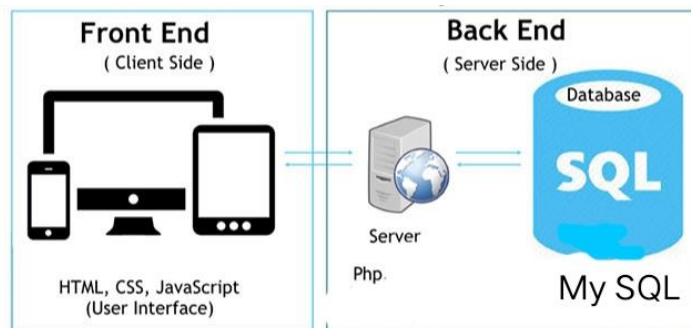
Figure 4.1: Technology resources

   - Design tools: StarUML

     StarUML is built as a modular and open tool. It provides frameworks for extending the functionality of the tool.

   - Documentation: Microsoft Word 2016,Microsoft PowerPoint 2016

   - Operating System: Windows 10

2. Hardware Resources

   - Intel Core I5 or higher
   - 4GB RAM or higher
   - 400GB Hard disk

5: Project Plan (Gantt chart)

Task	Time (Weeks)														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Finding Topic & requirement gathering	■	■													
Proposal Presentation			■												
Design the system				■	■										
Website development phase1& Database development phase 1						■	■								
Interim Presentation								■							
Web development phase2									■	■					
Database development phase 2											■	■			
Testing& validation													■	■	
Final submission & Presentation															■
Documentation	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

6: References

Agile Methodology (2021). Available at: https://www.guru99.com/agile-scrum-extreme-testing.html (Accessed: 27 April 2021).

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Employee Management System (2021). Available at: https://www.pockethrms.com/employee-management-system/#:~:text=An employee management system is,an easier and quicker way.&text=Now manage your hiring expenses with automated recruitment management system (Accessed: 26 April 2021).

Lu Bauer (2021) Agile Methodology and System Analysis. Available at: https://www.umsl.edu/~sauterv/analysis/Agile Methodology and System Analysis.htm#:~:text=Scott Ambler%2C the founder of,needs to be built%2C to (Accessed: 26 April 2021).