



PES UNIVERSITY, BANGALORE

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B.TECH. (CSE)
V SEMESTER
UE20CS303 –SOFTWARE ENGINEERING
PROJECT REPORT
ON
Employee Leave Management System

SUBMITTED BY

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PROPOSAL OF THE PROJECT

- 1) We are doing Employee leave management system, where an employee can request for the leave and easily manage employee data, leave request, track and grant leave.
- 2) we are expanding one of the sample software projects.
- 3) The System is implemented using web based technologies which include CSS, HTML, MySQL, PHP.
- 4) The result obtained shows that the system is error free, faster and allows staff to request for leave in a timely manner. Hence the system can be used by both academic staff and administrative department of an institution for effective and efficient management of employee leave.
- 5) The login form is the first graphical user interface displayed when the employee leave management application is launched.
- 6) The first stage requires admin to login into the system using his/her user name and password, then create all users. Interface of admin side consists of available leave types, pending application, declined application, approved application etc.
- 7) When employee logs in then the interface that shows is leave request page. staff is required to select type of leave, enter start date and end date. After completing the form, the staff is required to submit the request. After successful submission, the leave request automatically reflects on the superior officers account for approval or rejection.



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Functional Requirements:

1)**Employee section**:in this section we have different functionalities like adding new employees,showing employees names with their ID,name etc.

2)**Department section**:in this section we have different functionalities like adding different departments.

3)**Leave types**:it displays all the types of leave in which a employee can choose to apply leave for.

4)**Manage Leave:**

A)Pending

B)Approved

C)Declined

D)Leave History



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Software Requirements Specification

1. INTRODUCTION:

The expected audience of this document is the ADMIN/MANAGER and EMPLOYEE. Anyone who has applied for leave will know the frustration of form-filling – and waiting as the hard copy travels up and down the approval hierarchy. This brilliant electronic leave management software with its powerful features, cuts out the physical movements and enables HR to take decisions on the spot.

There are many advantages of utilizing a web based leave tracking system:

- 1) Eliminates paper based leave application forms.
- 2) Leave applications can be submitted online.
- 3) Leave applications can be approved online.
- 4) Both the leave applicant as well as the approver can view the remaining leave days as well as historical leave applications.

Employees can easily:

- 1) Apply for leaves online where upon submission; the supervisor will be notified via email that there is a leave to approve.
- 2) View the number of remaining leave days.

HR administrators can easily:

- 1) Approve leave



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2) Reject leave

3) Cancel

1.1 PURPOSE:

1) Increase employee engagement and satisfaction

2) Reduce costs

3) Increase productivity

4) Eliminates errors

5) Transform HR practices

6) Plan better

1.2 SCOPE:

The SST online Leave Management System is designed to run on the organization's server and to allow employees to apply for their leave balance, revoke leave application, and cancel leave. Consequently, the line manager should be able to review the contents of the leave application and approve or reject the applications.

leave management systems that allow HR Managers to go ahead with the most suitable decision to a specific problem statement.

1.3 Definitions, acronyms, and abbreviations:

Here, in this project we are doing like admin-employee interactions on the basis of management of leaves of employees.

Actually , Admin means the one who manages the leave applications of the employees. He will also have the authority to approve or reject the leave



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application of employees. He stores all these applications in database separately like approved ,rejected or pending applications.

Also we have employees , means those who applies the applications

for the leave. They have multiple options for the leave subject like casual , medical and paternity leaves.

In our project, we are using short forms for the department sections like

Department	Shortform
Human Resource	HR
Information Technology	IT
Operations	OP
Volunteer	VL
Marketing	MK
Finance	FI
Sales	SS
Research	RS

1.4 References:

https://github.com/shrutesh21/Leave_Management_system

1.5 Overview:

1)SRS includes two sections overall description and specific. The end user should have a basic knowledge of English and computer usage.

2)Overall description will describe major role of the system components and interconnections.

3)Specific requirements will describe roles & functions of the actors.



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2.0 Overall Description:

2.1 Product Perspective:

This software is developed specifically to cater the company employees leave management, is totally self contained and works efficiently. It provides simple database rather than complex ones for high requirements and it provides good and easy graphical user interface to both new as well as experienced user of the computer.

2.2 Product Functions:

Spreads leave awareness and conveys leave rules With inbuilt systems, the software provides the employees with complete access to minimum/maximum working days, leave balance, holiday calendar, etc, and ensures that each employee is well-versed with company policies.

2.3 User characteristics:

In our project user means the employees who apply for the leaves.

- They need not have high educational level or like high experience in any particular fields.
- They only need the basic knowledge of how to write the application for the leave and they also need to know the various leave types.(i.e medical , casual , paternity)
- For the leave application they have to mention their names, leave type etc., for this they need not have any IT experience or any high level of intelligence.



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2.4 Constraints:

- High Performance
- User-Friendly
- Security based system
- Validation if users
- Very fast response time

2.5 Assumptions and dependencies:

For our project , we have to make some assumptions for it.

Like ,

- Here we have to assume that the employees will take the leave only after the approval from the admin.
- We have to assume that all the applications that are applied will shown here.

In our project we have some dependencies like,

- For this project, the internet connection is necessary . We can't submit the application without the internet connection.
- The employees must have prior knowledge about the database and the submission format for the application.

3.0 Specific Requirements:

3.1 External Interface:

User Interfaces: User can login to the system and apply for the leave. User can even manage his leave. The type of leave has been noted down.



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Hardware Interfaces: The system shall run on,

Operating System: Any windows OS

Script which support PHP and MySQL

Web browser: google chrome, Mozilla firefox

Software Interfaces: The system shall interface with an oracle or access database.

Communication Interfaces: This system supports google chrome and mozilla firefox web browsers.

3.2 Functional Requirements:

Functional requirements outline what the system must do. I.e. what services the system present to the user? Following is a list of functionalities of the system. There are registered people in the system. Some are leave approvers. An approver can also be a leave requestor.

An employee should be able to:

- Login to the system through the first page of the application.
- See his/her leave history since the time he/she joined the company/college.
- Apply for leave, specifying the from and to dates, reason for taking leave, address for communication while on leave and his/her superior's email id.
- See his/her current leave applications and the leave applications that are submitted to him/her for approval.



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3.3 Non Functional Requirements:

Non-functional requirements define the needs in terms of performance, logical database requirements, design constraints, standards compliance, reliability, availability, security, maintainability and portability.

3.4 Design Constraints:

Actually the design constraints means, the limitations that particular project have. The design constraints will present in all the projects that are designed.

Our projects have some design constraints , like

- ❖ Here we can only store maximum of 100 leave applications of the employees. This is the maximum limit that we set for the database.
- ❖ Our project only stores the details of the employees who applied for the leave not all the employees. In that also it only stores the name , id , which department that employee belongs to . It doesn't store anything else.

Project Plan

1: Identify the lifecycle to be followed for the execution of your project and justify why you have chosen the model.

- The life cycle we followed in this project is **Agile** as we are Focusing on Simplicity in both the product and the process.
- Everyone has clear visibility of the project which is the key aspect for the success.
- **Adapt with Ease:** Agile is a highly iterative approach to project management. It is designed to change and evolve with the requirements of your project.



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- Continual updates and reviews to a project's progress and requirements give you flexibility in designing the project.
- Lower Risk.
- **Collaboration & Communication:** In agile there is regular communication and collaboration of ideas. Frequent progress updates create an opportunity to share ideas and solutions.

2: Identify the tools which you want to use it throughout the lifecycle like planning tool, design tool, version control, development tool, bug tracking, testing tool.

- For development We used languages like **HTML, CSS** and **PHP** to do this project.
- For version control we used **GitHub**.
- For designing, we used **JIRA Software**.
- For tracing and testing we used **GANTT chart**.

3: Determine all the deliverables and categorise them as reuse/build components and justify the same.

Deliverables:

- 1) Employee section: in this section we have different functionalities like adding new employees, showing employees names with their ID, name etc.
- 2) Department section: in this section we have different functionalities like adding different departments.
- 3) In our project we have one section called "leave types". There we have some default leave types. If an employee mentions different leave type it will store there with the leave type name, its id and when the employee submits that leave type.



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#	1	Leave Type	Description
+	1	Casual Leave	Provided for urgent or unforeseen matters to the employees.
+	2	Medical Leave	Related to Health Problems of Employee
+	3	Restricted Holiday	Holiday that is optional
+	4	Paternity Leave	To take care of newborns
+	5	Bereavement Leave	Grieve their loss of losing loved ones
+	6	Compensatory Leave	For Overtime workers
+	7	Maternity Leave	Taking care of newborn ,recoveries
+	8	Religious Holidays	Based on employee's followed religion
+	9	Adverse Weather Leave	In terms of extreme weather conditions
+	10	Voting Leave	For official election day

Classification:

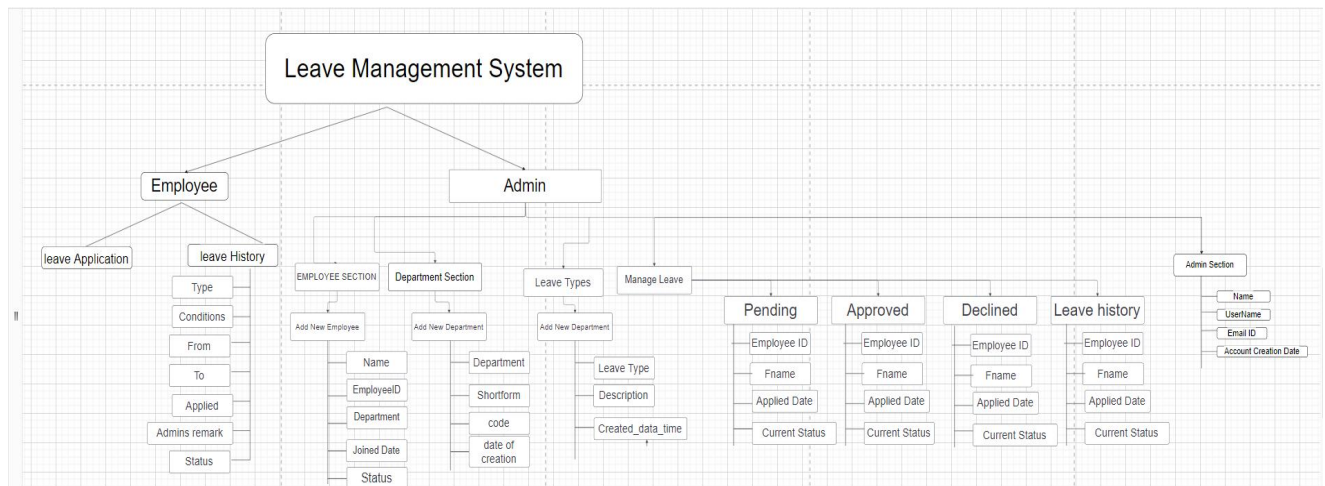
Reused Components:

- 1) We took inspiration from some random databases and created our own database.
- 2) From there we took some functions and added to our project.
- 3) In our project we can login from both the sides i.e from employee side and from the admin side . So here we used same layout for both the login section but some content in that login section is different from each other .
- 4) In the same way , we have some functionalities like adding employee and department. So here also we used almost same layout for both but the content in them is different from each other.

Built Components:

Rest all functionalities like employee section, department section, manage leave sections and leave type sections are built components.

4: Create a WBS for the entire functionalities in detail.



5: Do a rough estimate of effort required to accomplish each task in terms of person months.

We are using semi-detached **CoCoMo model** because the team size is medium and the complexity of the program is in between **embedded** and **organic**.

$$\text{Effort, } E = a_b(KLOC)^b$$

$$= 3.0(100)^{1.12}$$

$$= 521.3402 \text{ PM}$$



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TEST CASES:

Serial Number	Test Cases	Valid/Invalid	Expected output	Actual output	PASS/FAIL
1	Verify if a user will be able to login with a valid username and valid password.	Valid	Must login	Logged in	PASS
2	Verify if a user can login with a valid username and an invalid password.	Invalid	Must login	Invalid details	FAIL



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3	Verify if a user can login with a valid Password and an invalid username.	Invalid	Must login	Invalid details	FAIL
4	Verify if the data in password field is either visible as asterisk or bullet signs.	Valid	Password must be visible in the form of dots	Password is visible in the form of dots	PASS
5	Only password entered but username is not entered	invalid	Must login	It gives error message as Please fill details	FAIL
6	Only username is entered but password is not entered	invalid	Must login	It gives error message as Please fill details.	FAIL
7	Check if the password can be copy-pasted or not.	Valid	Password must be able to copy to keyboard	Doesn't get copied.	FAIL
8	Verify if there is a checkbox with the label "remember password" on	Valid	No checkbox named remember password	Check box is absent	PASS



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	the login page.				
9	Verify that closing the browser should not log-out an authenticated user.	Valid	Should not log out on closing the browser	Logs out on closing the browser.	FAIL

Mutation Testing

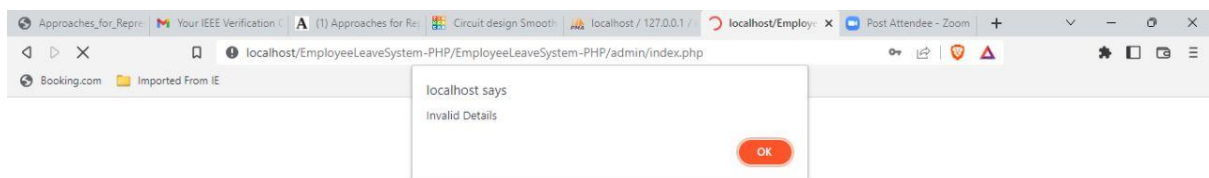
MNO	Mutant	Expected Output	Actual Output	Result
1	In contact number, if length > 10	Valid	Invalid	mutant killed
2	If letters are entered in place of numbers	Valid	Invalid	Mutant is killed
3	In short description if we enter 50 characters	Valid	valid	Mutant Is alive
4	In password section if we enter alphabet	Valid	Invalid	Mutant killed



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5	If Date is below 31	Valid	valid	Mutant Is alive
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Good Evening

Group Number - 1
Employee Login
Employee Leave Management System

Email address
nachi@gmail.com

Password

Please fill out this field.

Go to Admin Panel

admin
.....
haroun@gmail.com
.....
hr@ht.com
...
irera
.....
manager
.....
nachi@gmail.com
.....
nachiketha@gmail.com

Manage passwords...

Good Evening

Group Number - 1
Employee Login
Employee Leave Management System

Email address
nachi@gmail.com

Password

Please fill out this field.

Go to Admin Panel

admin
.....
haroun@gmail.com
.....
hr@ht.com
...
irera
.....
manager
.....
nachi@gmail.com
.....
nachiketha@gmail.com

Manage passwords...



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Admin Panel - Employee Leave

localhost:EmployeeLeaveSystem-PHP/admin/add-leavetype.php

EMPLOYEE LEAVE MANAGEMENT

Leave Section Manage Type / Add

ADMIN

Please fill up the form in order to add new leave type

Leave Type

Short Description

Having any health related issues

ADD

Please fill out this field.

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Admin Panel - Employee Leave

localhost:EmployeeLeaveSystem-PHP/admin/add-leavetype.php

EMPLOYEE LEAVE MANAGEMENT

Leave Section Manage Type / Add

ADMIN

Please fill up the form in order to add new leave type

Leave Type

Medical Leave 123

Short Description

ADD

Please match the requested format. Only alphabets are allowed.

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SCREEN SHOTS OF OUTPUT

Apply For Leave Days

Employee Leave Form

Please fill up the form below.

Starting Date
05-03-2020

End Date
05-03-2020

Your Leave Type
Click here to select any ...

Describe Your Conditions

Employee Section

Home / Employee Management

ADMIN

Add New Employee

Show 10 entries

#	Name	Employee ID	Department	Joined On	Status
1	Akash hegde	ASTR001245	Information Technology	2020-11-10 16:59:59	Active
2	sumanth kulkarni	ASTR001369	Operations	2020-11-10 19:10:02	Active
3	shrutesh reddy	ASTR004699	Human Resource	2021-03-03 12:54:17	Active
4	nachiketh CS	ASTR002996	Volunteer	2021-03-03 16:14:13	Active

Showing 1 to 4 of 4 entries

Previous 1 Next



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The screenshot shows the Admin Dashboard of the Employee Leave Management System. The dashboard includes a sidebar with navigation options: Dashboard, Employee Section, Department Section, Leave Types, Manage Leave, and Manage Admin. The main content area displays six summary cards: Available Leave Types (12), Registered Employees (8), Available Departments (8), Pending Application (4), Declined Application (2), and Approved Application (7). Below these cards is a 'Recent List' section with a table header.

S.N	EMPLOYEE ID	FULL NAME	LEAVE TYPE	APPLIED ON	CURRENT STATUS
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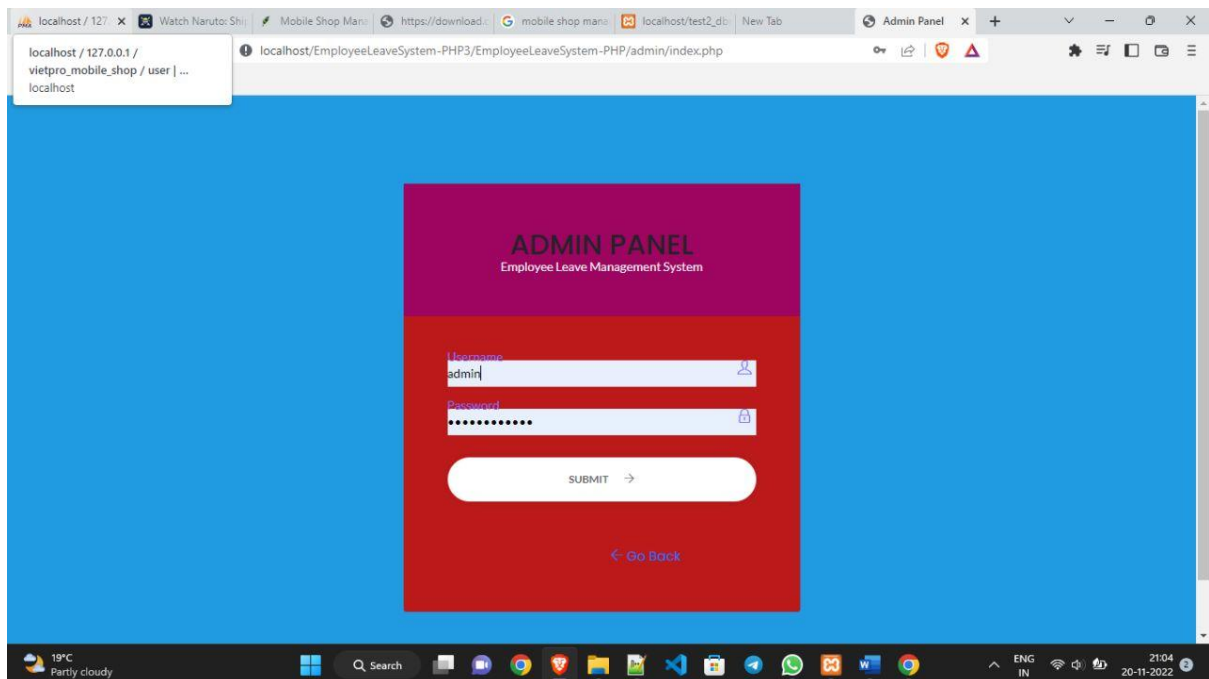
The screenshot shows the Leaves History page of the Employee Leave Management System. The page includes a sidebar with navigation options: Dashboard, Employee Section, Department Section, Leave Types, Manage Leave, and Manage Admin. The main content area displays a table with 7 rows of leave history data. Each row includes a 'View Details' button.

S.N	EMPLOYEE ID	FULL NAME	LEAVE TYPE	APPLIED ON	CURRENT STATUS	
1	ASTR001245	Akash hegde	Compensatory Leave	2021-03-03 17:54:15	Pending	View Details
2	ASTR002996	nachiketh CS	Medical Leave	2021-03-03 17:39:44	Approved	View Details
3	ASTR004699	shrutesh reddy	Paternity Leave	2021-03-03 16:28:18	Pending	View Details
4	ASTR001245	Akash hegde	Casual Leave	2021-03-02 15:02:42	Declined	View Details
5	ASTR001369	sumanth kulkarni	Medical Leave	2021-03-02 15:01:01	Pending	View Details
6	ASTR001245	Akash hegde	Casual Leave	2020-07-03 13:41:11	Approved	View Details
7	ASTR001245	Akash hegde	Medical Leave	2020-04-29 20:31:14	Approved	View Details



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References

CODEASTRO: <https://codeastro.com/employee-leave-management-system-in-php-with-source-code/>

My GIT HUB

LINK: https://github.com/shrutesh21/Leave_Management_system