



Bachelor of Computer Applications (BCA) Programme

Project Report

BCA Sem VI
AY 2021-22

Employee Management System(EMS)

by

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Project Guide by:
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**SDJ** INTERNATIONAL
COLLEGE

CERTIFICATE

This is to certify that Mr./Ms. **Suvagiya Parin H, Mangukiya Gaurav M, Lukhi Rushabh D** examination number **2019066062, 2019066021, 2019065920** has satisfactorily completed his/her project work entitled **EMPLOYEE MANAGEMENT SYSTEM** as partial fulfillment of requirements for BCA Sem VI, during the academic year 2021-22.

Date: 04/04/2022
Place: Surat

(Aditi Bhatt)
I/C Principal
SDJ International College,
Surat

ACKNOWLEDGEMENT

We have taken efforts in this project. However, it would not have been possible without the kind support and help of many individuals. we would like to extend our sincere thanks to all of them.

We are highly indebted to our **I/c Principal Dr. Aditi Bhatt, Head of Department Dr. Vaibhav Desai, Project guide Prof. Nidhi Desai** and all other Assistant professors of SDJ International College for their guidance and constant supervision as well as for providing necessary information regarding the project and also for their support in completing the project. Their constant guidance and willingness to share their vast knowledge made us understand this project and its manifestation in great Depth and helped us to complete the assigned task on time.

I would like to express my gratitude to SDJ international college for the kind support and encouragement.

Our thanks and appreciation also go to our colleagues in developing this project and people who have willingly helped me out with their abilities.

Thank you very much,

2019066062 Suvagiya Parin
2019066021 Mangukiya Gaurav
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1. Introduction

1.1 Project Summary

Employees Management System is a web application for effectively managing employees. In companies handling employee data is the most important factor, so EMS provides functionalities like scheduling important meetings, events and managing employees' leave, salary, attendance, working hours with effective sorting and filtering techniques. This system provides a portal for employees to interact with the company and track their daily data like attendance, leave, salary, working hours. EMS frontend is built using Reactjs, which is a javascript library. EMS Backend provides an Application programming interface (API) that is built using Nodejs, Expressjs, MongoDB. When user requests for EMS frontend will load on the web browser window and API will provide data on user needs.

1.2 Project Technical Profile

Project Name:	EMS (Employee Management System)
Project Definition/Aim:	The main aim of the project is to provide better functionalities for managing employees' data.
Develop for:	Small companies who can not afford to make software to manage their employees.
Front End:	Javascript, Reactjs with redux
Backend:	Javascript, Nodejs, Expressjs, MongoDB (API)
Other Technologies:	Bootstrap 5, Material UI, fullcalendar
Documentation tools:	Google docs
IDE:	Visual studio code
Software type:	Web Application
Project Guide:	Prof. Nidhi Desai
Submitted By:	<ol style="list-style-type: none"> 1. Suvagiya Parin H. 2. Mangukiya Gaurav M. 3. Lukhi Rushabh D.

2. Scope & Planning

2.1 Scope

- The scope of this system is very large, it can be used in multiple companies. Using EMS they can manage their employee data and they do not need to set up this system because it maintains multiple companies' data at a time through a web interface.

2.1 System Functional Requirements

Home page

R1: Provide an interactive home page with redirect links to different pages.

For companies or company portal

R1: LOGIN, REGISTER with OTP, and JWT token authentication

- Company can create an account and by login get access to other functionalities for managing employees.

R2: Dashboard

- Provide statistics of employees on the dashboard.

R3: View and Update profile and password

- Company can view their profile and also can update it.
- If the company updates the email reverify the email.

R4: Manage Departments

- Company can view, add, update, and delete departments in this module.

R5: Manage Designations

- Company can view, add, update, and delete designations in this module.

R6: Manage Employees

View employees

- shows a list of employees with search and sorting functionality.

Add employees

- The company can add employees by login into the company portal as soon as the company adds a new employee. Employees must get credentials for the employee portal.

Update employees

- Company has access to update employee details.

leaving employees

- When employees leave provide a field to add leaving date.

Replace manager

- If the manager leaves a company, an old manager can be replaced with a new manager.

R6: Scheduler

- Provide calendar UI and by clicking date company can add events and employees must be able to view events added by the company.
- The company can edit and delete events.

R7: Attendance

- Provide functionality to filter employees and start their shift and also view old attendance records.
- Provide a list of employees who have started a shift today and as well as provide a list of employees who have not started the shift today.

R8: Mange leaves

- Employees can request by login into the employee portal. Show a leaves list and provide the functionality to accept and reject requests.
- Show a list of employees who are on leave today.
- Provide functionality to view old leaves records of particular employees.

R9: Salary

- Filter employees and calculate the salary of employees between two dates by shift calculated by the company, and employee.

For employees and employee portal**R1: Login**

- When a company adds employees. The employee will get autogenerated id and password for the employee portal.

R2: view company profile

- Employees can view the company profile.

R3: view my profile and update password

- View employee detail and their manager detail

R3: Scheduler

- View events added by the company.
- Employees also can add public and private events.

R4: Attendance

- Employees also can start their shift.
- Show list of attendance records

R5: leaves

- Request for leave
- View old leave records

R6: Salary

- Cout salary according to shift stared by company or employee.

2.1 Other Non-Functional Requirements

Performance and scalability. How fast does the system return results? How much will this performance change with higher workloads?

Portability and compatibility. Which hardware, operating systems, browsers, and their versions does the software run on? Does it conflict with other applications and processes within these environments?

Reliability, availability, maintainability. How often does the system experience critical failures? and how much time is it available to users against downtimes?

Security. How are the system and its data protected against attacks?

Localization. Does the system match local specifics?

Usability. How easy is it for a customer to use the system?

2.2 Feasibility study

This system is designed to help small companies to manage their employees with functionalities like adding, and managing employee data like leave, salary, attendance, and event calendar after the technical, economic, operational, legal, and schedule evolution of the project we have found the risk of this project and decided to spend time on this project or not, But this project is very useful for small businesses with current functionality. These all factors can be handled so we are going to work on this project.

Technical Feasibility

In the technical feasibility study we have found the requirement of hardware and software that can be fulfilled by us.

Economic Feasibility

In the economic feasibility study we analyze the cost of the project and in the first phase, all requirements can be fulfilled with a minimal amount.

Operational Feasibility

In the Operational Feasibility study we analyze some factors like can we maintain this project operation easily and after compilation of the project will it be easy to maintain.

2.3 Timeline chart

Work task	Dec		Jan				Feb				March			
Week	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1 Requirement Gathering & Analysis														
1.1 Learn Javascript														
1.2 requirement gathering														
1.3 requirement analysis														
2 Modeling														
2.1 identify proposed project profile														
2.2 identifying objectives														
2.3 scope definition														
3 System design														
3.1 Design system flow														
3.2 database design														
3.3 company portal design														
3.4 employee portal design														
4 coding														
4.1 API architecture setup														
4.2 API coding														
4.3 API integration with frontend and implementation of cicd pipeline GitHub														
5 Testing														
5.1 unit testing														
5.2 navigational testings														
5.3 functional testings														
5.4 environmental testings														

2.4 Future development

- Verification with OTP and token
- Employee salary reports
- Employee leave and attendance reports
- Take attendance by face recognition

2.5 Description of Tools and Technology Used

1. ReactJs

- React. js is an open-source JavaScript library that is used for building user interfaces specifically for single-page applications. It's used for handling the view layer for web and mobile apps. React also allows us to create reusable UI components.

2. Redux

- React-Redux is the official React binding for Redux. It allows React components to read data from a Redux Store, and dispatch Actions to the Store to update data. Redux helps apps to scale by providing a sensible way to manage the state through a unidirectional data flow model. React Redux is conceptually simple.

3. NodeJs

- Node. js (Node) is an open-source development platform for executing JavaScript code server-side. Node is useful for developing applications that require a persistent connection from the browser to the server and is often used for real-time applications such as chat, news feeds, and web push notifications.

4. ExpressJs

- Express is a web application framework for Node. js that allows you to spin up robust APIs and web servers in a much easier and cleaner way. It is a lightweight package that does not obscure the core Node.

5. What is API?

- An API (Application Programming Interface) is a set of functions that allows applications to access data and interact with external software components, operating systems, or microservices. To simplify, an API delivers a user response to a system and sends the system's response back to a user.

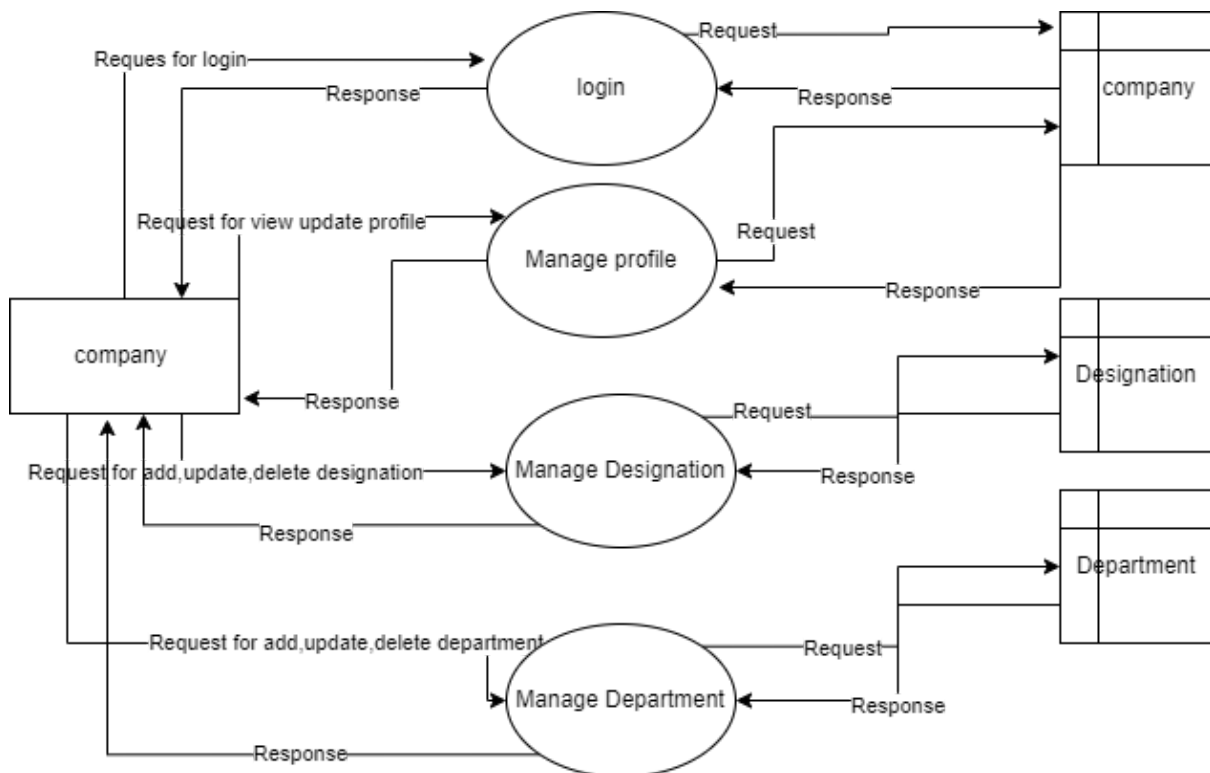
3. Designing

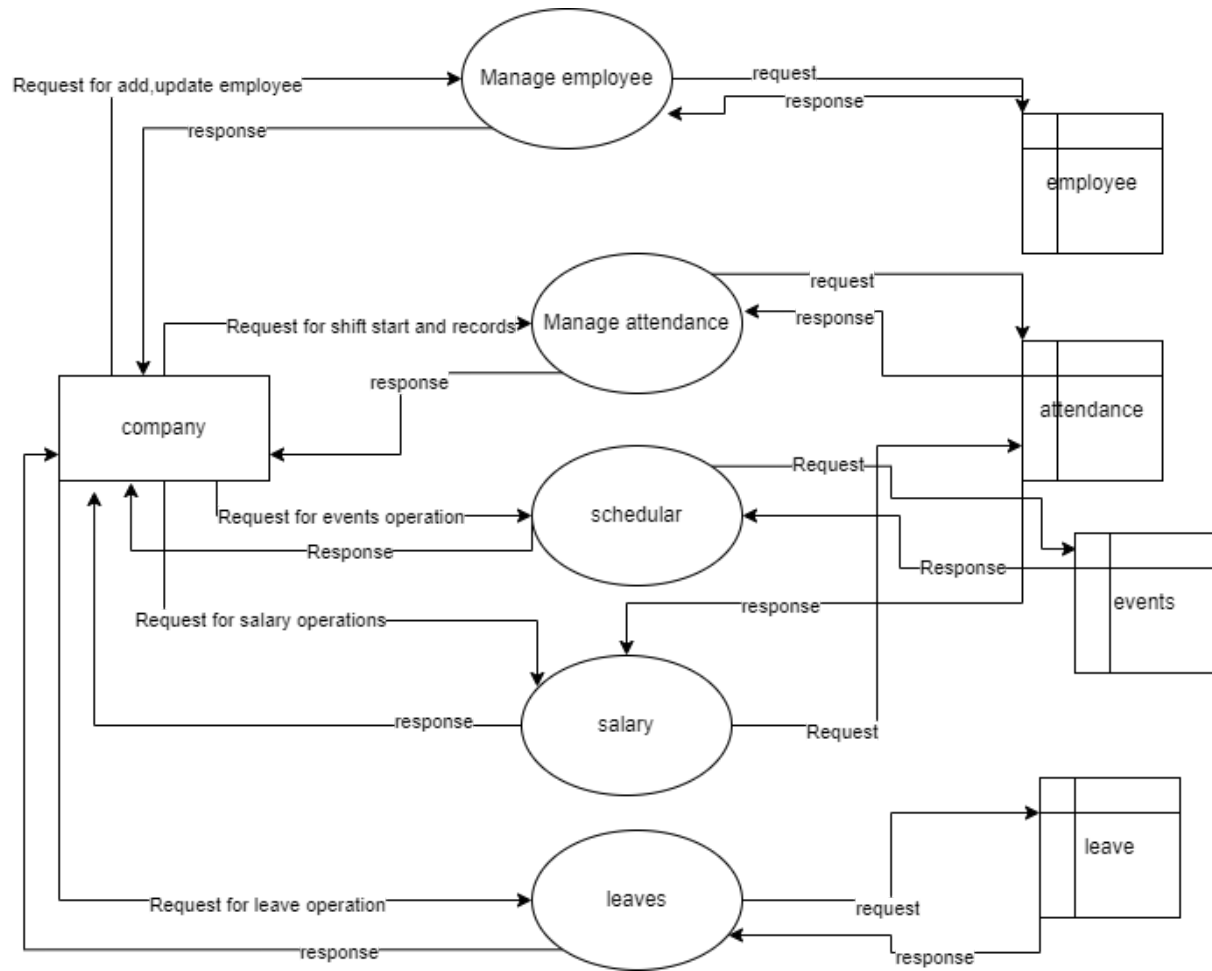
3.1 Data flow diagram

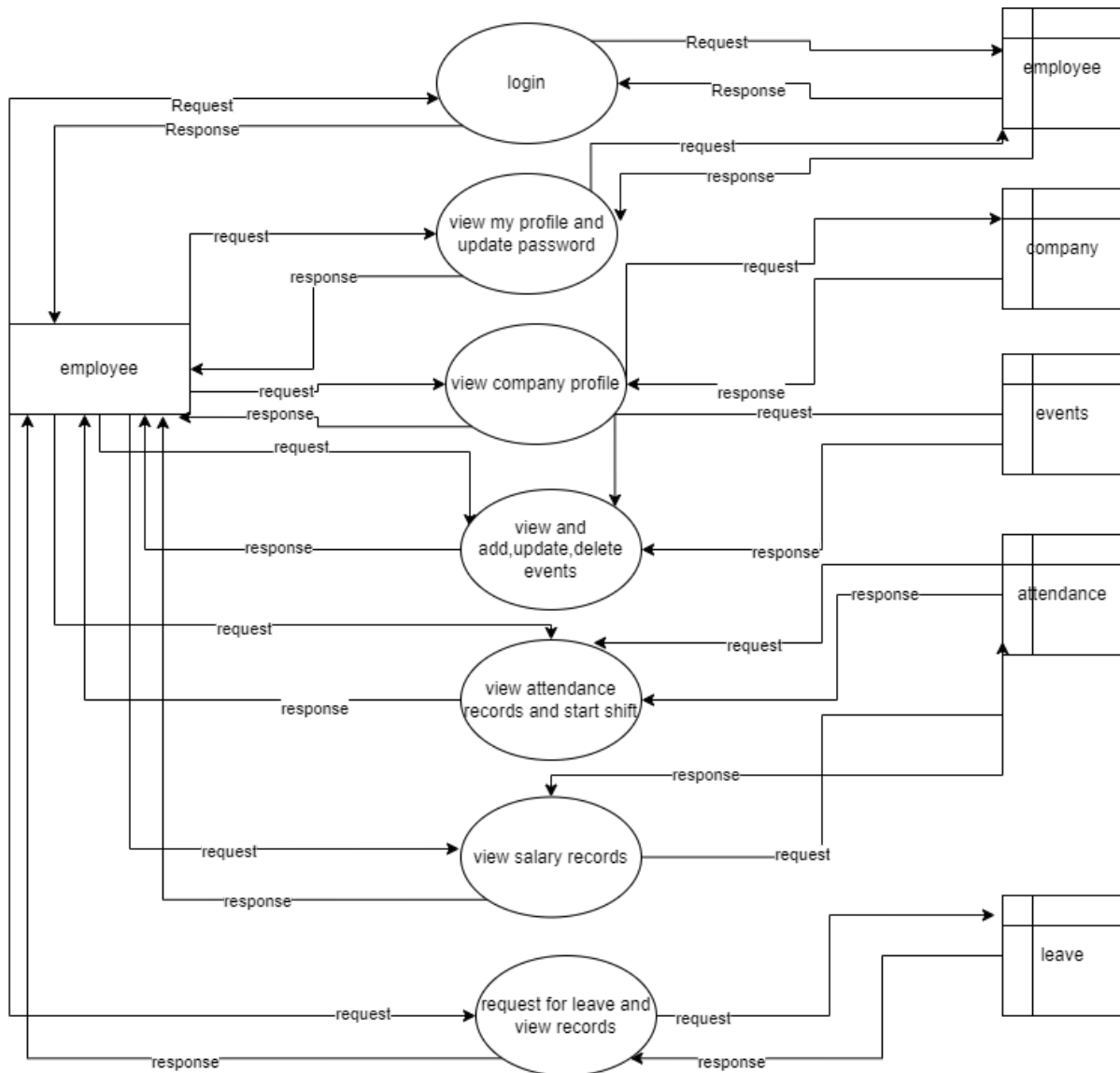
Context level DFD



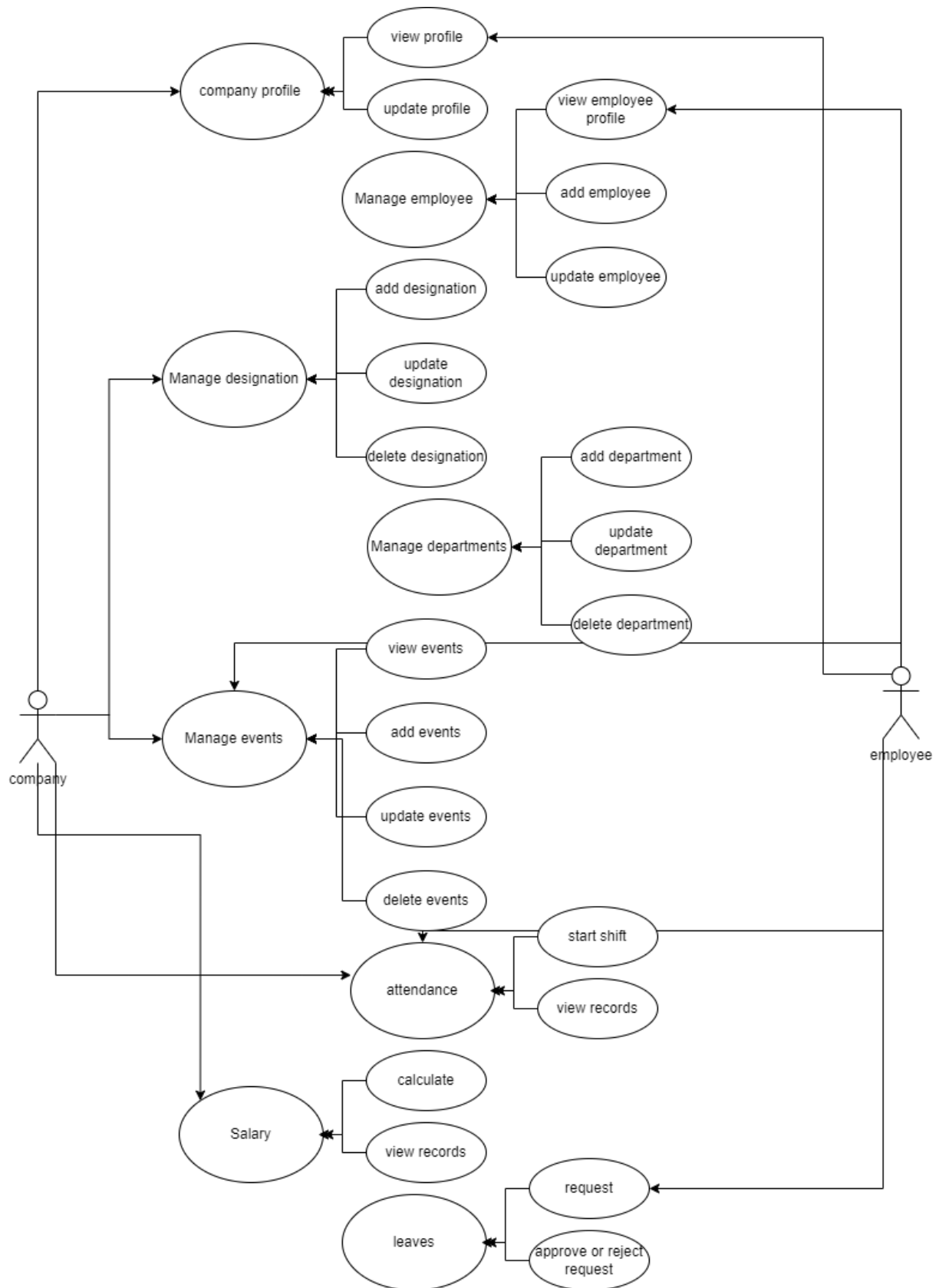
First level DFD



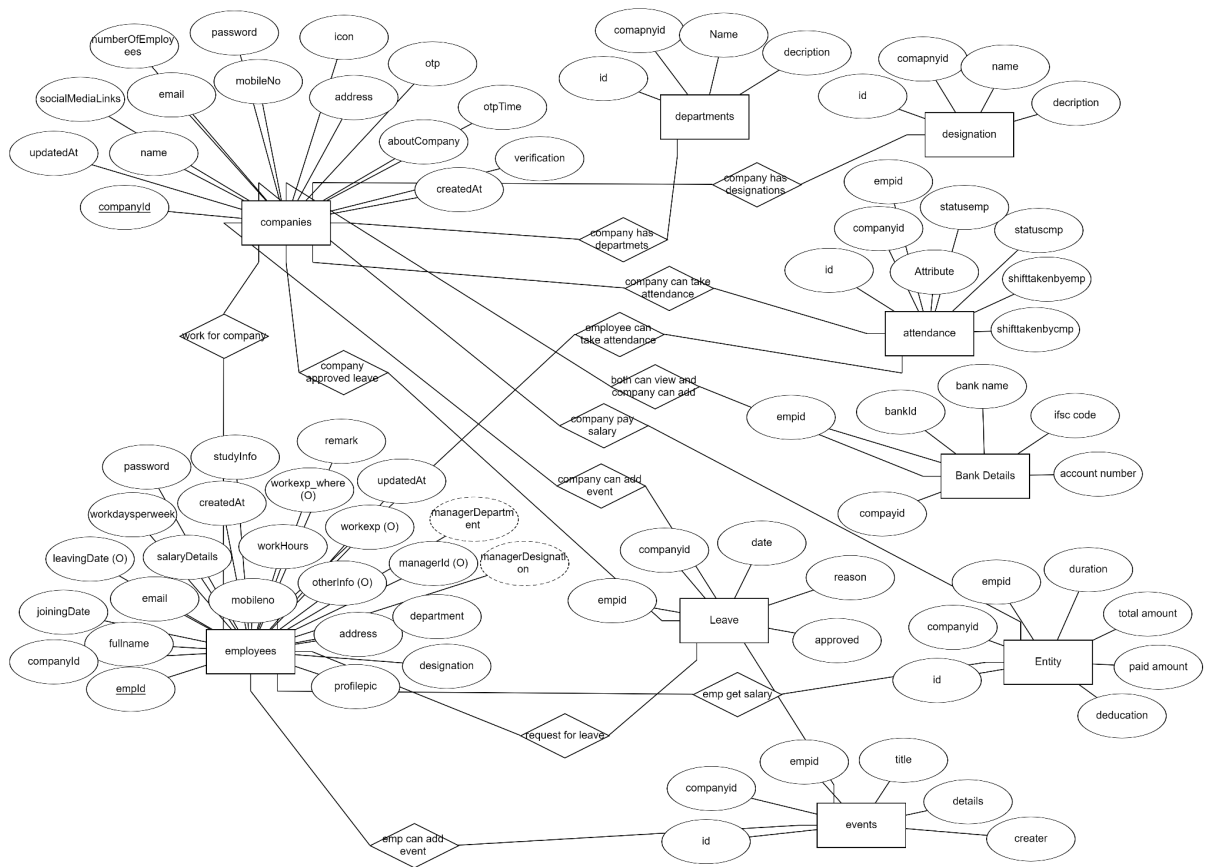




3.2 Use Case Diagram



3.3 ER Diagram



3.4 Database design

1. Companies

NAME	DATATYPE	CONSTRAINT	DESCRIPTION
id	ObjectID	PK	Company id
name	string	Required	Company name
email	string	Required	Company email
mobilenno	number	Required	Company mobilenno
address	string	Required	Company address
password	string	Required	Company password
about company	string	Required	Company information
icon	string	Required	Company icon
numberOfemployee	number	Required	Number of employees
links	Object Array		Company links
CreatedAt	date	Required	Creation time
UpdatedAt	date		Updation time
Registrationverification	boolean	Required	Verification status
otptime	number	Required	Otp generation time
OTP	number	Required	Otp is sent to user

2. Employees

NAME	DATATYPE	CONSTRAINT	DESCRIPTION
id	ObjectID	PK	Employee id
fullname	string	Required	Employee name
email	string	Required	Employee email
mobilenno	number	Required	Employee mobilenno
address	string	Required	Employee address
profilepic	string	Required	Employee picture
designation	ObjectID	FK	Reference designations
department	ObjectID	FK	Reference departments
workexp	number		Number of months
workexp_where	string		Details about where emp worked
studyinfo	string	Required	Study information
remark	string		Remark if any
otherdetails	string		Other details
companyid	ObjectID	FK	Reference companies
createdAt	date	Required	Creation time
updatedAt	date		Updation time
joiningdate	date	Required	Joining date
leavingdate	date		Leaving date
password	string	Required	password
workhours	number	Required	Working hours daily
hourlysalary	number	Required	Per hour salary
currency	string	Required	Currency
gender	string	Required	Gender
attendancestatus	boolean	Required	Status of shift

3. Departments

NAME	DATATYPE	CONSTRAINT	DESCRIPTION
id	ObjectID	PK	department Id
Companyid	ObjectID	FK	Reference companies
departmentname	string	Required	Department name
description	string	Required	Department description

4. Designations

NAME	DATATYPE	CONSTRAINT	DESCRIPTION
id	ObjectID	PK	Designation Id
Companyid	ObjectID	FK	Reference companies
Designationname	string	Required	Designation name
description	string	Required	Designation description

5. Attendance

NAME	DATATYPE	CONSTRAINT	DESCRIPTION
id	ObjectID	PK	Attendance Id
Employeeid	ObjectID	FK	Reference employees
Companyid	ObjectID	FK	Reference companies
Date	date	Required	Attendance date
Statuscmp	Boolean		Status shift
Statusemp	Boolean		Status shift
shiftyTakenByEmployee	Object array		Object array of shifts
shiftyTakenByCompany	Object array		Object array of shifts

6. Events

NAME	DATATYPE	CONSTRAINT	DESCRIPTION
id	ObjectID	PK	Event Id
Companyid	ObjectID	FK	Reference companies
Employeeid	ObjectID	FK	Reference employees
Title	string	Required	Event title
Start	date	Required	Event start time
End	date	Required	Event end time
allDay	Boolean		All day event
Url	string		Redirect link
BackgroundColor	string		Color
type	string	Required	Event type public or private
Iscompany	Boolean	Required	Added by a company or not
Bordercolor	string		Color

7. Eventtype


NAME	DATATYPE	CONSTRAINT	DESCRIPTION
id	ObjectID	PK	Eventtype Id
Companyid	ObjectID	FK	Reference companies
Type	String	Required	Event type holiday or meeting
BackgroundColor	String	Required	Color

8. Leaves

NAME	DATATYPE	CONSTRAINT	DESCRIPTION
id	ObjectID	PK	Leave Id
Companyid	ObjectID	FK	Reference companies
Employeeid	ObjectID	FK	Reference employees
Startdate	Date	Required	Start date
Enddate	Date	Required	End date
Halfday	Number	Required	Number of half-day
Fullday	Number	Required	Number of full-day
Reason	String	Required	Reason for leave
Status	Boolean	Required	Leave status

3.5 User interface

Email: support@ems.com | Phone: +9199874 256322



[Home](#)
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[Join Now](#)


Hello folks!

#1 Employee Management System

Welco

We provide facility to manage your employes very effectively as well as a lot of other functionality.


[Join Now](#)




Company Portal

Here, Company can create account and access all functionality of EMS manage employes Company can create account and access all functionality of EMS manage employes Company can create account and access all functionality of EMS manage employes.

[Go to Company portal](#)




Employee Portal

Here, Company can create account and access all functionality of EMS manage employes Company can create account and access all functionality of EMS manage employes Company can create account and access all functionality of EMS manage employes.


[Go to Employee portal](#)

Services




Create Schedule

Lorem, ipsum dolor sit amet consectetur adipiscing elit consectetur adipiscing elit consectetur adipiscing elit




Attendance

Lorem, ipsum dolor sit amet consectetur adipiscing elit consectetur adipiscing elit consectetur adipiscing elit



Salary Management

Lorem, ipsum dolor sit amet consectetur adipiscing elit consectetur adipiscing elit consectetur adipiscing elit










Other functionality

Lorem, ipsum dolor sit amet consectetur adipiscing elit consectetur adipiscing elit consectetur adipiscing elit

Contact us

Get connected with us on social networks:



Lorem ipsum dolor sit amet consectetur, adipiscing elit. Quasi eveniet natus deleniti maxime, earum corporis possimus quia commodi quibusdam fuga porro ducimus.





PRODUCTS


[EMS](#)
[Bootstrap 5](#)
[Node.js](#)
[React.js](#)

USEFUL LINKS

[Tour](#)
[Companies](#)
[About Us](#)
[Login/Register](#)

CONTACT

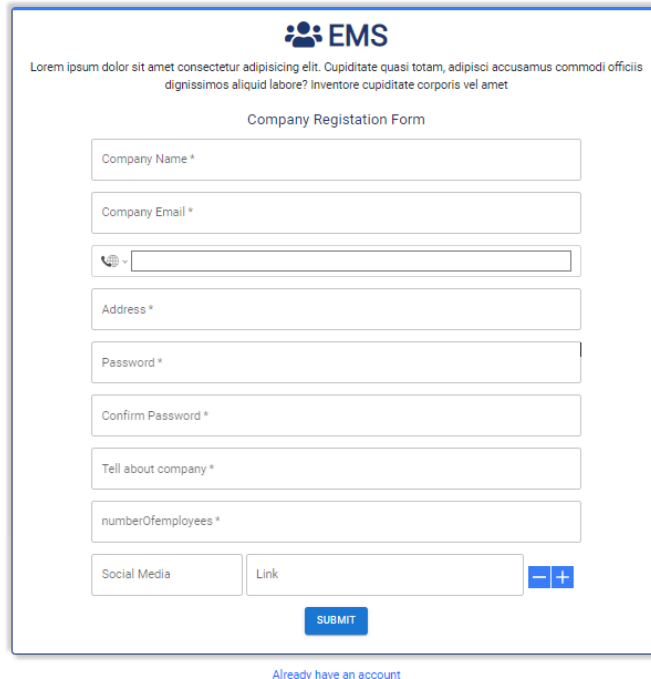
 Vakanda , NDT 10012, US
 info@vakanda.com
 + 02 524 325 89
 + 01 585 578 20

© 2022 Copyright: 

3.5.1 Home page

This is the home page of ems.

Page No.23




EMS

Lorem ipsum dolor sit amet consectetur adipiscing elit. Cupiditate quasi totam, adipisci accusamus commodi officiis dignissimos aliquid labore? Inventore cupiditate corporis vel amet

Company Registration Form

Company Name *

Company Email *

 -



Address *

Password *

Confirm Password *

Tell about company *

numberOfemployees *

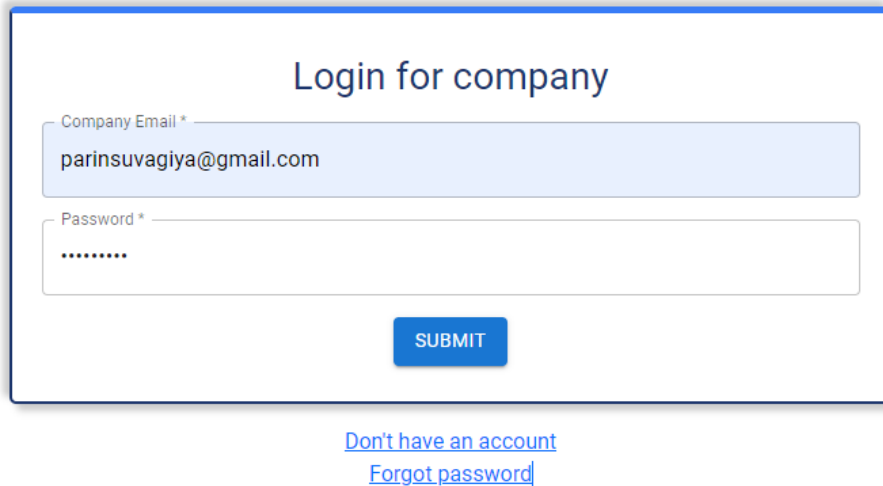
Social Media Link  

SUBMIT

[Already have an account](#)

3.5.2 Company registration page

Company registration form



Login for company

Company Email *

Password *

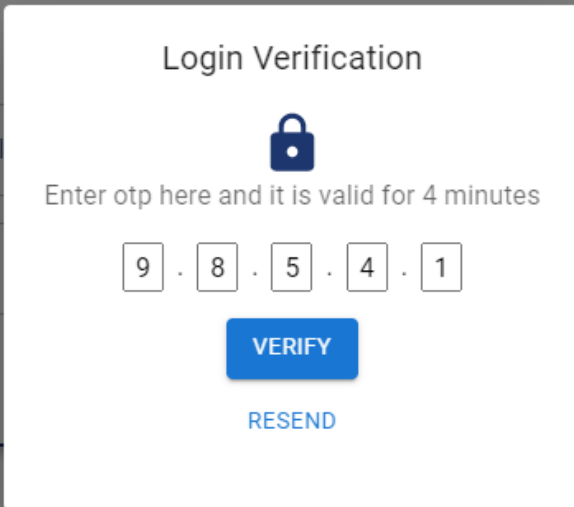
SUBMIT

[Don't have an account](#)


[Forgot password](#)

3.5.3 Company Login

Company login form



Login Verification



Enter otp here and it is valid for 4 minutes

9 . 8 . 5 . 4 . 1

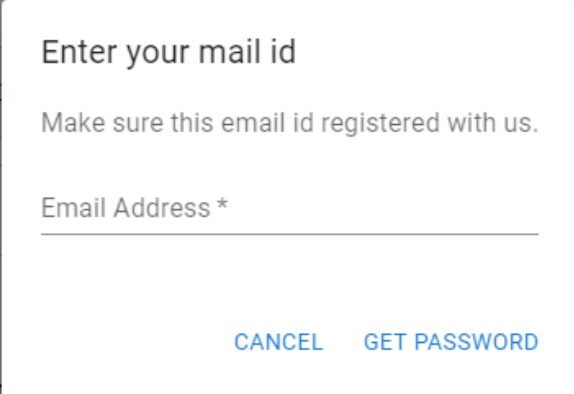
VERIFY

RESEND

[Forgot password](#)

3.5.4 verify OTP

Verify Otp page



Enter your mail id

Make sure this email id registered with us.

Email Address *

CANCEL GET PASSWORD

[Don't have an account](#)

[Forgot password](#)

3.5.4 forgot password

Forgot password page

<

EMS

>

Home

Profile

Schedule

Manage employee

Attendance

Leave

Salary

Dashboard

Employee Details

Current Employees
6

[view more](#)

Leaved Employees
0

[view more](#)

Employees on leave today
0

[view more](#)

Employees started shift
1

[view more](#)

Manage Employees

View Profile

Scheduler

view & edit employees



Attendance

Leave

Salary

3.5.5 company dashboard

Company dashboard page it shows some statistics and redirects links.





Profile

Edit & View profile

Company Name *

Company Email *



Address *

Tell about company *

numberOfemployees *

numberOfemployees *

Platform

Link

-
+

UPDATE

Change Password

Old Password *

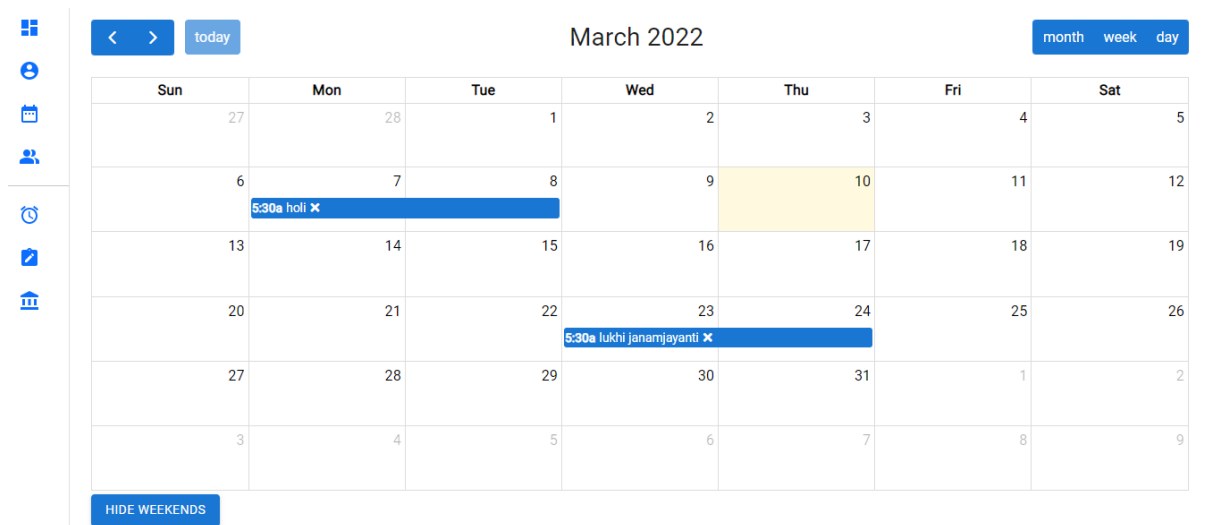
New Password *

Confirm New Password *

UPDATE

3.5.6 company profile & edit profile

Company profile page view, update company profile



3.5.7 Scheduler

Company scheduler add, update, delete event

Mange employee

OPTIONS ▾

Employees
 REPLACE MANAGER

Search

+

Profile pic	FullName	Email	MobileNo	Address	Gender	JoiningDate	leavingDate	More
	shakti mohan	aniketpatel1270@gmail.com	+919374178456	2, Service Rd, Goraguntepalya, Yeshwanthpura	female	Mon Mar 07 2022	-----	
	nora fatehi	gmcreation127@gmail.com	+918525456478	Avani Vision, First floor,78 S.N Pandit Street, Elgin Rd, Kolkata, West Bengal 700020, India	female	Sun Mar 06 2022	-----	
	remo ddd	gmcreation1257@gmail.com	+918525456477	23B, Lansdowne Pl, Near Sishu Mangal Hospital, Dover Terrace, Ballygunge, Kolkata, West Bengal 700020 India	female	Sun Mar 06 2022	-----	

Rows per page: 10 ▾
 1–6 of 6
 < >

3.5.8 View employees

[View, edit employee profile](#)

Replace Manager

Select Old Manager Details

Designation ▼ Department ▼ Find Manager ▼

Note: Select Designation and Department both for filtering manager

Select New Manager Details

Designation ▼ Department ▼ Find Manager ▼

Note: Select Designation and Department both for filtering manager

CANCEL REPLACE

3.5.9 Replace manager

Update manager of employees

View And Edit Employee

Employee Full Name * shakti mohan

Email * aniketpatel1270@gmail.com

+91 93741 78456

Address * 2, Service Rd, Goraguntepalya, Yeshwanthpura

Gender Female ▼

Designation jocker ▼

Department entertainment ▼

Select Manager or Head of employee

3.5.10 Edit employee

Edit employee profile

+ Add New Employee

+

+

Select Manager or Head of employee

Manager Designation

Manager Department

Find Manager

Note: Select Manager Department and Select Manager Designation both for filtering manager

v

Note: Enter month over here

Note: you can add multiple companies name as well add duration

Salary Details:

0

0

0

0

0

0

v









dd-mm-yyyy

v

SUBMIT

3.5.11 Add employee

Add new employee

Departments			
Search		+	
Department Name	Description	Edit	Delete
entertainment	funny		
editing	editing		
photoshoot	photoshoot		
dance	dance		
Rows per page: 5 1-4 of 4 < >			

3.5.12 view Departments

Search

Add Department


Department *


Description *


CANCEL ADD

photoshoot

Edit







3.5.13 Add Departments

Search

Update Department

Department *

entertainment


Description *


funny

CANCEL UPDATE

photoshoot

E





3.5.14 Update Department

Designation

Search

+

Designation Name	Description	Edit	Delete
jocker	designation description	<div></div>	<div></div>
contestents	designation description	<div></div>	<div></div>
manager	designation description	<div></div>	<div></div>
jauges	designation description	<div></div>	<div></div>

Rows per page:

10

1-4 of 4

3.5.15 view designations

Add Department

Department *

Description *

CANCEL

ADD

3.5.16 Add designations

Update Department

Department *

sells

Description *

all sells manage in this department

CANCEL

UPDATE

3.5.17 Update Designations

Attendance


Filter Employees

Designation
manager

Department
Head

Find Employee
PARIN SUVAGIYA

Note: Select Department and Designation both field for filtering employees



Name: PARIN SUVAGIYA
Email: parinsuvagiya@gmail.com
Mobileno: +919664700359
JoiningDate: Sun Mar 06 2022
Gender: male

FILTER

Start or End shift:

START SHIFT

Filter Attendance Records

Select Date To *
01-03-2022

Select Date From *
31-03-2022

FILTER

Attendance Records

Search

Date	Shift Taken By Employee			Shift Taken By Company		
Tue Mar 01 2022	StartTime	EndTime	TotalTime(H:M)	StartTime	EndTime	TotalTime(H:M)
	5:49:53 PM	5:50:49 PM	0:0	5:51:58 PM	5:54:10 PM	120:2
	5:50:53 PM	5:54:17 PM	120:3			
Sun Mar 06 2022	StartTime	EndTime	TotalTime(H:M)	StartTime	EndTime	TotalTime(H:M)
	5:54:27 PM	10:45:21 PM	4:50	5:54:33 PM	10:49:50 PM	4:55
	10:45:24 PM	Not end yet	Not end yet	10:49:54 PM	3:01:52 PM	64:11

Rows per page: 10 1-2 of 2

3.5.18 Manage attendance

Manage attendance and view old records and view employees list who started shift

Manage Leaves

Leave Requests

Search

Employee Details	Start Date	End Date	Reason	Full Day	Half Day	Manage Leave
PARIN SUVAGIYA Email: parinsuvagiya@gmail.com Mo: +919664700359	Mon Mar 07 2022	Tue Mar 08 2022	good	0	1	<div><div></div><div></div></div>

Rows per page: 10 1-1 of 1

Employees on leave today

Search

Employee Details	Start Date	End Date	Reason	Full Day	Half Day	Manage Leave
------------------	------------	----------	--------	----------	----------	--------------

Rows per page: 10 0-0 of 0

Filter Leave Records

Email *
PARINSUVAGIYA@GMAIL.COM

Start Date *

01-03-2022

End Date *

31-03-2022

SUBMIT

Leave Records

Search

Start Date	End Date	Reason	Full Day	Half Day	status
Sun Mar 06 2022	Mon Mar 07 2022	good	1	0	approved
Mon Mar 07 2022	Tue Mar 08 2022	good	0	1	pending

Rows per page: 10 1-2 of 2

3.5.19 Manage leaves

Manage employees leave and view their records

Manage Salary Details

Fill Details

Designation
manager

Department
Head


Select Date To *
01-03-2022

Select Date From *
31-03-2022

Shift Taken By
Employee

Find Employee
PARIN SUVAGIYA

Note: Select Department and Designation both field for filtering employees



Name: PARIN SUVAGIYA
Email: parinsuvagiya@gmail.com
Mobileno: +919664700359
JoiningDate: Sun Mar 06 2022
Gender: male

FILTER

Total time this month(HH:MM)	Pay Rate	Total Salary
124:53	15(BEF/fr)Belgian Franc	1873.25






Salary Records

Start Time	End Time	Total Time(HH:MM)
3/6/2022, 5:49:53 PM	3/6/2022, 5:50:49 PM	0:0
3/1/2022, 5:50:53 PM	3/6/2022, 5:54:17 PM	120:3
3/6/2022, 5:54:27 PM	3/6/2022, 10:45:21 PM	4:50
3/6/2022, 10:45:24 PM	Not end yet	-


Rows per page: 10 1-4 of 4

3.5.20 Manage salary

Cout salary between two dates



Company Details

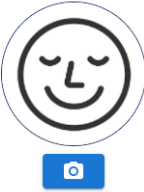


Name:
PS Productions and sells
Email:
parinsuvaglya@gmail.com
Mobileno:
+919664700359
Address:
20,NARAYAN NAGAR BAPASITARAMCHOK, SIMADA
AboutCompany:
good good good good good good good good good good
Number Of Employees:
10
Social Media or Other Links:
[website](#) [instagram](#)

3.5.21 Employee view company profile

View company profile

My Profile



My Details

Name:
PARIN SUVAGIYA

Email:
parinsuvagiya@gmail.com

Mobileno:
+919664700359

Address:
20,NARAYAN NAGAR BAPASITARAMCHOK, SIMADA

Gender:
male

Qualification:
BCA

Joining Date:
Sun Mar 06 2022

✎ Change Password

Old Password *

New Password *

Confirm New Password *

UPDATE

3.5.22 Employee views my profile
View my profile and edit password

< >

today

March 2022

month week day

Sun	Mon	Tue	Wed	Thu	Fri	Sat
27	28	1	2	3	4	5
6	7	8 +2 more	9	10 12a birthday ✕	11	12
13	14 12a meeting	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31 holiday	1	2
3	4	5	6	7	8	9

HIDE WEEKENDS

3.5.23 employee Scheduler

View events and add personal and public events

Attendance Details

END SHIFT

Attendance Records

Search

Date	Shift Taken By Employee	Shift Taken By Company																		
Tue Mar 01 2022	<table><tr><th>StartTime</th><th>EndTime</th><th>TotalTime(H:M)</th></tr><tr><td>5:49:53 PM</td><td>5:50:49 PM</td><td>0:0</td></tr><tr><td>5:50:53 PM</td><td>5:54:17 PM</td><td>120:3</td></tr></table>	StartTime	EndTime	TotalTime(H:M)	5:49:53 PM	5:50:49 PM	0:0	5:50:53 PM	5:54:17 PM	120:3	<table><tr><th>StartTime</th><th>EndTime</th><th>TotalTime(H:M)</th></tr><tr><td>5:51:58 PM</td><td>5:54:10 PM</td><td>120:2</td></tr></table>	StartTime	EndTime	TotalTime(H:M)	5:51:58 PM	5:54:10 PM	120:2			
	StartTime	EndTime	TotalTime(H:M)																	
	5:49:53 PM	5:50:49 PM	0:0																	
5:50:53 PM	5:54:17 PM	120:3																		
StartTime	EndTime	TotalTime(H:M)																		
5:51:58 PM	5:54:10 PM	120:2																		
Sun Mar 06 2022	<table><tr><th>StartTime</th><th>EndTime</th><th>TotalTime(H:M)</th></tr><tr><td>5:54:27 PM</td><td>10:45:21 PM</td><td>4:50</td></tr><tr><td>10:45:24 PM</td><td>Not end yet</td><td>Not end yet</td></tr></table>	StartTime	EndTime	TotalTime(H:M)	5:54:27 PM	10:45:21 PM	4:50	10:45:24 PM	Not end yet	Not end yet	<table><tr><th>StartTime</th><th>EndTime</th><th>TotalTime(H:M)</th></tr><tr><td>5:54:33 PM</td><td>10:49:50 PM</td><td>4:55</td></tr><tr><td>10:49:54 PM</td><td>3:01:52 PM</td><td>64:11</td></tr></table>	StartTime	EndTime	TotalTime(H:M)	5:54:33 PM	10:49:50 PM	4:55	10:49:54 PM	3:01:52 PM	64:11
	StartTime	EndTime	TotalTime(H:M)																	
	5:54:27 PM	10:45:21 PM	4:50																	
10:45:24 PM	Not end yet	Not end yet																		
StartTime	EndTime	TotalTime(H:M)																		
5:54:33 PM	10:49:50 PM	4:55																		
10:49:54 PM	3:01:52 PM	64:11																		

Rows per page: 10 1-2 of 2

3.5.24 Attendance

Track working hours

REQUEST FOR LEAVE

Leave Records

Search

Q

Start Date	End Date	Reason	Full Day	Half Day	Status
Sun Mar 06 2022	Mon Mar 07 2022	good	1	0	approved
Mon Mar 07 2022	Tue Mar 08 2022	good	0	1	pending

Rows per page: 10

1-2 of 2

<

>

3.5.25 leave history

REQUEST FOR LEAVE

Leave Records

Request for leave

Start Date *

dd-mm-yyyy

End Date *

dd-mm-yyyy

Note: If you want one day or half day leave enter same date

HalfDay *

0

FullDay *

0

Reason *

CANCEL

SUBMIT

3.5.26 send leave request

Request for leave and view old records

Salary Details

Total time this month(HH:MM)

124:53

Pay Rate

15(BEF/fr)Belgian Franc

Total Salary

1873.25

Salary Records

Shift Taken By

Employee

Start Time	End Time	Total Time(HH:MM)	Salary
3/6/2022, 5:49:53 PM	3/6/2022, 5:50:49 PM	0:0	0.00(BEF/fr)Belgian Franc
3/1/2022, 5:50:53 PM	3/6/2022, 5:54:17 PM	120:3	1800.75(BEF/fr)Belgian Franc
3/6/2022, 5:54:27 PM	3/6/2022, 10:45:21 PM	4:50	72.50(BEF/fr)Belgian Franc
3/6/2022, 10:45:24 PM	Not end yet	-	-

Rows per page: 10

1-4 of 4

<

>

3.5.27 Salary


View salary details daily basis

4. Testing

4.1 Unit testing

Test case for company registration

Test id	Test field	Stop execute	Executed result	Actual result
1	Company name	Required	minimum 5 character required	Expected
2	Email	Valid email	email is invalid	Expected
3	Mobile no	Required	mobile no is invalid	Expected
4	Address	Required	Required, minimum 30 character	Expected
5	password	Required	minimum 8 character required	Expected
6	Confirm password	Required	Does not match with password	Expected
7	About the company	Required	minimum 50 character required	Expected
8	Number of employees	Not less than 1	must have valid digits	Expected
9	Social media link	Empty	No error	Expected




Lorem ipsum dolor sit amet consectetur adipisicing elit. Cupiditate quasi totam, adipisci accusamus commodi officiis dignissimos aliquid labore? Inventore cupiditate corporis vel amet

Company Registration Form

Required

email is invalid



mobile no is invalid



Required

Required

Required

Required

Required



[Already have an account](#)

4.1.1 company registration error view

Test case for the company and employee login

Test id	Test field	Stop execute	Executed result	Actual result
1	Email	Valid email	email is invalid, Email not registered	Expected
2	Password	Required	minimum 8 character	Expected

✕ Email not registered

Login for company

Company Email *

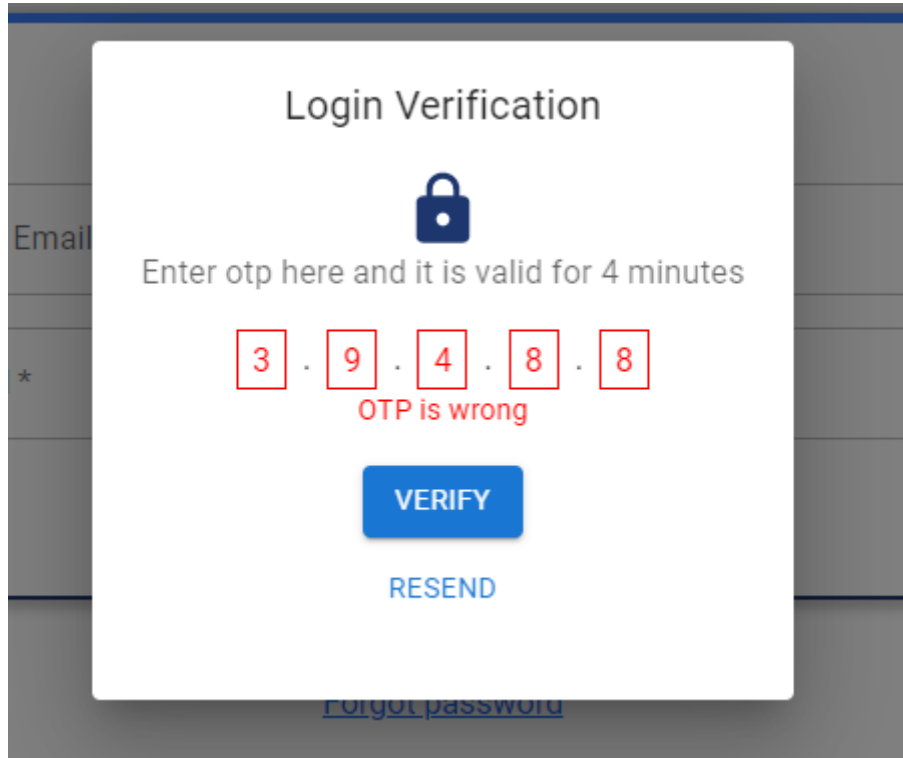
Email not registered

Password *


SUBMIT

[Don't have an account](#)
[Forgot password](#)

4.1.2 company login error view



Login Verification



Enter otp here and it is valid for 4 minutes

3 . 9 . 4 . 8 . 8

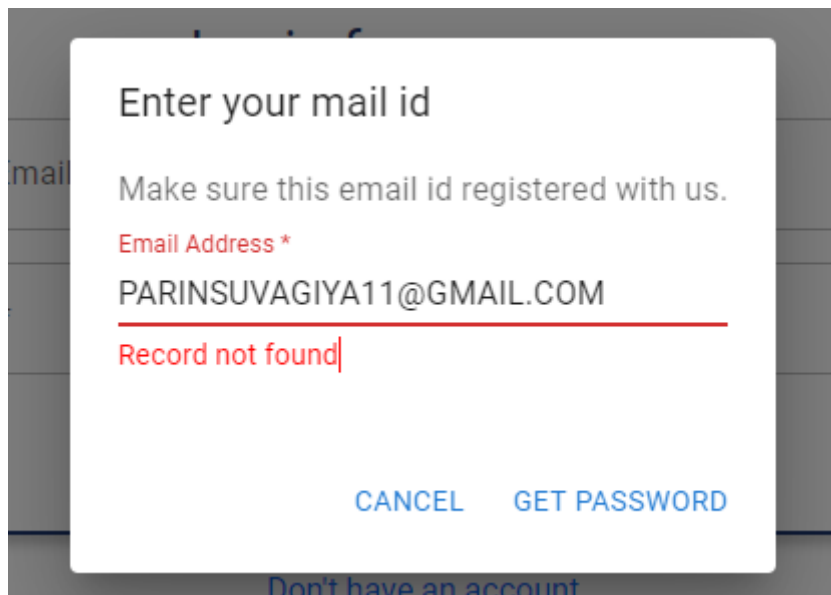
OTP is wrong

VERIFY

RESEND

[Forgot password](#)

4.1.3 OTP error view



Enter your mail id

Make sure this email id registered with us.

Email Address *

PARINSUVAGIYA11@GMAIL.COM

Record not found

CANCEL GET PASSWORD

[Don't have an account](#)

4.1.4 forgot password error view

Test case for add employee

Test id	Test field	Stop execute	Executed result	Actual result
1	Name	Required	minimum 5 characters required	Expected
2	Mobile no	Required	mobile no is invalid	Expected
3	Email	Required	email is invalid	Expected
4	Address	Required	Required	Expected
5	Gender	Required	Required	Expected
6	Designation	Required	Required	Expected
4	departments	Required	Required	Expected
8	Manager	Required	Required	Expected
9	Workexp			Expected
10	Company where worked			Expected
11	Education details	Required	Required	Expected
12	Salary	Required	Required	Expected
13	Remark			Expected
14	About employees			Expected
15	Joining date	Required	Required	Expected

Test case for designation

Test id	Test field	Stop execute	Executed result	Actual result
1	Designation name	Required	Required	Expected
2	Description	Required	Required	Expected

Test case for the department

Test id	Test field	Stop execute	Executed result	Actual result
1	Department name	Required	Required	Expected
2	Description	Required	Required	Expected

Test case for events

Test id	Test field	Stop execute	Executed result	Actual result
1	Tital	Required	Required	Expected
2	Strat date	Required	Required	Expected
3	End date	Required	Required	Expected
4	All day			Expected
5	Category	Required	Required	Expected
6	Type	Required	Required	Expected
7	Link			

We have performed other test cases and found expected results.

Add employees

EMS

[https://app-ems-system.herokuapp.com/compa...](#)

EMS

Mange employee

OPTIONS

+

Add New Employee

Employee Full Name *

Required

Email *

email is invalid

Address *

Reuired

Gender

Required

Designation

Required

Department

Required

Select Manager or Head of employee

Manager Designation

Manager Department

Find Manager

Note: Select Manager Department and Select Manager Designation both for filtering manager

Work experience

Note: Enter month over here

Company Name where you worked before

Note: you can add multiple companies name as well add duration

Education Detail *

Required

Salary Details:

work hours per day

1

working Day in a week

0

Hourly Salary

0

Avg Weekly Salary

0

Avg Monthly Salary

0

Avg Yearly Salary

0

Currency

Remark

Add something about employee

Joining Date *

dd/mm/yyyy

Required

SUBMIT

4.1.5 Add employee error view



Edit employees

EMS

View And Edit Employee

Employee Full Name *
ummeer riaz

Email *
khodiyarfashion009@gmail.com

+91 94567 89565

Address *
Apollo Gleneagles Hospitals, Day Care centre, 58, Canal Circular Rd,
Kolkata, West Bengal 700054, India

Gender
Male

Designation
manager

Department
Selling Department

Select Manager or Head of employee

Manager Designation Manager Department Find Manager

Note: Select Manager Department and Select Manager Designation both for filtering manager

Work experience
12

Note: Enter month over here

Company Name where you worked before
Reliance Industry

Note: you can add multiple companies name as well add duration

Education Detail *
B.Com

Salary Details:

work hours per day 6	working Day in a week 5	Hourly Salary 6
Avg Weekly Salary 180	Avg Monthly Salary 720	Avg Yearly Salary 8640
Currary Indian Ru...		

Remark

Add something about employee
employee communication skill good

Joining Date *
24/03/2022

leaving Date
dd/mm/yyyy

Note: If Employee is leaving company set leaving date and update

CANCEL UPDATE

4.1.6 update employee view

Replace Manager

Replace Manager

Select Old Manager Details

Designation ▼

Department ▼

Find Manager▼

Required

Required

Required

Note: Select Designation and Department both for filtering manager

Select New Manager Details

Designation ▼

Department ▼

Find Manager▼

Required

Required

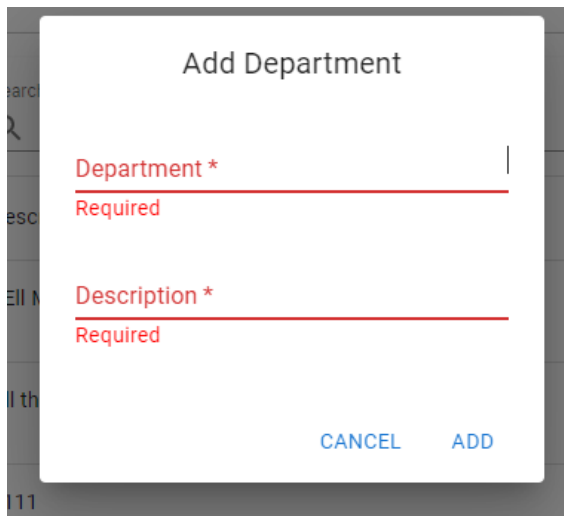
Required

Note: Select Designation and Department both for filtering manager

CANCEL REPLACE

4.1.7 replace manager error view

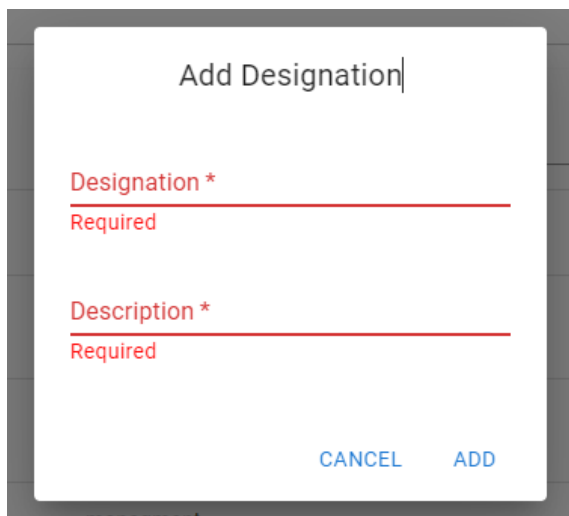
Departments



A screenshot of a web application showing an 'Add Department' modal form. The form has two input fields: 'Department *' and 'Description *'. Both fields are marked as 'Required' in red text below the input line. The 'Department *' field contains a single character, possibly 'I'. At the bottom right of the modal, there are two buttons: 'CANCEL' and 'ADD'.

4.1.8 add department error view

Designation



A screenshot of a web application showing an 'Add Designation' modal form. The form has two input fields: 'Designation *' and 'Description *'. Both fields are marked as 'Required' in red text below the input line. At the bottom right of the modal, there are two buttons: 'CANCEL' and 'ADD'.

4.1.9 add designation error view

Event

Add Event

Title *

Required

Start Time *

01-03-2022 00:00

End Time

17-03-2022 00:00

☐ AllDay

Event Category

+

Required

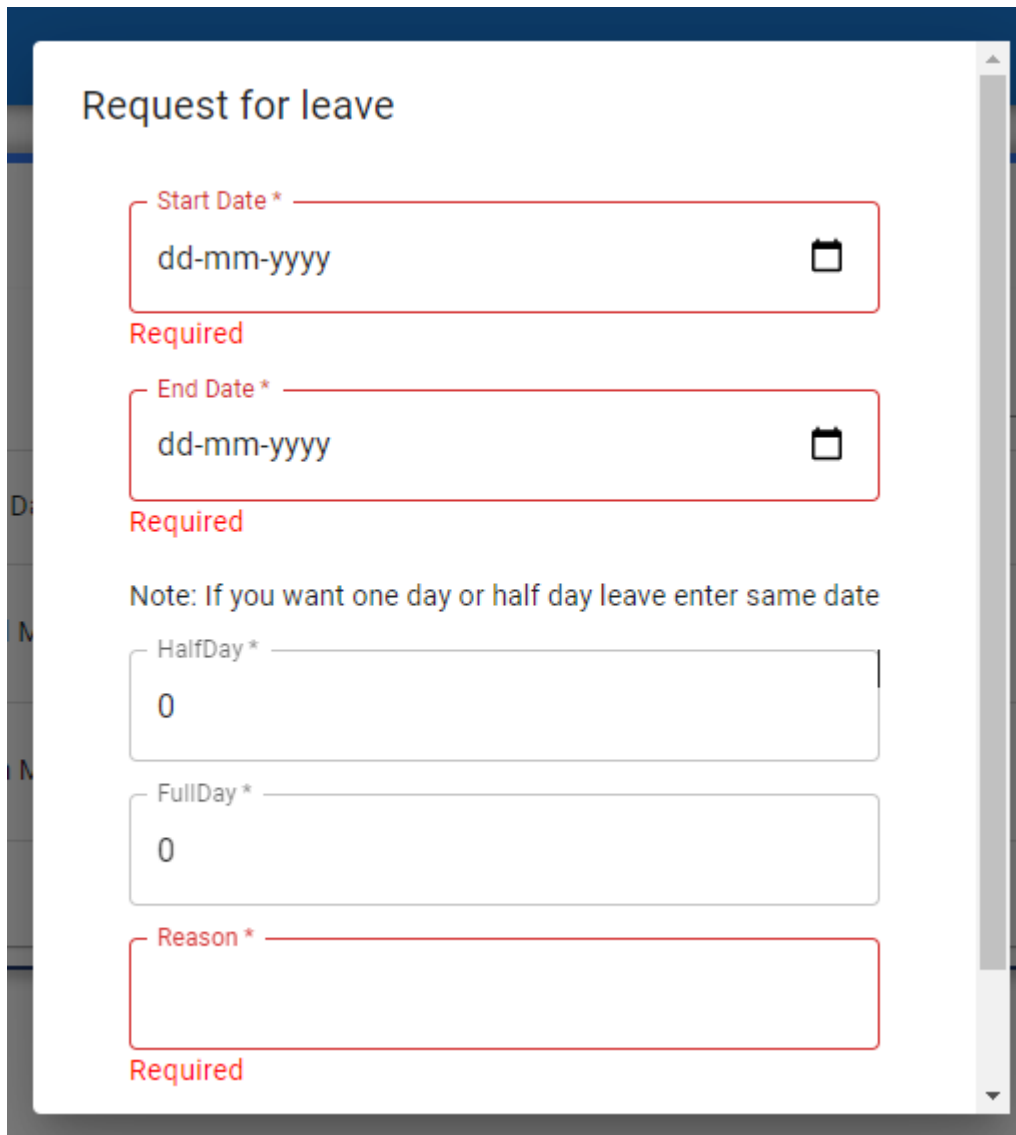
Event Type

Required


Link

4.1.10 add event error view


Request for leave



Request for leave

Start Date * 

Required

End Date * 

Required

Note: If you want one day or half day leave enter same date

HalfDay *

FullDay *

Reason *

Required

4.1.11 leave request error view

Shift Manager, Salary counter, leave manager all modules are working as we expected.

4.2 Navigation Testing

- All navigation links are redirecting users to the perfect page and protected routes are not allowing an unauthorized user to view the page.

4.3 Functional Testing

- Company login & registration are working fine with validation and authentication
- Employee login working fine
- Manage employees working fine
- Department manager working as we expected
- Designation manager working as we expected
- Shift manager is working fine
- Salary manager is working fine
- Event module is also working fine
- Leave manager is working file
- Automatic mail sending functionality is working

4.4 Environment Testing

Firefox browser, Internet Explorer and chrome consider testing for environment operability of software.

Web server	–	created using nodejs
Database	–	MongoDB
OS	–	Windows
Browser	–	Firefox/Internet Explorer/Chrome

Postman is used for API environment testing

5. Conclusion

The purpose of this website is to provide functionality for managing employees. EMS is a web application where multiple companies can create their account and get access to a lot of functionality for managing employees. EMS has API which separates the frontend and backend and also helps to integrate with other websites. EMS provides functionalities like scheduling important meetings, and events and managing employees' leave, salary, attendance, and working hours with effective sorting and filtering techniques. This system provides a portal for employees to interact with the company and track their daily data like attendance, leave, salary, and working hours. EMS frontend is built using Reactjs, which is a javascript library. EMS Backend provides an Application programming interface (API) that is built using Nodejs, Expressjs, and MongoDB. When user requests for EMS frontend will load on the web browser window and API will provide data on user needs.

6. Bibliography

Websites

<https://reactjs.org/docs/getting-started.html>

<https://nodejs.org/en/docs/>

<https://mongoosejs.com/docs/api.html>

<https://mui.com/>

<https://getbootstrap.com/docs/5.0/getting-started/introduction/>