



SDJ INTERNATIONAL
COLLEGE

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:
Prof. Nidhi Desai

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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
2019065920 Lukhi Rushabh

INDEX


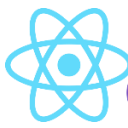





Sr No	Description	Page No.
1	Introduction	
	1.1 Project Summary	1
	1.2 Project Technical Profile	2
2	Scope & Planning	
	2.1 Requirement Analysis	3
	2.2 Feasibility Study	6
	2.3 Timeline Chart	7
	2.4 Future Development	9
	2.5 Technology Details	9
3	Designing	
	3.1 Data Flow Diagram	10
	3.2 Use Case Diagram	13
	3.3 ER Diagram	14
	3.4 Database Design	15
	3.5 User Interface	20
4	Testing	
	4.1 Unit Testing	37
	4.2 Navigation Testing	49
	4.3 Functional Testing	49
	4.4 Environment Testing	50
5	Conclusion	51
6	Bibliography	52

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&Redux
Backend:	    API in Backend
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:	1. Suvagiya Parin H. 2. Mangukiya Gaurav M. 3. Lukhi Rushabh D.

2. Scope & Planning

2. 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 auto generated 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

- Calculate salary according to shift started 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 analyse 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 analyse 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 Modelling														
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 testing															
5.3 functional testing															
5.4 environmental testing															

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 micro services. To simplify, an API delivers a user response to a system and sends the system's response back to a user.

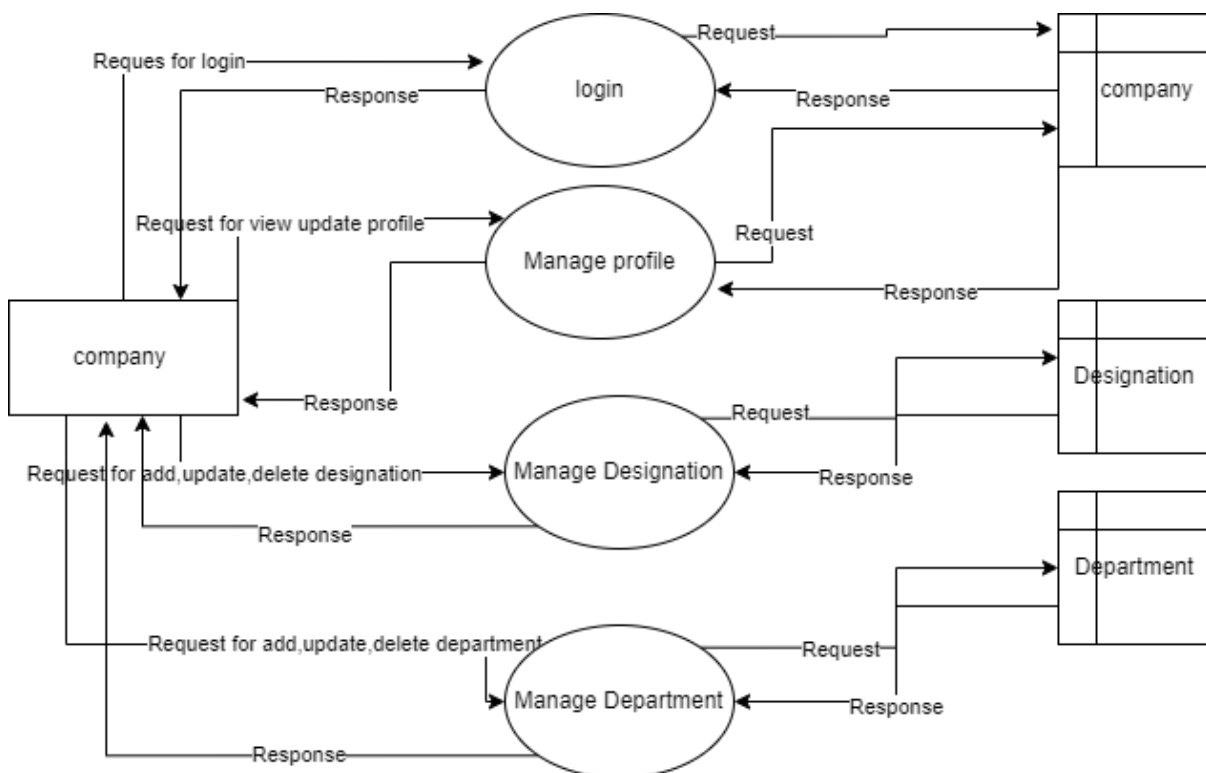
3. Designing

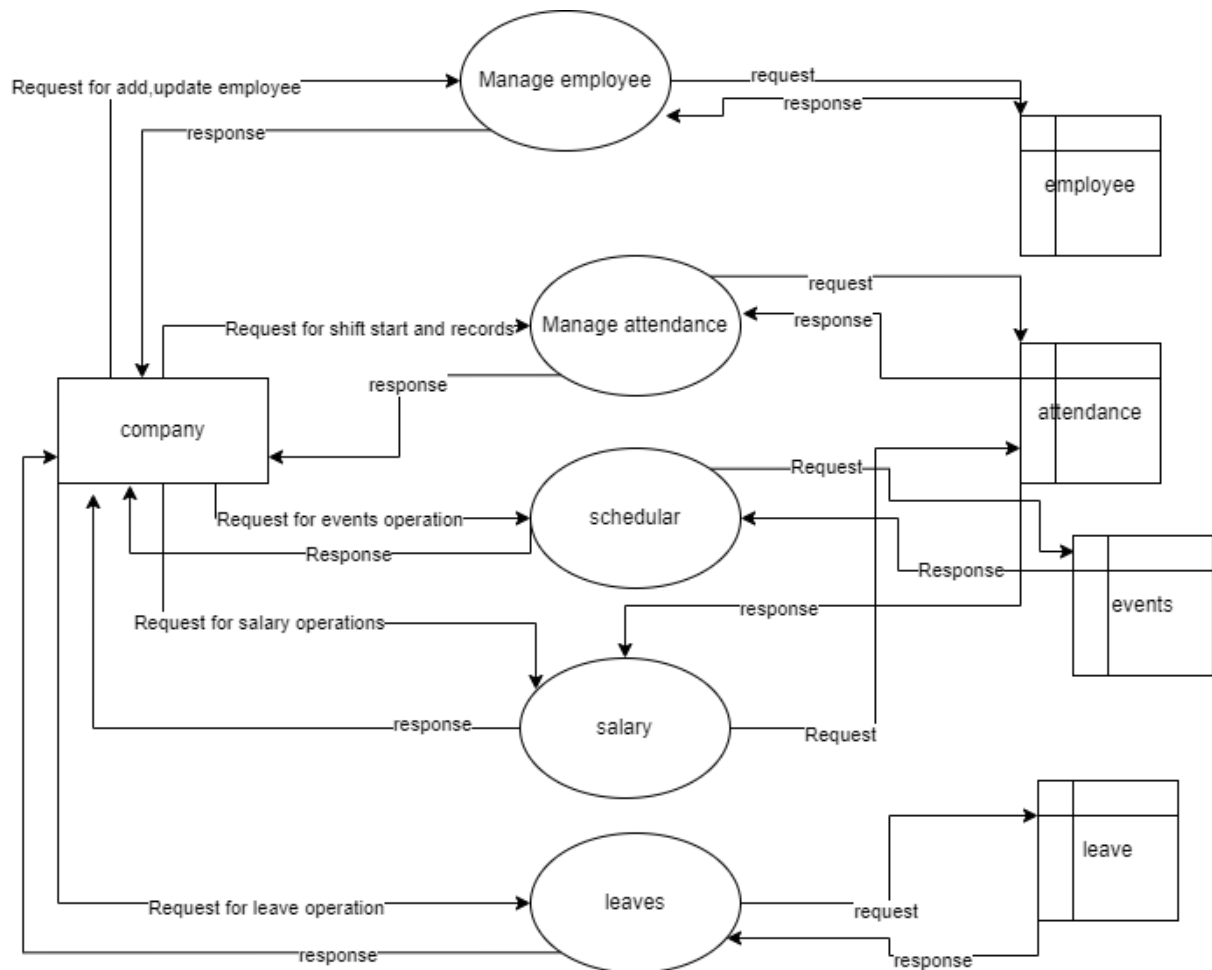
3.1 Data flow diagram

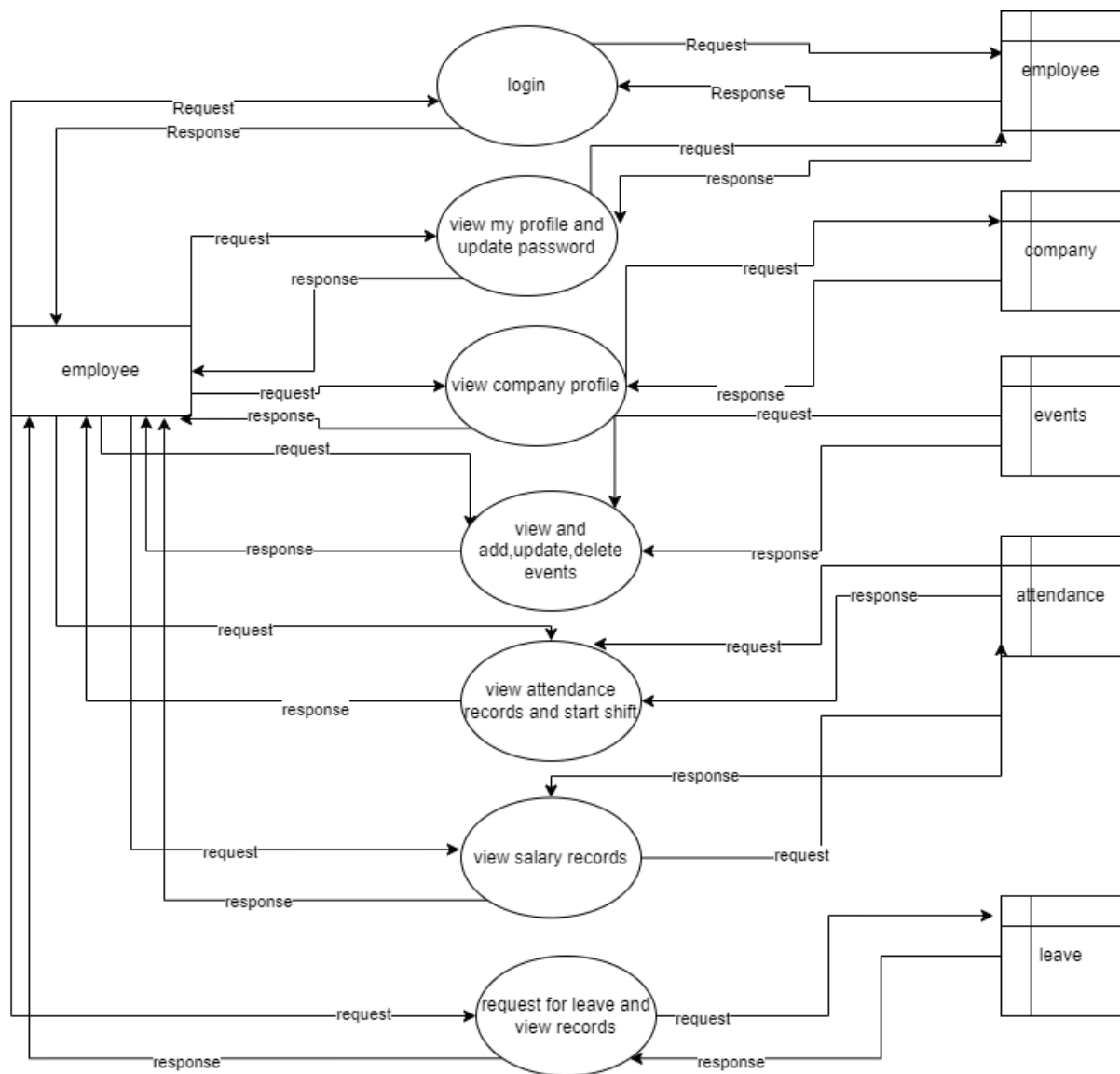
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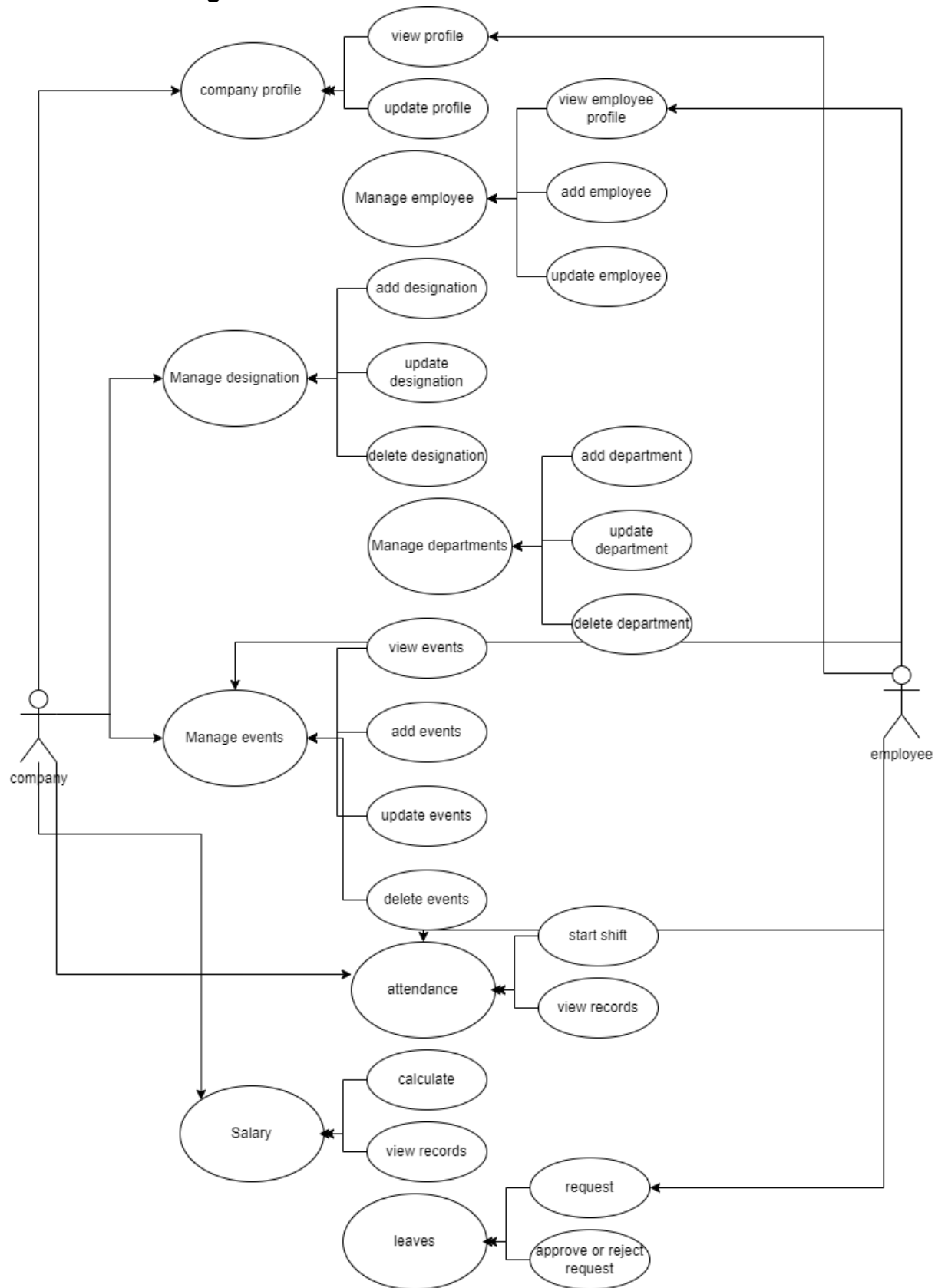
First level DFD





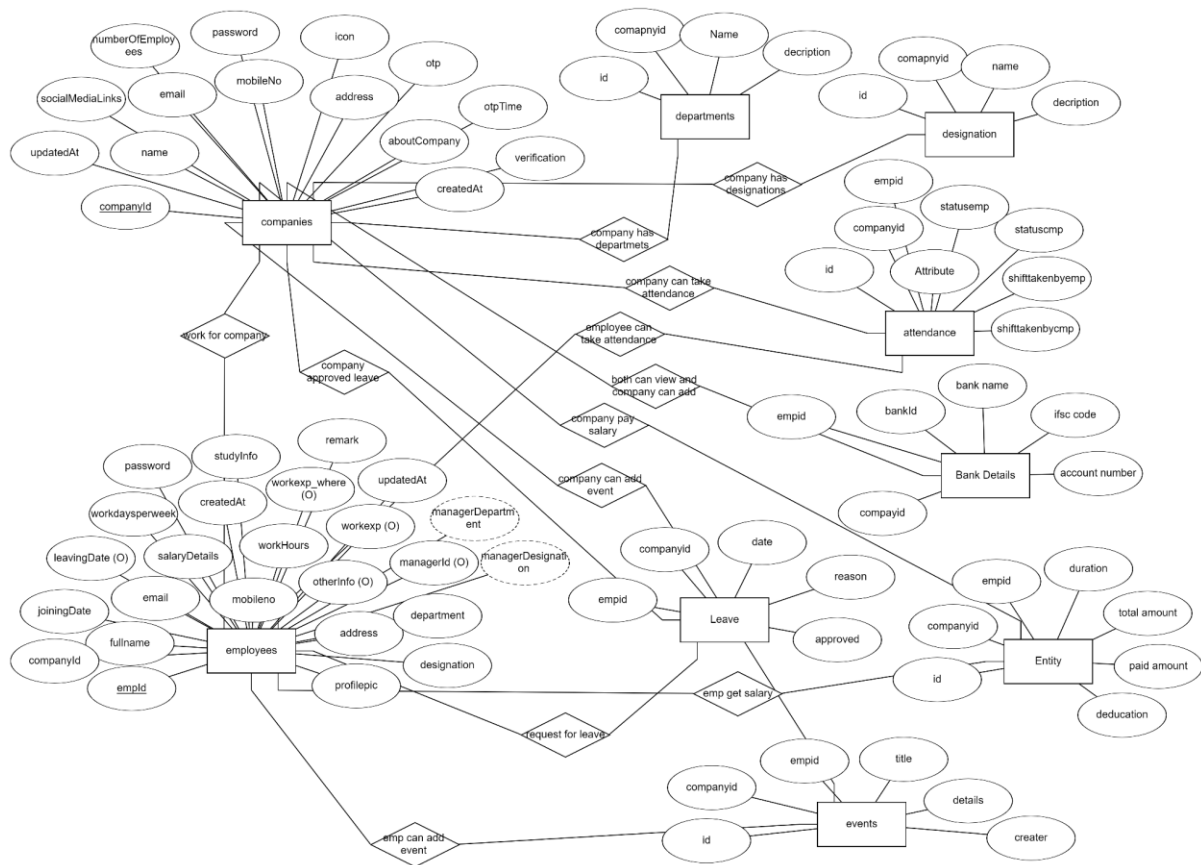


3.2 Use Case Diagram





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
mobilenos	number	Required	Company mobilenos
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](#)
[Services](#)
[About](#)
[Contact](#)
[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 adipisicing elit consectetur adipisicing elit consectetur adipisicing elit




Attendance

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



Salary Management

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










Other functionality

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

Contact us

Get connected with us on social networks:



Lorem ipsum dolor sit amet consectetur, adipisicing 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

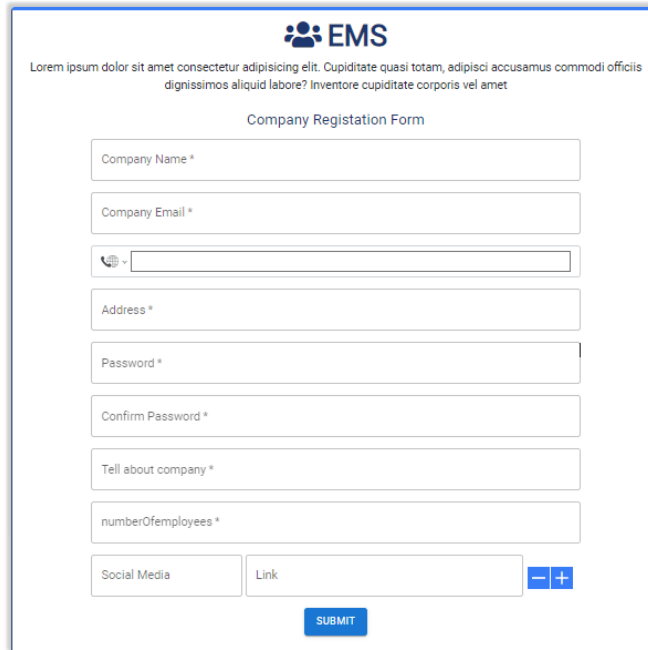
 Vakanda , NDT 10012, US
 info@vakanda.com
 + 02 524 325 89
 + 01 585 578 20

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3.5.1 Home page

- This is the home page of ems.

Page No.20




EMS

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

Company Name *

Company Email *

 -



Address *

Password *

Confirm Password *

Tell about company *

numberOfemployees *

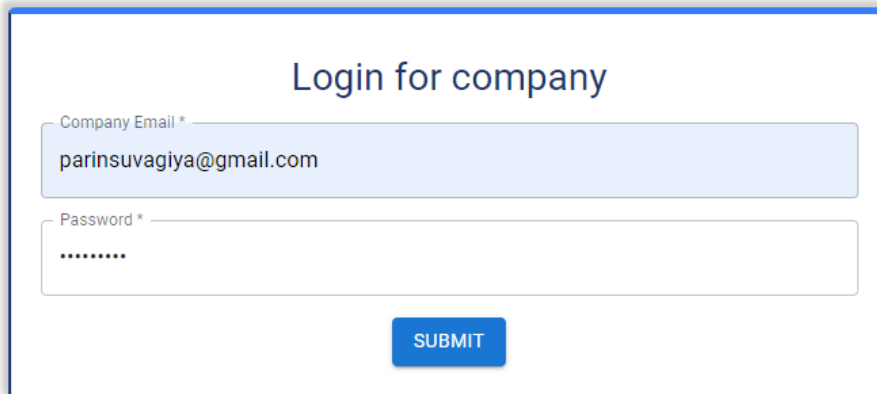
Social Media Link  

SUBMIT

[Already have an account](#)

3.5.2 Company registration page

- Company registration form with validation feature



Login for company

Company Email *

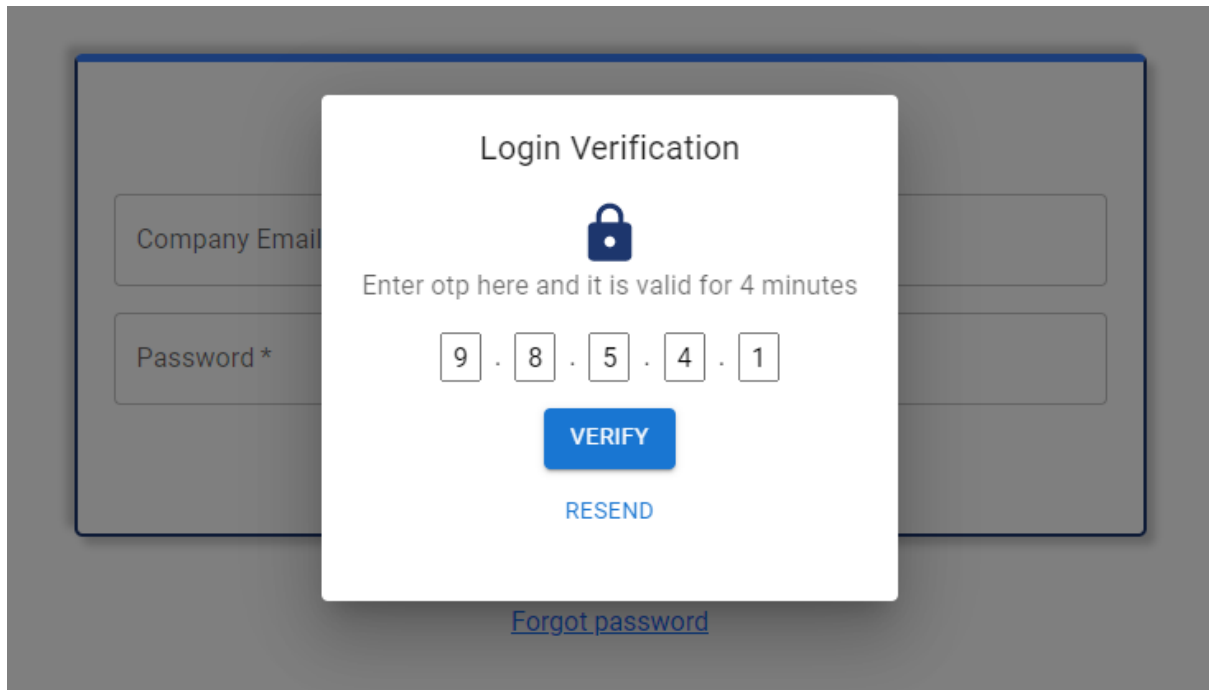
Password *

SUBMIT

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

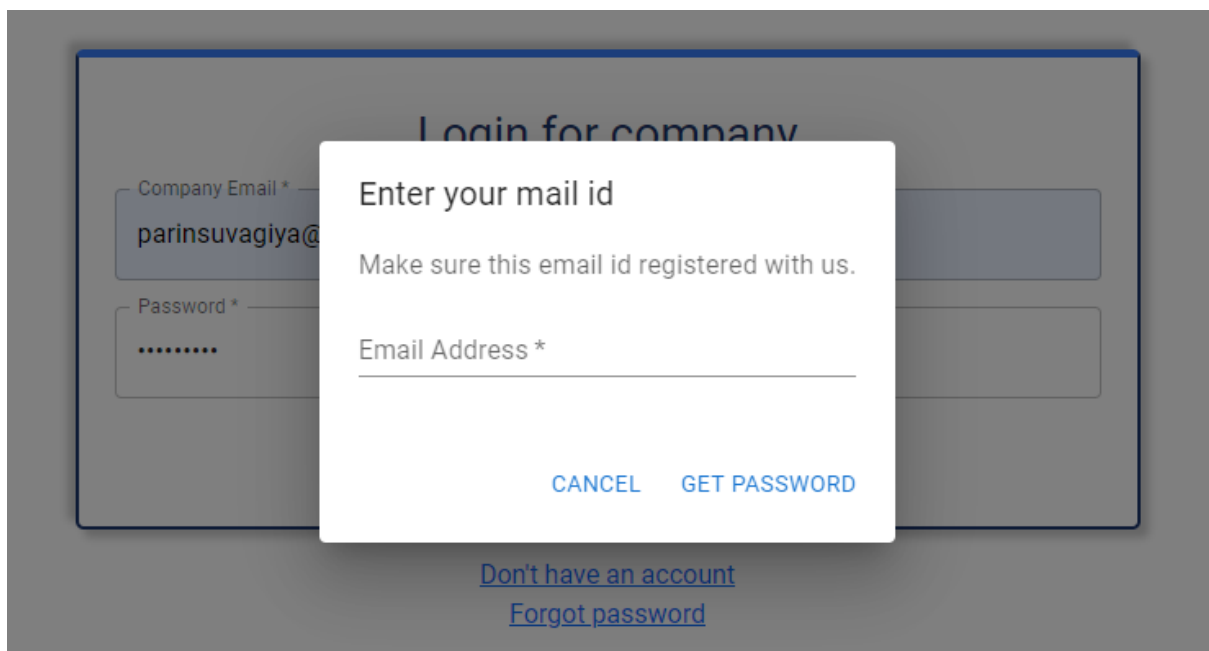
3.5.3 Company Login

- Company login form with validation and authentication



3.5.4 verify OTP

- Verify OTP popup with resend OTP functionality



3.5.4 forgot password

- Forgot password page



EMS

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

3.4.1 company dashboard

- Company dashboard page it shows some statistics and redirects links.

Profile

Edit & View profile

Company Name *
bollywood Ltd.

Company Email *
khodiyarfashion009@gmail.com

+91 87582 41799

Address *
1104, filmcity, mumbai andheri 395006 filmcity road

Tell about company *
we hire a new telent in bollywood for dance and entertainment

numberOfemployees *
1000

numberOfemployees *
1000

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

<

>

today

March 2022

month

week

day

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

HIDE WEEKENDS

3.5.7 Scheduler

- Company scheduler add, update, delete event and set public events for employees

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 *

Email *

Address *

Gender

Designation

Department

Select Manager or Head of employee

3.5.10 Edit employee

- Edit employee profile



EMS

Mange employee

OPTIONS

+ Add New Employee

Employee Full Name *

Email *

Address *

Gender

Designation

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

Note: Enter month over here

Company Name where you worked before

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

Education Detail *

Salary Details:

work hours per day

working Day in a week

Hourly Salary

Avg Weekly Salary

Avg Monthly Salary

Avg Yearly Salary

Currency

Remark

Add something about employee

Joining Date *









dd-mm-yyyy

SUBMIT

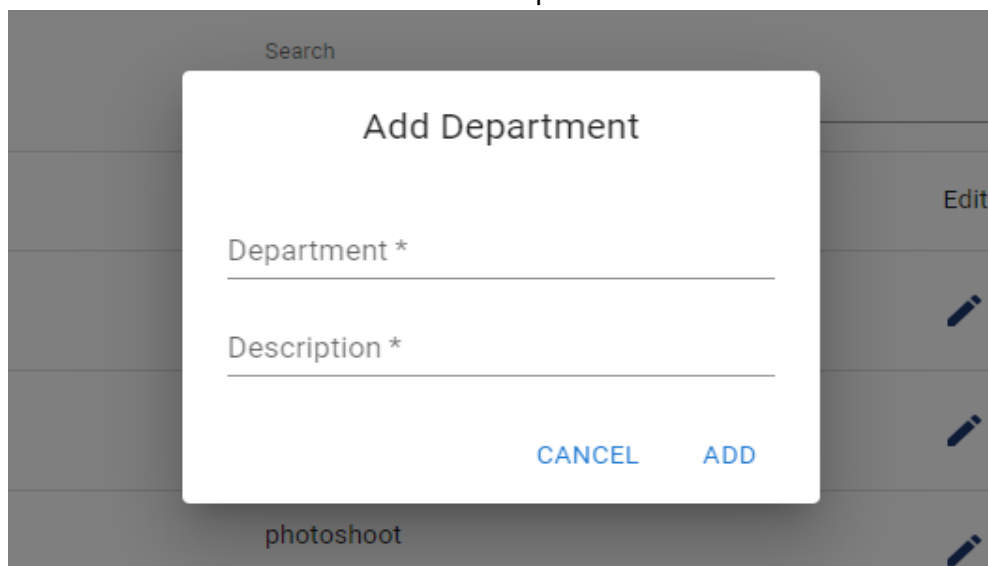
3.5.11 Add employee

- Add new employee

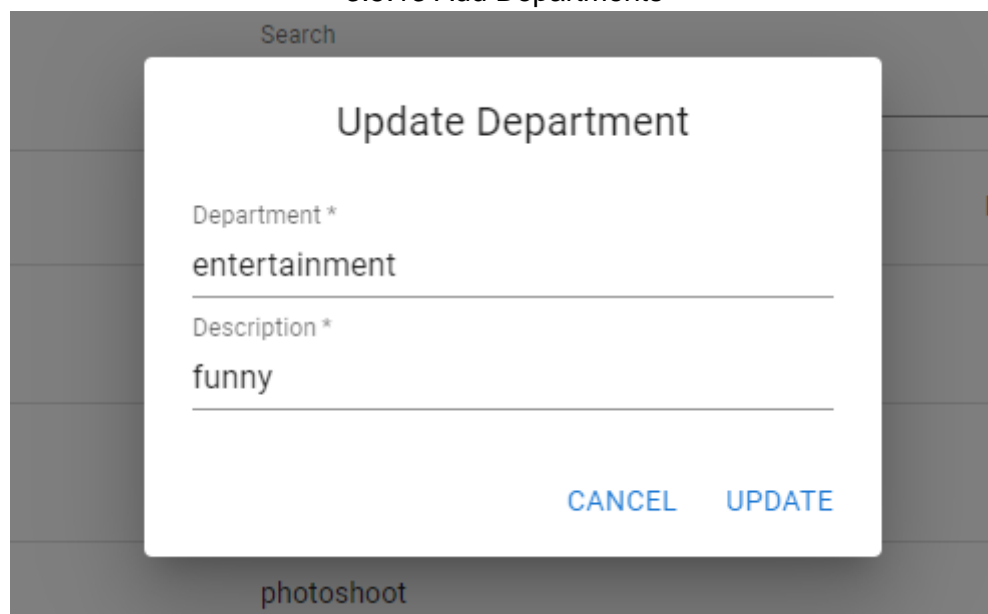
Page No.26

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












3.5.13 Add Departments



3.5.14 Update Department

- Manage Designation functionalities like view, add, delete designation

<div>  Designation <div> Search <input type="text"/> </div> <div>+</div> </div>			
Designation Name	Description	Edit	Delete
jocker	designation description		
contestents	designation description		
manager	designation description		
jauges	designation description		
<div> Rows per page: 10 1-4 of 4 <div>< ></div> </div>			

3.5.15 view designations

ion

man

latio

uct a

Add Department

Department *

Description *

CANCEL

ADD

3.5.16 Add designations

ion

ma

lat

uct

Update Department

Department *

Description *

CANCEL

UPDATE

3.5.17 Update Designations

- Manage Departments functionalities like view, add, delete department

Attendance

Filter Employees

Designation
manager

Department
sales

Find Employee
PARIN SUVAGIYA

Note: Select Department and Designation both field for filtering employees

Name: PARIN SUVAGIYA

Email: parinsuvagiya163@gmail.com

Mobileno: +918745236458

JoiningDate: Mon Mar 28 2022

Gender: male

FILTER

Start or End shift:

END SHIFT

Filter Attendance Records

Select Date To *
01-04-2022

Select Date From *
30-04-2022

FILTER

Attendance Records

Search

Date

Shift Taken By Employee

Shift Taken By Company

Fri Apr 01 2022

StartTime	EndTime	TotalTime(H:M)
1:30:16 PM	1:32:27 PM	0:2
1:32:47 PM	1:36:53 PM	0:4
1:37:02 PM	1:53:08 PM	0:16
1:53:11 PM	2:11:26 PM	0:18
6:47:58 PM	6:48:05 PM	0:0

StartTime	EndTime	TotalTime(H:M)
1:45:43 PM	1:53:24 PM	0:7
1:53:27 PM	2:08:58 PM	0:15
6:39:15 PM	6:46:24 PM	0:7

Tue Apr 05 2022

StartTime	EndTime	TotalTime(H:M)
11:02:37 AM	2:43:02 PM	3:40

StartTime	EndTime	TotalTime(H:M)
2:39:27 PM	Not end yet	Not end yet

Rows per page: 10 1-2 of 2 < >

Filter Employees by Attendance

Shift By
Employee

Shift Status
ON

Records


Search


Profile pic	FullName	Email	MobileNo	Designation	Department
	gaurav mangukiya	gauravmangukiya11@gmail.com	+917485121212	worker	sells

Rows per page: 10 1-1 of 1 < >

3.5.18 Manage attendance

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


 **Manage Leaves**

 **Leave Requests**

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	✗ ✓

Search

Rows per page: 10 ▾ 1-1 of 1 < >

 **Employees on leave today**

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

Search

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**

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

Search

Rows per page: 10 ▾ 1-2 of 2 < >

3.5.19 Manage leaves

- Manage employees leave and view their records

Page No.30

☰ EMS 🔑

🏠 👤 📅 ⌚ 📄 🏠

🏠 Manage Salary Details

Fill Details

Designation
manager

Department
sells

Select Date To *
01-04-2022

Shift Taken By
Employee

Find Employee
PARIN SUVAGIYA

Select Date From *
30-04-2022

Note: Select Department and Designation both field for filtering employees

Name: PARIN SUVAGIYA

Email: parinsuvagiya163@gmail.com

Mobilen0: +918745236458

JoiningDate: Mon Mar 28 2022

Gender: male

FILTER

Total time this month(HH:MM)	Pay Rate	Total Salary
4:20	5(AUD/\$)Australian Dollar	21.67

🏠 Salary Records

Start Time	End Time	Total Time(HH:MM)
4/1/2022, 1:30:16 PM	4/1/2022, 1:32:27 PM	0:2
4/1/2022, 1:32:47 PM	4/1/2022, 1:36:53 PM	0:4
4/1/2022, 1:37:02 PM	4/1/2022, 1:53:08 PM	0:16
4/1/2022, 1:53:11 PM	4/1/2022, 2:11:26 PM	0:18
4/1/2022, 6:47:58 PM	4/1/2022, 6:48:05 PM	0:0
4/5/2022, 11:02:37 AM	4/5/2022, 2:43:02 PM	3:40

Rows per page: 10 ▾ 1 – 6 of 6 < >

3.5.20 Manage salary

- Calculate salary between two dates



 **Company Details**



Name:
PS Productions and sells

Email:
parinsuvagiya@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

EMS

My Profile

My Details

Name:
PARIN SUVAGIYA

Email:
parinsuvagiya163@gmail.com


Mobileno:
+918745236458

Address:
20,NARAYAN NAGAR BAPASITARAMCHOK, SIMADA

Gender:
male

Qualification:
BCA

Joining Date:
Mon Mar 28 2022

 Change Password

3.5.22 Employee views my profile

- View my profile and edit password

Page No.33


< > today
March 2022
month week day

Sun	Mon	Tue	Wed	Thu	Fri	Sat
27	28	1	2	3	4	5
6	7	8 <small>+2 more</small>	9	10 <small>12a birthday ✕</small>	11	12
13	14 <small>12a meeting</small>	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30 <small>holiday</small>	31	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		
	StartTime	EndTime	TotalTime(H:M)	StartTime	EndTime	TotalTime(H:M)
Tue Mar 01 2022	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	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 < >

3.5.24 Attendance

- Track working hours & start and end shift

REQUEST FOR LEAVE					
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 < >		

3.5.25 leave history

- View leave history

REQUEST FOR LEAVE

Leave Records

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

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 *
!

dads@hh.com

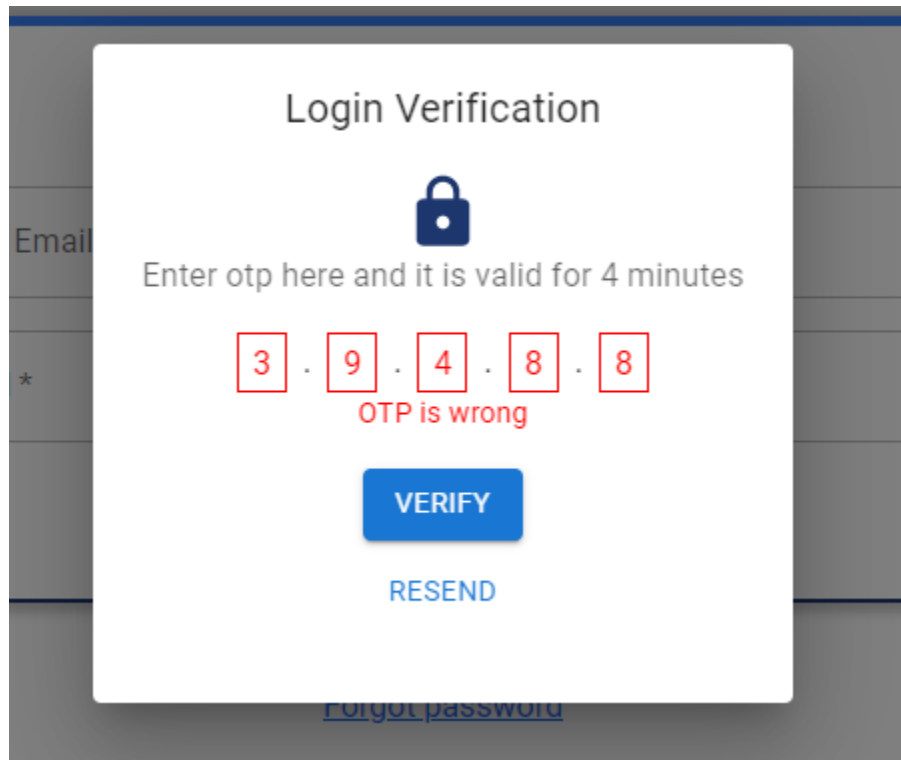
Password *
!

Email not registered

SUBMIT

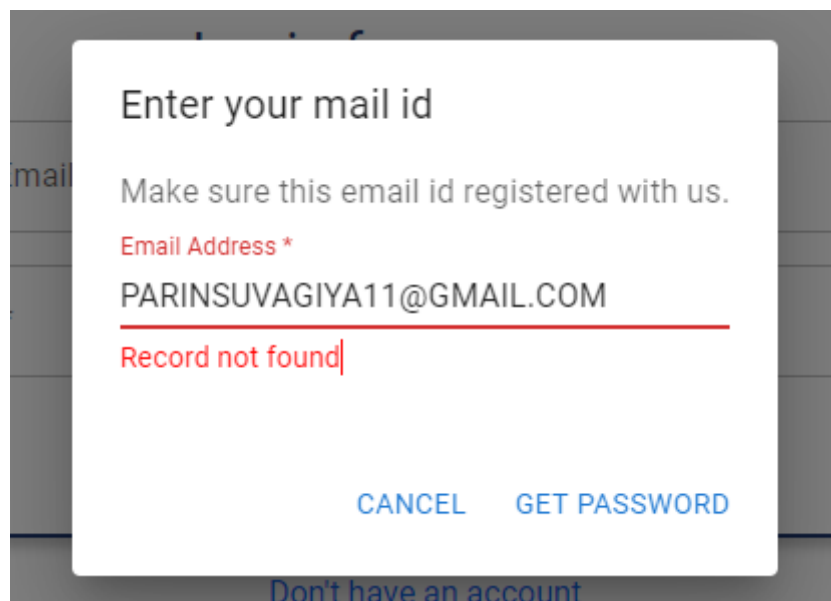
[Don't have an account](#)
[Forgot password](#)

4.1.2 company login error view



Modal titled "Login Verification" with a lock icon. It instructs the user to "Enter otp here and it is valid for 4 minutes". The OTP input field contains the digits "3", "9", "4", "8", "8" in red boxes. Below the input, the text "OTP is wrong" is displayed in red. At the bottom, there are two buttons: "VERIFY" (blue) and "RESEND" (blue).

4.1.3 OTP error view



Modal titled "Enter your mail id" with the instruction "Make sure this email id registered with us.". The input field is labeled "Email Address *" and contains the text "PARINSUVAGIYA11@GMAIL.COM". Below the input, the text "Record not found|" is displayed in red. At the bottom, there are two buttons: "CANCEL" (blue) and "GET PASSWORD" (blue).

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	Not required	No error	Expected

- 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 *

Required

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

I

Joining Date *

dd/mm/yyyy

Required

SUBMIT

4.1.5 Add employee error view

Edit employees

EMS

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

EMS

change employee

employees

FullName

Email

ummeer riaz

khodiyarfashion009@gmail.com

leavingDate

More

1-1 of 1

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 Designati...

Manager Departm...

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

Currency

Indian Ru...

Remark

Add something about employee

employee communication skill good

Joining Date *

24/03/2022

leaving Date

dd/mm/yyyy

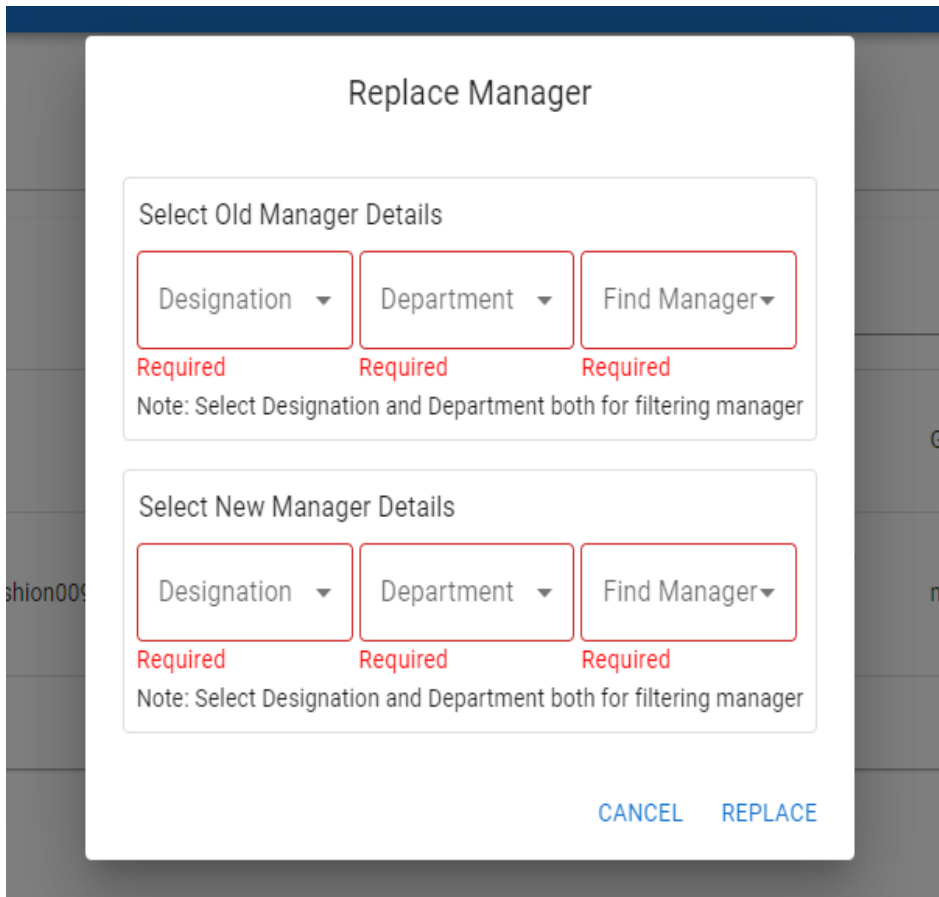
Note: If Employee is leaving company set leaving date and update

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▼

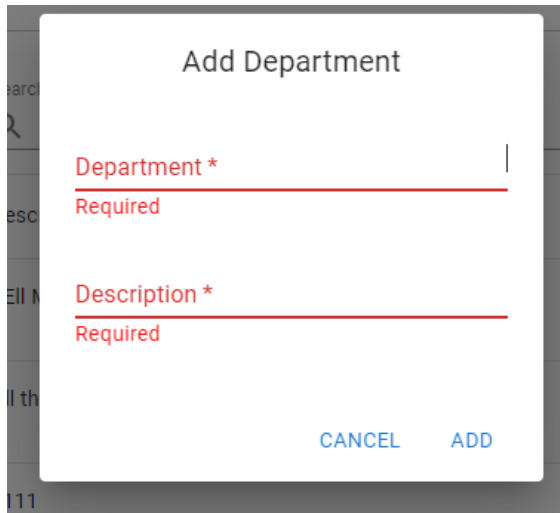
Required Required Required

Note: Select Designation and Department both for filtering manager

CANCEL REPLACE

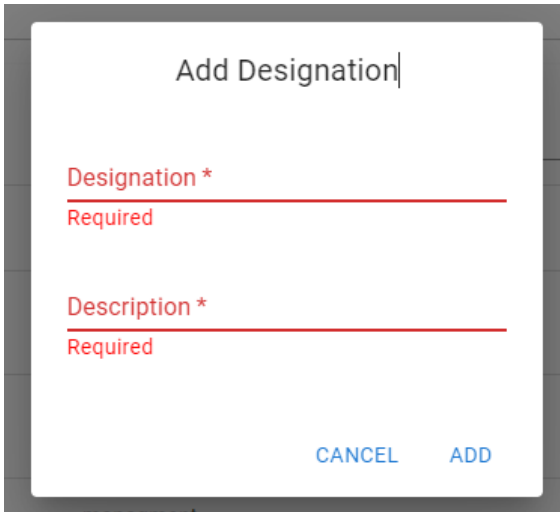
4.1.7 replace manager error view

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 empty and have a red underline with the word 'Required' in red text below them. At the bottom right of the modal, there are two buttons: 'CANCEL' and 'ADD'.

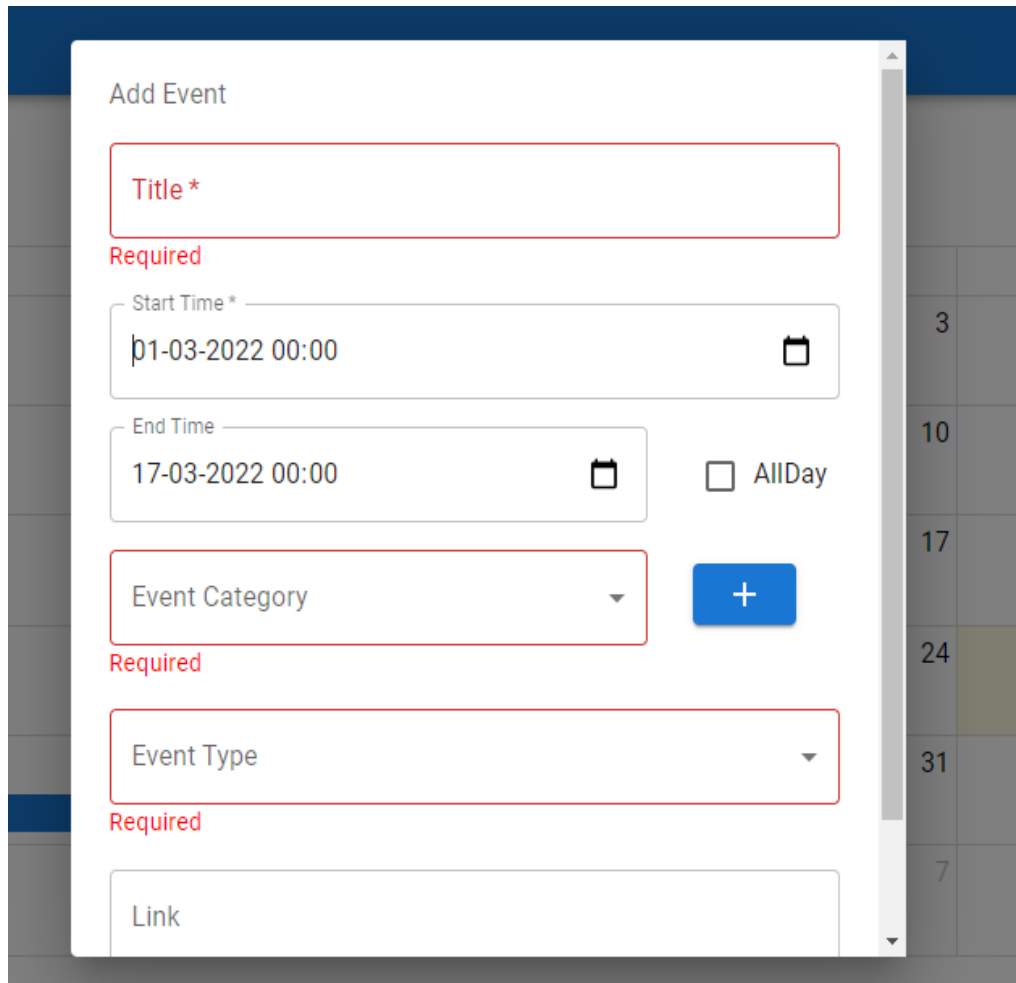
4.1.8 add department error view

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 empty and have a red underline with the word 'Required' in red text below them. 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

+

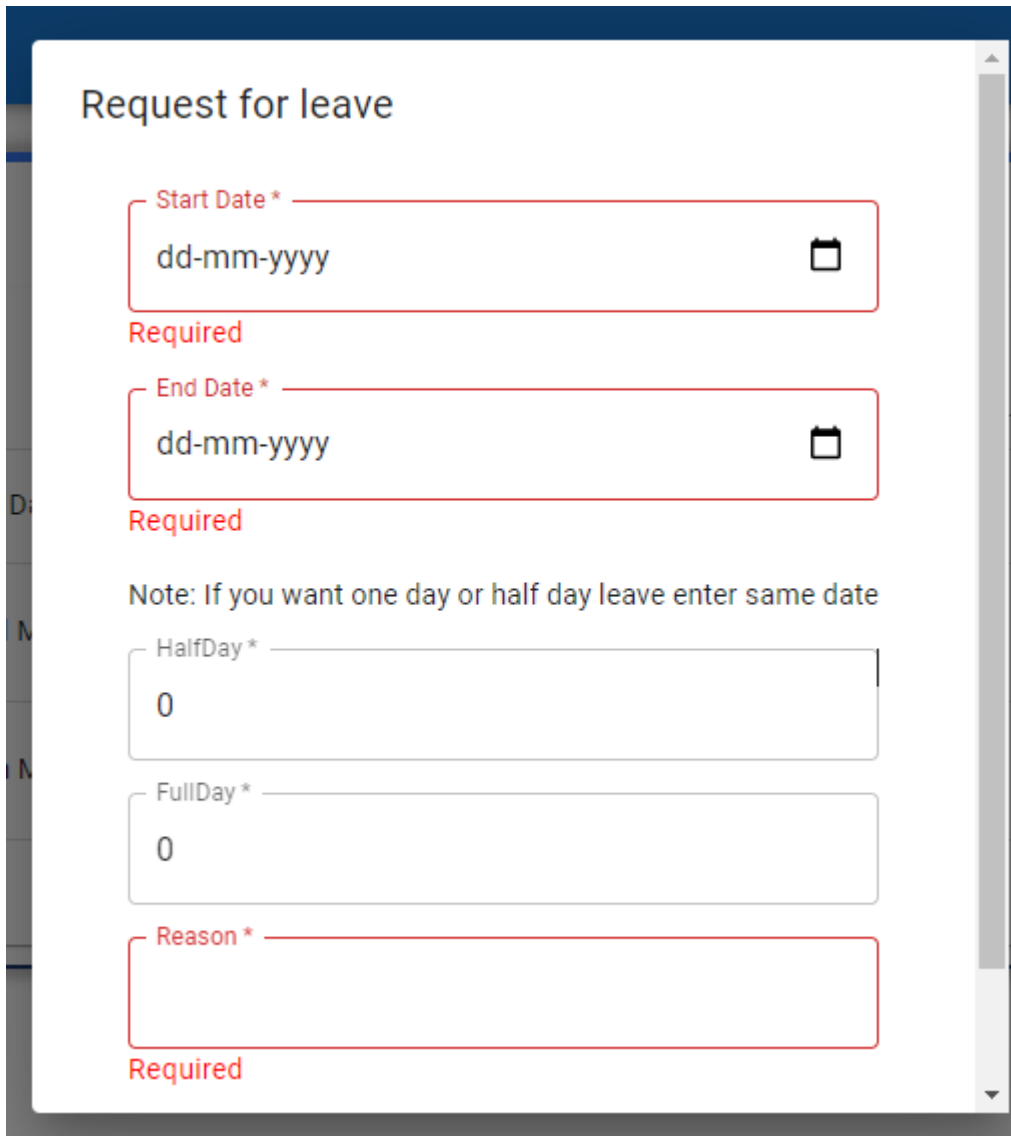
Event Type

Required

Link

4.1.10 add event error view

Request for leave



The screenshot shows a web form titled "Request for leave". It contains several input fields with red error messages indicating they are required:

- Start Date ***: A date input field with the placeholder "dd-mm-yyyy" and a calendar icon. Below it is a red "Required" message.
- End Date ***: A date input field with the placeholder "dd-mm-yyyy" and a calendar icon. Below it is a red "Required" message.
- Note**: A text label stating "Note: If you want one day or half day leave enter same date".
- HalfDay ***: A numeric input field with the value "0".
- FullDay ***: A numeric input field with the value "0".
- Reason ***: A text input field. Below it is a red "Required" message.

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.

[code and some project guide](#)

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/>