# **Employee Management System** [Report]



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#### **ABSTRACT**

Employees are the backbone of any company therefore their management plays a major role in deciding the success of the organization. We have prepared the web app for a company named **Cloudways** to manage the employees, department, attendance, projects, meetings scheduled etc. from one platform alone.

Our software will be accessed only by the employees or the admin of the software. All the forms in our application have validation so we do not get inconsistent data in our database and avoid anomalies.

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#### INTRODUCTION

#### 1.1 OVERVIEW

The employee management system is designed to make it easier for both admin and employee to handle all the operations at one place on one click of a button. The goal is to provide ease to employees in managing their schedule, attendance, training and other things more conveniently so they can concentrate more on their work.

#### 1.2 PROBLEM STATEMENT

Many offices already have employee management systems but they are more intended to be helpful for administration but not the employees working in the office. They have to separately make their schedules for meetings etc. but with our software, they have one platform to handle all these at one place which makes them to not worry about other things but only on their job.

#### 1.3 DATABASE MANAGEMENT SYSTEM

A database management system (DBMS) is system software for creating and managing databases. The DBMS provides users and programmers with a systematic way to create, retrieve, update and manage data. The DBMS essentially serves as an interface between the database and end users application programs, ensuring that data is consistently organized and remains easily accessible.

The DBMS manages three important things: the data, the database engine that allows data to be accessed, locked and modified, and the database schema, which defines the database's logical structure. These three foundational elements help to provide concurrency, security, data integrity and uniform administration procedures. Typical

database administration tasks supported by the DBMS include change management, performance monitoring/tuning and backup and recovery.

#### **1.4 SQL**

SQL is a standard language for storing, manipulating and retrieving data in databases. Originally based upon relational algebra and tuple relational calculus, SQL consists of a data definition language, data manipulation language, and data control language.

The scope of SQL includes data insert, query, update and delete, schema creation and modification, and data access control.

#### **1.5 HTML**

HTML is a markup language used for structuring and presenting content on the web and the fifth and current major version of the HTML standard. HTML5 includes detailed processing models to encourage more interoperable implementations; it extends, improves and rationalizes the markup available for documents, and introduces markup and application programming interfaces (APIs) for complex web applications.

### **Chapter 2**

#### REQUIREMENTS SPECIFICATION

A computerized way of handling information about property and users details is efficient, organized and time saving, compared to a manual way of doing so. This is done through a database driven web application whose requirements are mentioned in this section.

#### 2.1 OVERALL DESCRIPTION

A reliable and scalable database driven web application with security features that is easy to use and maintain is the requisite.

#### 2.2 SPECIFIC REQUIREMENTS

The specific requirements of the Employee Management System are stated as follows:

#### 2.2.1 SOFTWARE REQUIREMENTS

- DE Visual Studio code
- Web Browser Firefox 50 or later, Google Chrome 60 or later
- Database support MySQL (php myadmin)
- Operating system Windows 10

#### 2.2.2 HARDWARE REQUIREMENTS

- Processor Pentium IV or above
- RAM 2 GB or more
- Hard disk 3 GB or more
- Monitor VGA of 1024x768 screen resolution
- Keyboard and Mouse

#### 2.2.3 TECHNOLOGY

• **HTML** is used for the front end design. It provides a means to structure text based information in a document. It allows users to produce web pages that include text, graphics and hyperlinks.

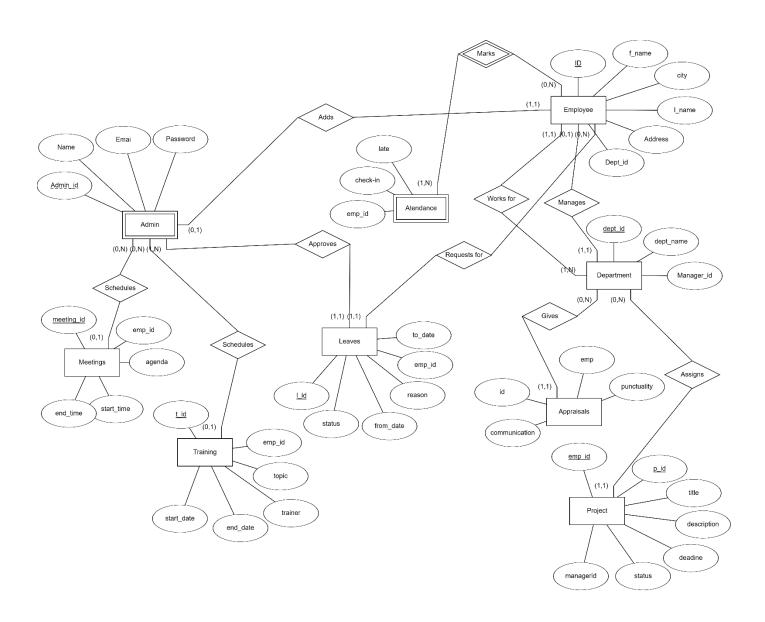
- CSS (Cascading Style Sheets) is a style sheet language used for describing the presentation of a document written in a markup language. Although most often used to set the visual style of web pages and user interfaces written in HTML and XHTML, the language can be applied to any XML document.
- **Bootstrap:** Bootstrap is the most popular CSS Framework for developing responsive and mobile-first websites.
- SQL is the language used to manipulate relational databases. It is tied closely with the relational model. It is issued for the purpose of data definition and data manipulation.
   Laravel: Laravel is a web application framework with expressive, elegant syntax. Laravel aims to make the development process a pleasing one for the developer without sacrificing application functionality. It is based on the Model-View-Controller (MVC) architectural design pattern.

#### 3.2 ENTITY RELATIONSHIP DIAGRAM

An entity–relationship model is usually the result of systematic analysis to define and describe what is important to processes in an area of a business.

An E-R model does not define the business processes; it only presents a business data schema in graphical form. It is usually drawn in a graphical form as boxes (entities) that are connected by lines (relationships) which express the associations and dependencies between entities.

Entities may be characterized not only by relationships, but also by additional properties (attributes), which include identifiers called "primary keys". Diagrams created to represent attributes as well as entities and relationships may be called entity-attribute-relationship diagrams, rather than entity-relationship models.

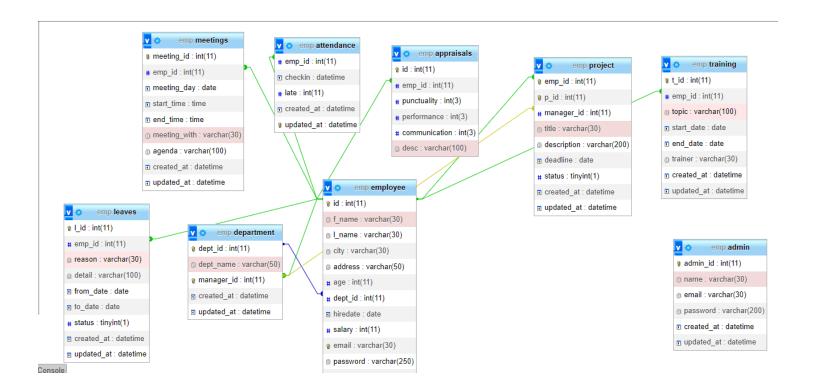


#### 3.3 RELATIONAL SCHEMA

The term "schema" refers to the organization of data as a blueprint of how the database is constructed. The formal definition of a database schema is a set of formulas called integrity constraints imposed on a database. A relational schema shows references among fields in the database. When a primary key is referenced in another table in the

database. When a primary key is referenced in another table in the database, it is called a foreign key. This is denoted by an arrow with the head pointing at the referenced key attribute.

A schema diagram helps organize values in the database. The following diagram shows the schema diagram for the database.



#### 3.4 DESCRIPTION OF TABLES

The database consists of 9 tables:

- 1. Employee It stores the employee details.
  - id: Unique user id done by auto increment.
  - f name
  - I\_name
  - Email
  - Password
  - Address
  - City
  - Age
  - Dept\_id
  - salary
- 2. Admin: It stores the details of the Admin.
  - Admin\_id: Unique admin id done by auto increment.
  - Name
  - Email
  - Password
- 3. Appraisals: Stores the reviews given by manager to its employees
  - Id
  - Emp\_id
  - Punctuality
  - Communication
  - Desc
  - Performance

4.	Attendance: It stores attendance of employees on daily basis
	• Emp_id
	Checkin
	• Late

- 5. Department:departments in the office
  - Dept\_id
  - Dept\_name
  - Manager\_id
- 6. Leaves: Details of leaves applied by empoyees and approved by admin
  - L\_id
  - Emp\_id
  - Reason
  - Details
  - From\_date
  - To\_date
  - status
- 7. Meetings: meetings scheduled by admin
  - Meeting\_id
  - Emp\_id
  - Meetingday
  - Starttime
  - Endtime
  - Meetingwith
  - agenda

- 8. Projects: Projects assigned by manager
  - Em id
  - P\_id (composite primary key with emp\_id)
  - Manager\_id
  - Title
  - Description
  - Deadline
  - Status
- 9. Training: trainings scheduled by admin
  - T id
  - Emp\_id
  - Topic
  - Start\_date
  - End date
  - Trainer

10.Deleted\_employees: With trigger, the deleted employee is stored in this table

### **IMPLEMENTATION**

#### 4.1 MODULES AND THEIR ROLES

4.1.1 Login: Login for the employee.

```
$res = Employee::where(['email' => $req->email])->first();
if ($res) {

if (hash::check($req->password, $res->password)) {
```

```
$req->session()->put('Emp_Login', True);
                     $req->session()->put('Emp Id', $res->id);
                     $req->session()->put('Emp_Name', $res->f_name);
                     $check man=Employee::join('department','department.manager i
d','=','employee.id')
                     ->where('department.manager id',$res->id)->first();
                     if($check_man){
                        $req->session()->put('Manager', True);
                        $req->session()->put('DeptId', $check_man->dept_id);
                      return redirect()->route('emp home');
                 else {
                     return redirect('/emp login')->with('myerror','Invalid login
details');
                 }
             else{
                return redirect('/emp login')->with('myerror','Invalid login
details');
```

### 4.2 Update Employee details

### 4.2 Update Password

### 4.3 Add new employee (by admin)

```
$validate = $req->validate([
     'f_name' => 'required|max:30',
      'l_name' => 'required|max:30',
      'city' => 'required|max:30',
     'age'=>'required|numeric|min:18',
      'email'=>'required|max:30|unique:employee',
      'password' => 'required | max:20',
      'dept_id'=> 'required|numeric',
      'hiredate'=>'required',
      'salary'=>'required|numeric|min:0'
       $depart= Department::where('dept id',$req->dept id)->first();
      $emp=new Employee;
      $emp->f name=$req->f name;
      $emp->1 name=$req->1 name;
      $emp->city=$req->city;
      $emp->age=$req->age;
      $emp->email=$req->email;
      $emp->dept id=$req->dept id;
      $emp->hiredate=$req->hiredate;
      $emp->salary=$req->salary;
      $pass=Hash::make($req->password);
      $emp->password=$pass;
      $emp->save();
```

### 4.4 Add new department (by admin)

```
$validate = $req->validate([
    'dept_name' => 'required|max:30|unique:department|regex:/^[a-zA-Z ]+$/',
    'manager_id'=>'unique:department',
    ]);

$new=new Department;
$new->dept_name=$req->dept_name;
$new->manager_id=$req->manager_id;
```

#### 4.5 Delete department

```
public function delete_dept($id){
   $dept=Department::where('dept_id',$id)->delete();
   return redirect('/admin_home')->with('pass2','Department deleted');
}
```

### 4.6 Approve Leaves (by admin)

```
public function approve_leaves(){

    $emps=EmpLoyee::join('leaves','leaves.emp_id','employee.id')-
>where('leaves.status',0)->orderby('leaves.from_date')->get();
return view('admin_approve_leaves',['emps'=>$emps]);
}
public function approve_leave($1_id){
    $user = DB::table('leaves')->where('l_id',$1_id)->limit(1)-
>update(['status'=>1] );
    return redirect('/admin_home')->with('pass2','Leave Approved');
}
```

#### 4.7 Filter salaries of employee by department (by admin)

```
public function filter_sal_dept(Request $req){
    $validate = $req->validate([
        'dept_id' => 'required',
        ]);
    $emps=EmpLoyee::join('department','department.dept_id','employee.dept_id')
    ->where('employee.dept_id',$req->dept_id)->get();
    return view('admin_filter_sal',['emps'=>$emps]);
```

#### 4.8 Filter number of employees in each department (by admin)

```
public function filter emp by dept(Request $req){
    $validate = $req->validate([
      'dept id' => 'required|numeric',
      1);
      $check=Department::where('dept_id',$req->dept_id)->first();
      if(!$check){
        return redirect()->back()->with('myerror','Pease enter correct Department
ID');
      $emps=DB::table('employee')
      ->select('employee.dept id', 'department.dept name', DB::raw('count(*) as
total'))->join('department','department.dept_id','employee.dept_id')
      ->groupBy(['employee.dept_id','department.dept_name'])-
>having('employee.dept_id',$req->dept_id)->first();
      if(!$emps){
        return redirect()->back()->with('myerror','No Employees are currently in
this Department');
      return view('filter_emp_by_dept',['emps'=>$emps]);
```

### 4.9 Apply for Leave(by employee)

```
$leave->save();
    return redirect('/emp_home')->with('pass2','Applied for leave
successfully');
}
```

### 4.10 Give appraisal (by employee)

### 4.11 Delete appraisal(by admin)

```
public function delete_review($id){
    DB::table('appraisals')->where('ID',$id)->delete();
    return redirect('/admin_home')->with('pass2','Review Removed');
}
```

## 4.12 Schedule Meetings (by admin)

```
public function meet schedule form(Request $req){
        $validate = $req->validate([
            'emp_id' => 'required',
             'meeting day' => 'required',
             'start_time' => 'required',
            'end time'=>'required',
             'meeting_with'=>'required|max:30',
             'agenda' => 'required | max:100',
            1);
            $meeting=new Meeting;
            $meeting->emp id=$req->emp id;
            $meeting->meeting_day=$req->meeting_day;
            $meeting->start_time=$req->start_time;
            $meeting->end_time=$req->end_time;
            if($meeting->end_time<$meeting->start_time){
                return redirect('/admin_home')->with('myerror','Could not
scheduled Meeting');
            $meeting->meeting_with=$req->meeting_with;
            $meeting->agenda=$req->agenda;
            $meeting->save();
            return redirect('/admin_home')->with('pass2','Meeting Sceduled');
```

### 4.13 Check meetings scheduled

```
public function meetings_scheduled(){
    //only show meetins sceduled in future and not the nes already done
    $emps=Meeting::join('employee','employee.id','meetings.emp_id')
    ->where('meetings.meeting_day','>=',date('Y-m-d'))-
>orderby('meetings.meeting_day')->get();
    return view('meetings_scheduled',['emps'=>$emps]);
}
```

## 4.14 Assign Project

```
public function assign_logic(Request $req){
        $validate = $req->validate([
            'emp_id' => 'required',
          'p id' => 'required',
          'title'=>'required|regex:/^[a-zA-Z ]+$/|max:30',
           'description'=>'required|max:200',
           'deadline'=>'required',
             ]);
        try{
            $pro=new Project;
            $pro->emp id=$req->emp id;
            $pro->p_id=$req->p_id;
            $pro->manager_id=session('Emp_Id');
            $pro->title=$req->title;
            $pro->description=$req->description;
            $pro->deadline=$req->deadline;
            $pro->status=0;
            $pro->save();
        }catch(\Illuminate\Database\QueryException $e){
            if(\$e-\ge code() == "23000"){ //23000 is sql code for integrity}
constraint violation
                return redirect('/emp_home')->with('myerror', 'Couldnt Assigned
Project.Please try again');
```

### 4.15 Check Pending Projects

### 4.16 Submit Project

### 4.17 Schedule training

```
public function train schedule form(Request $req){
    $validate = $req->validate([
                'emp id' => 'required',
                 'topic' => 'required|max:100',
                 'start_date' => 'required',
                'end date'=>'required',
                 'trainer'=>'required|max:30',
                ]);
                $training=new Training;
                $training->emp_id=$req->emp_id;
                $training->topic=$req->topic;
                $training->start_date=$req->start_date;
                $training->end_date=$req->end_date;
                if($training->end_date<$training->start_date){
                    return redirect('/admin_home')->with('myerror','Could not
scheduled Training');
                $training->trainer=$req->trainer;
                $training->save();
                return redirect('/admin_home')->with('pass2','Training
Sceduled');
```

#### 4.18 Mark Attendance

```
public function mark_attendance(Request $req, $id){
   $flag=0;
   $time= date("Y-m-d H:i:s");
   $att=new Attendance;
```

```
$att->emp id=$id;
           $att->checkin=$time;
           $marked = new DateTime($att->checkin);
         $checkin time = $marked->format('H:i:s');
         if($checkin_time>'09:00:00'){
           $att->late=1;
           $flag=1;
         }
         else{
           $att->late=0;
           $att->save();
           if($flag==1){
               return redirect('emp home')->with('marked','Atendance maked. you
are late today');;
           }
          else{
               return redirect('emp_home')->with('marked','Atendance maked.');;
```

#### 4.19 Filter Attendance

```
public function admin filter attendance( Request $req){
    $validate = $req->validate([
        'from' => 'required',
         'to' => 'required',
         'emp_id' => 'required|max:30|min:2',
        1);
        $emp fname=EmpLoyee::where('f name','like','%'.$req->emp id.'%')->get();
         if($emp fname->count()==0){
            return redirect()->back()->with('myerror','No Employee found');
        if($req->to < $req->from){
            return redirect()->back()->with('myerror','please enter correct range
of dates');
        }
      $emps=Attendance::join('employee','employee.id','attendance.emp_id')->
      where('employee.f name','like','%'.$req->emp id.'%')-
>wherebetween('attendance.checkin',[$req->from.' 00:00":00',$req->to.'
23:59:59'])->paginate(20);
      return view('admin filter attendance',['emps'=>$emps]);
```

### 4.20 Check if attendance is already marked for today

```
public function attendance($id){
    $status=Attendance::where('emp_id','=',$id)->get();
  if($status){
              foreach($status as $sta){
           $marked = new DateTime($sta->checkin);
          $date = $marked->format('Y-m-d');
            if($date==date('Y-m-d')){
              return redirect('/emp_home')->with('myerror','you have already
checked in today');
              $emp=Employee::find($id);
              return view('emp_attendance',['emp'=>$emp]);
        else{
       $emp=Employee::find($id);
       return view('emp_attendance',['emp'=>$emp]);
   }
   }
```

#### RESULT

### The resulting system is able to:

Authenticate employee/Admin credentials during login.

Allows admin to add, update, delete new employee

Allows admin to add new department

Allows admin to schedule training and meetings

Allows admin to check attendance specific employees from a given range of dates

Allows employee to update password or personal details

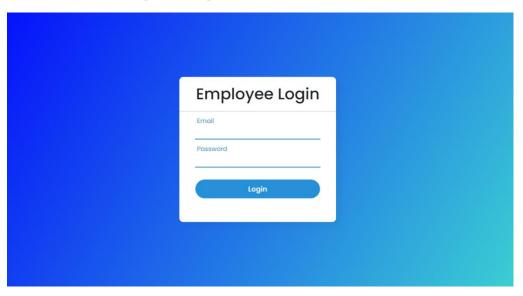
Allows to employee to check-in once daily

Allows manager to assign project

Allows employees to see ow many times they have been late.

## **SNAPSHOTS**

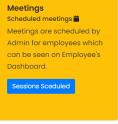
## **Employee Login page**



## **Employee Dashboard**

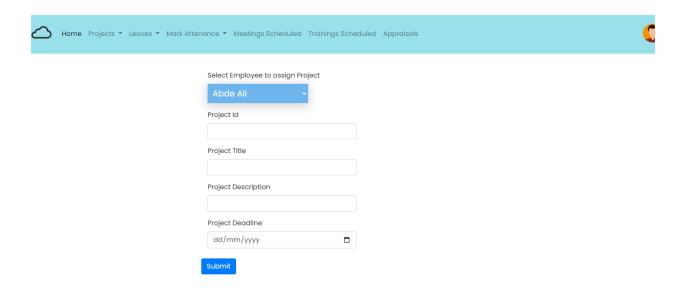








## **Assign Project**



### **Mark Attendance**



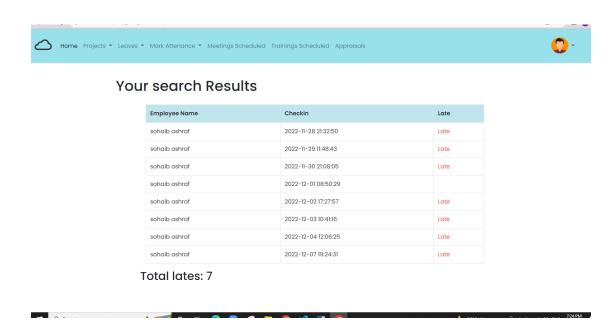
#### Mark your attenance Employee: 24

Checking in 2022-12-07 19:23:49

Checkin



#### **Check/filter Attendance**



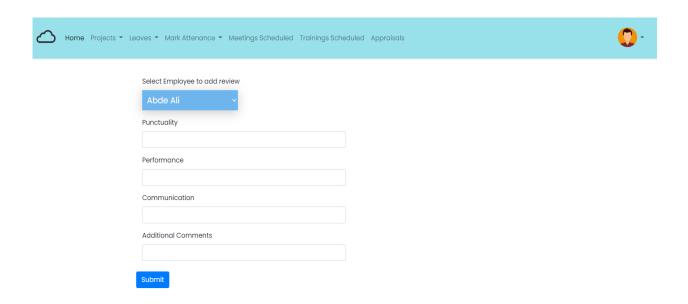
#### **Check leave Status**



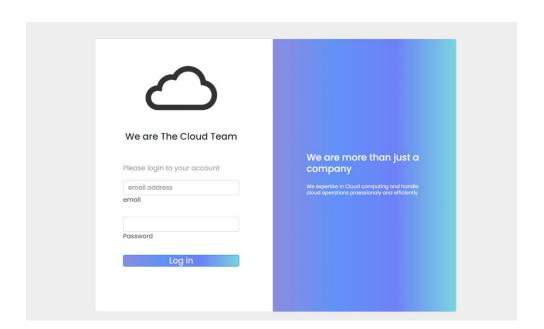
### My leave Requests



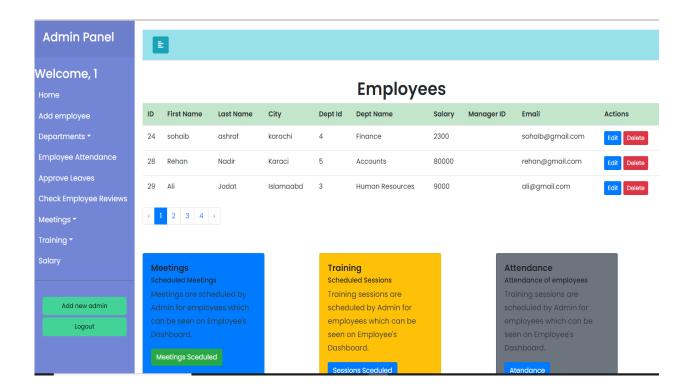
## **Give Appraisal**



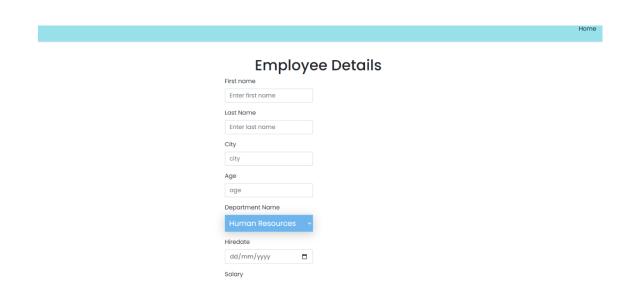
## **Admin Login**



#### **Admin Dashboard**



## Add new employee



## **Approve Leaves**



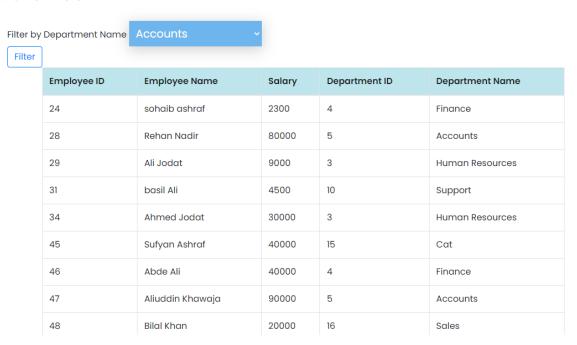
## Filter Attendance by employee name

**Attendance** 

#### From: dd/mm/yyyy 🗖 To: dd/mm/yyyy 🗂 Search Search Employee First Name Atleast 2 characters Employee ID Employee Name 24 sohaib ashraf 2022-12-07 19:24:31 Late 24 sohaib ashraf 2022-12-04 12:06:25 24 sohaib ashraf 2022-12-03 10:41:16 24 sohaib ashraf 2022-12-02 17:27:57 Late 29 Ali Jodat 2022-12-02 16:50:46 Late 2022-12-02 12:26:42 34 Ahmed Jodat Late 2022-12-02 12:16:59 28 Rehan Nadir Late 47 Aliuddin Khawaja 2022-12-01 14:42:58 Late 31 basil Ali 2022-12-01 08:52:10

### Filter salary of employees by department name

#### Salaries



#### **FUTURE ENHANCEMENTS**

### Future upgrades to this project will implement:

- Give notification/warning to user once he got late 3 times in a month
- Add more triggers like deleted\_emps trigger to our database

#### References

https://laravel.com/docs/9.x/queries

Ramakrishnan, R., & Gehrke, J. (2011). Database management systems by Boston: McGraw-Hill.

https://github.com/KhawajaAbdullah2000/emp