Assignment-1

Employee management system

Problem Statement:

Develop a Single Page Web Application using Angular with backend as NodeJS and DB like MySQL DB or Mongo DB and perform CRUD operations

1. Create an employee record

2. Read all employee records

3. Update an employee record

4. Delete an employee record

Solution:

Description:

The **Employee Management System** is a full-stack web application built using Angular and Node.js. It provides functionalities for managing employees within an organization. The application supports **Admin** and **Employee** roles.

- **Admin** users can view all employees, add new ones, edit any employee's details, and delete employees.
- **Employee** users can only **view and edit their own profiles**.

It includes authentication, role-based access, CRUD operations, and MongoDB integration.

Tech Stack:

Layer	Technology
Frontend	Angular 19, Bootstrap 5
Backend	Node.js, Express.js
Database	MongoDB
Authentication	Basic login via email/password
API Communication	HTTPClient (Angular)
Dev Tools	VS Code, MongoDB Compass

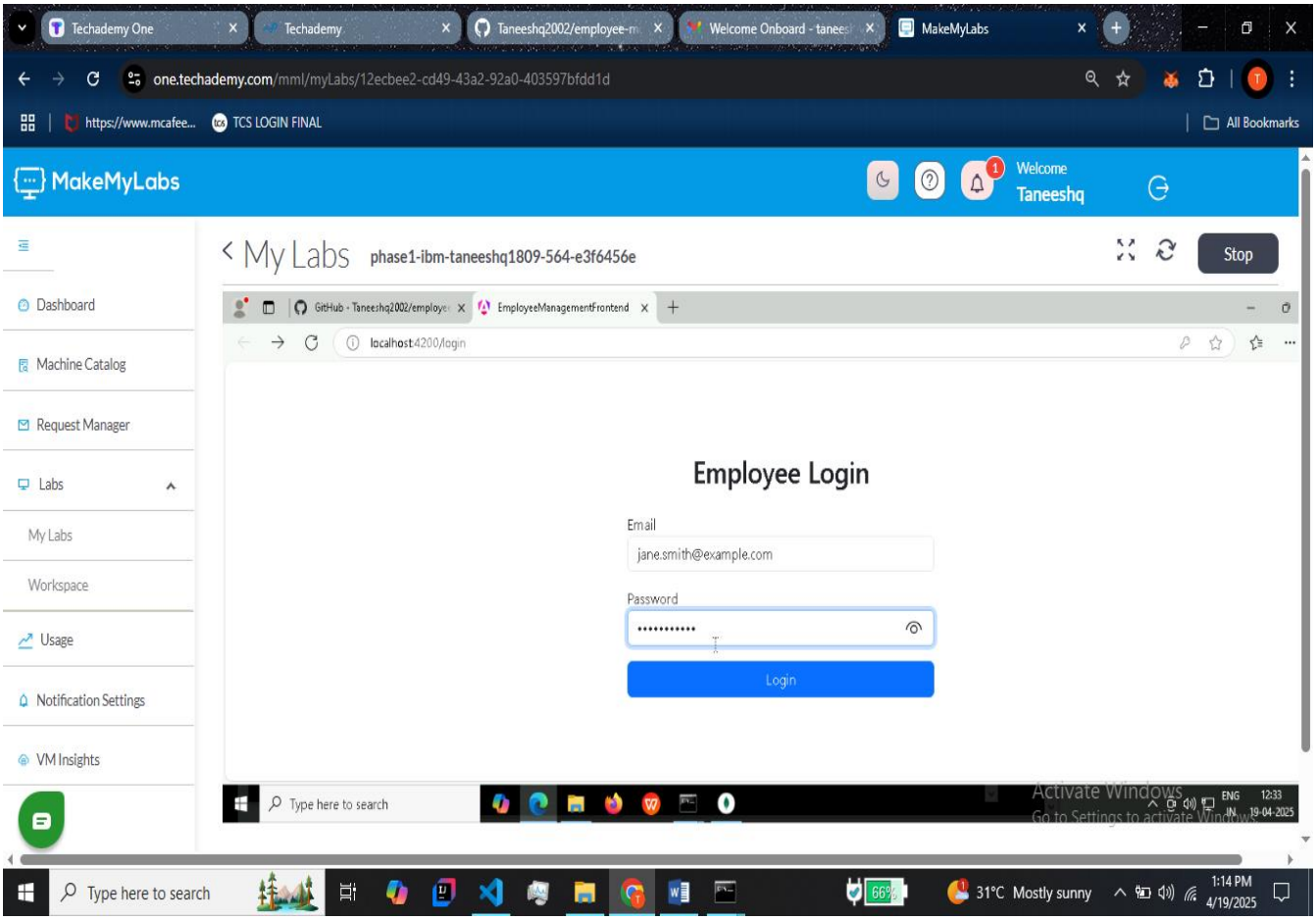
Directory Structure:

```
employee-management/
├── employee-management-backend/
│   ├── controllers/
│   │   └── employeeController.js       # Handles CRUD operations and login
│   ├── models/
│   │   └── employeeModel.js            # Mongoose schema for Employee
│   ├── routes/
│   │   └── employeeRoutes.js           # Defines API routes
│   ├── server.js                       # Express app entry point
│   └── .env                            # DB URI, port config (optional)
│
├── employee-management-frontend/
│   ├── src/
│   │   ├── app/
│   │   │   ├── components/
│   │   │   │   ├── navbar/
│   │   │   │   │   └── navbar.component.ts/html/css
│   │   │   │   ├── employee-list/
│   │   │   │   │   └── employee-list.component.ts/html/css
│   │   │   │   ├── employee-form/
│   │   │   │   │   └── employee-form.component.ts/html/css
│   │   │   │   ├── nonemployee-list/
```

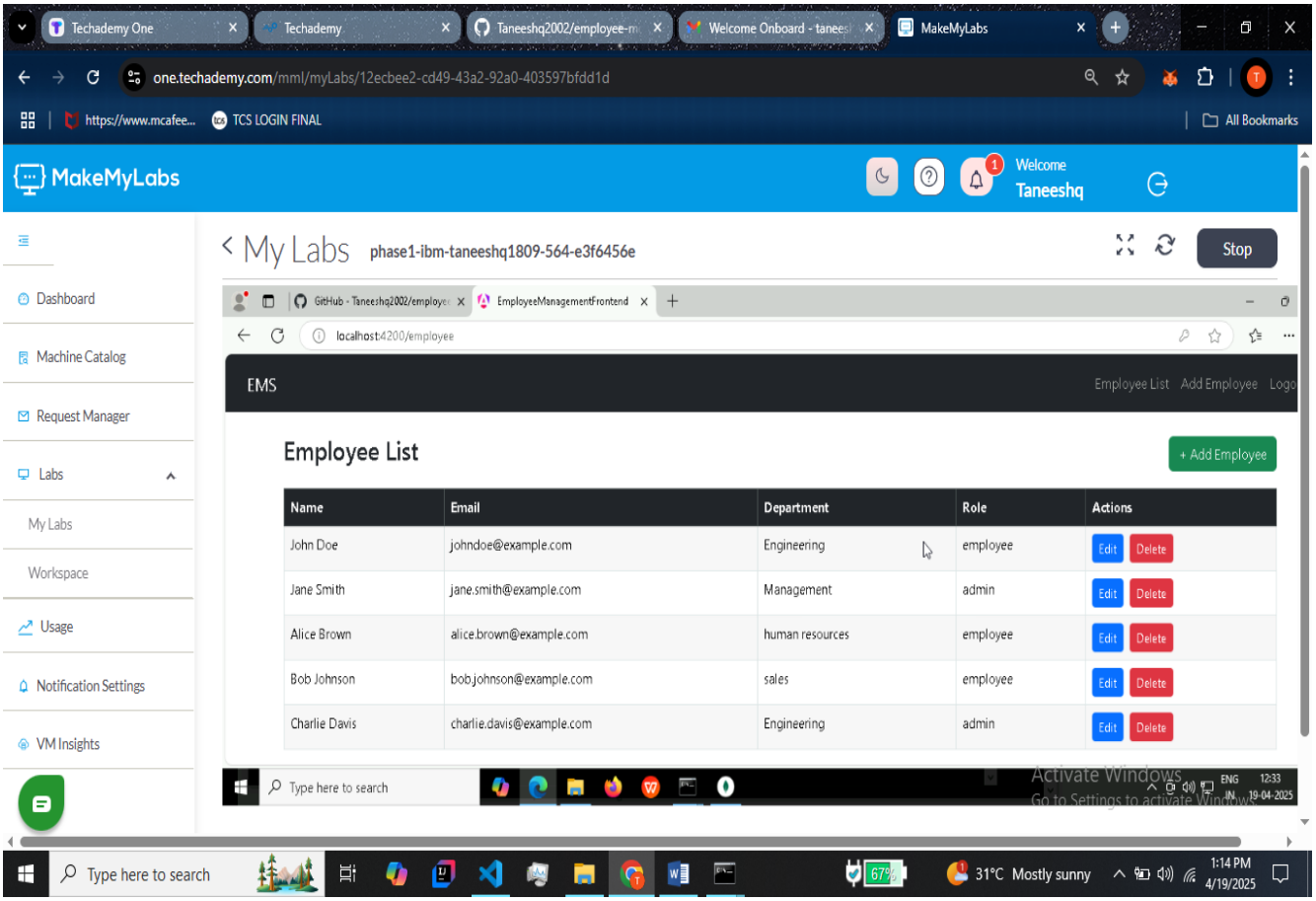
```
│   │   │   │   │   └── nonemployee-list.component.ts/html/css       #List of employees for non-admins
│   │   │   │   ├── profile/
│   │   │   │   │   └── employee-profile.component.ts/html/css     #Profile of employee
│   │   │   │   ├── login/
│   │   │   │   │   └── login.component.ts/html/css
│   │   │   ├── services/
│   │   │   │   └── employee.service.ts       # HTTP calls to backend
│   │   │   ├── app.component.ts
│   │   │   ├── app.module.ts
│   │   │   └── app.routes.ts
│   │   └── main.ts
│   └── angular.json
│
├── package.json
├── README.md
└── node_modules/
```

Output:

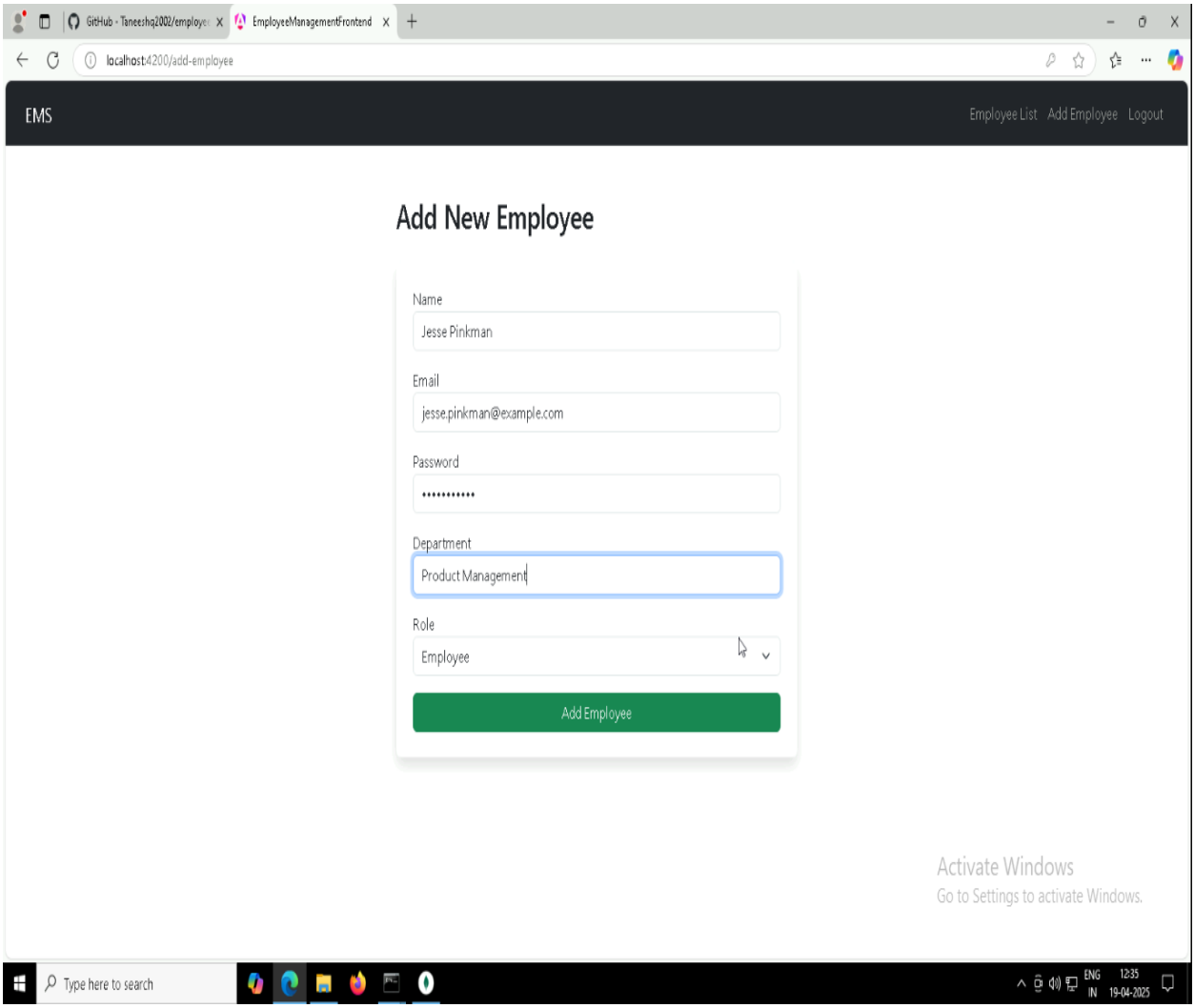
1)Admin login:



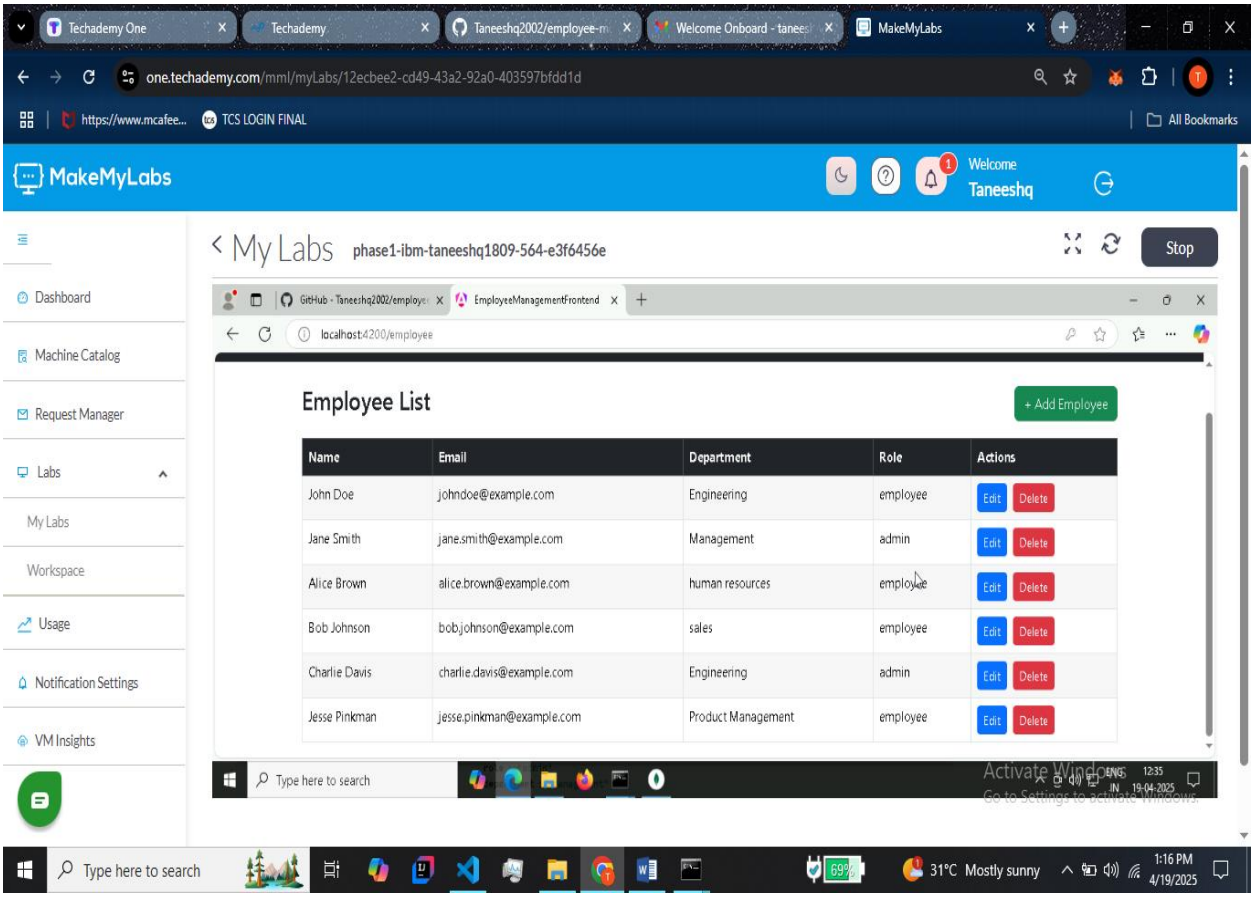
2) List of employees for admin POV



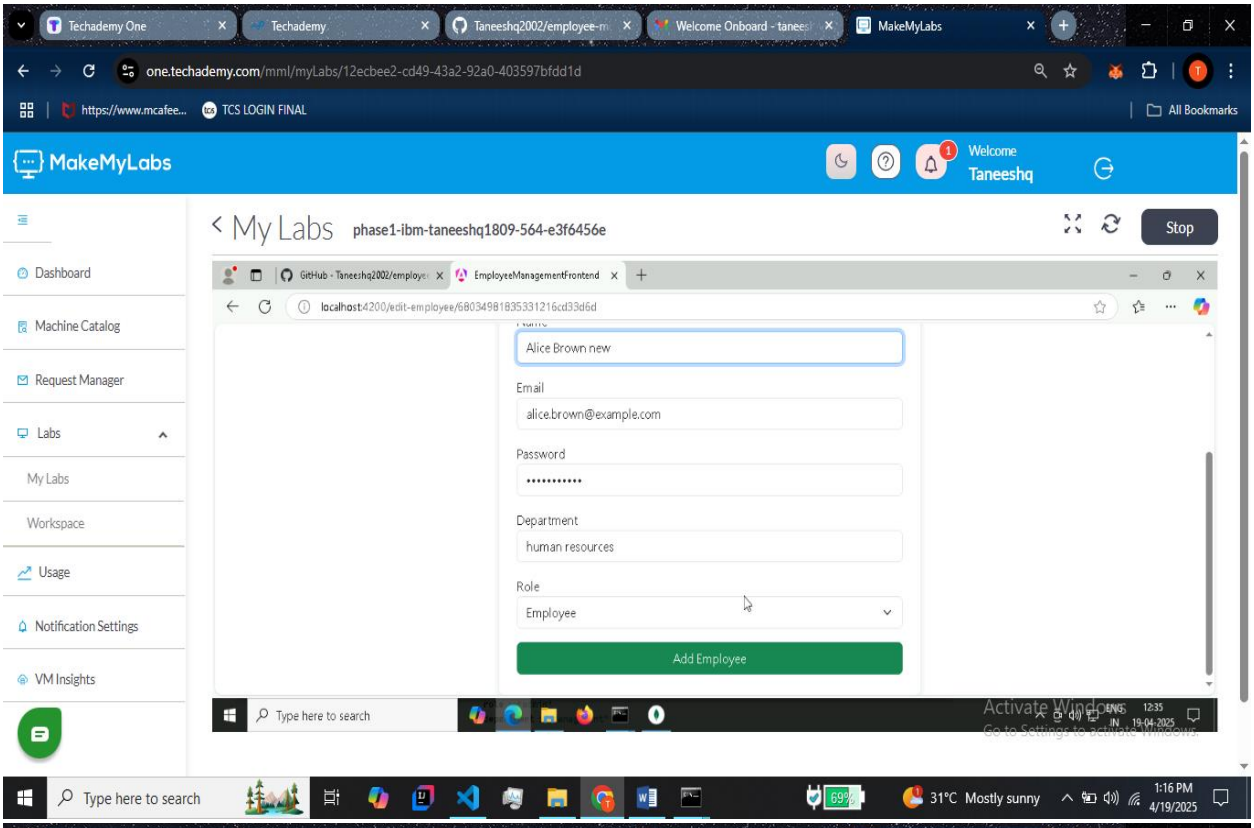
3)Adding new employee:

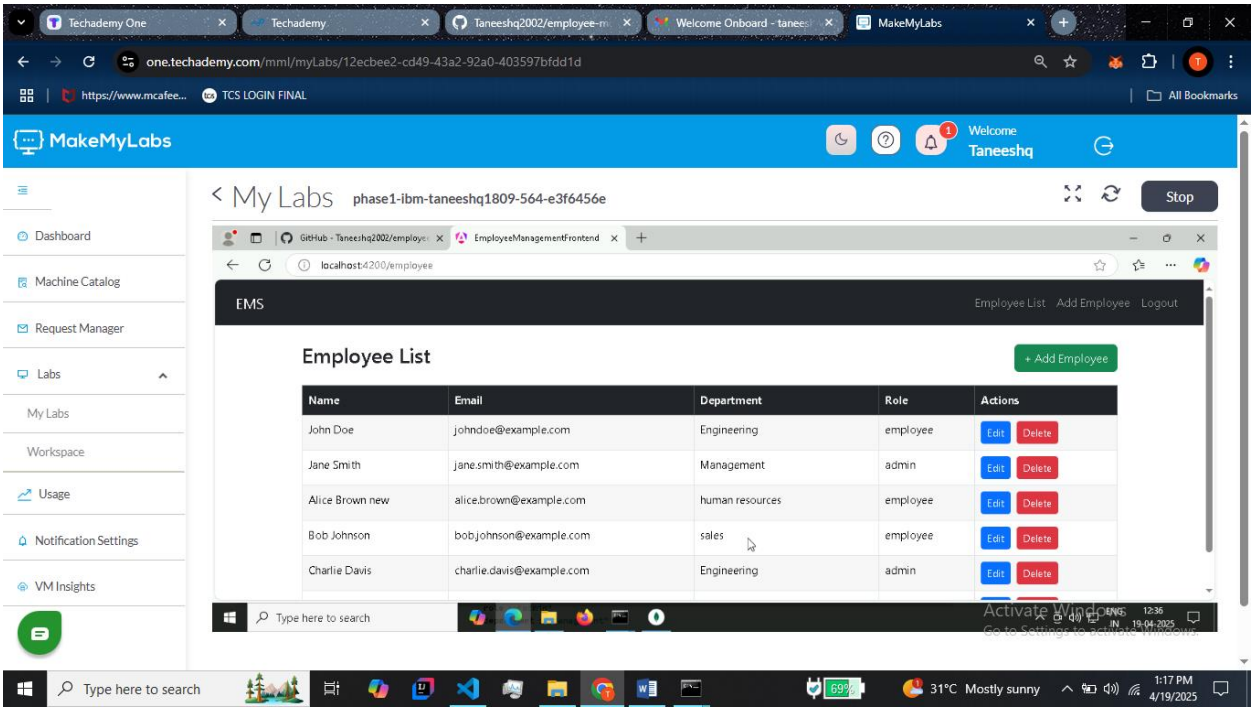


4) Updated list

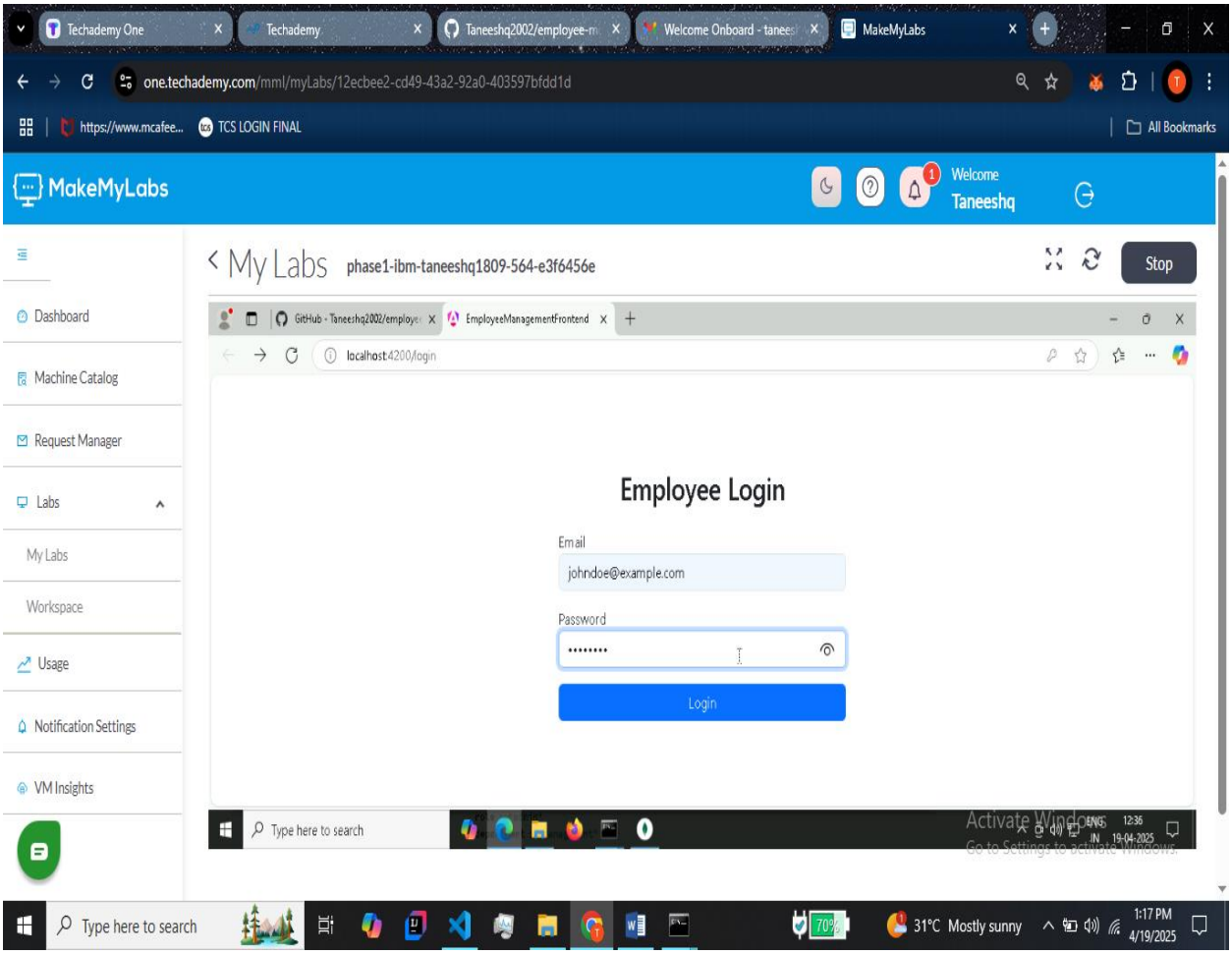


5) Editing employee details(/edit-employee)

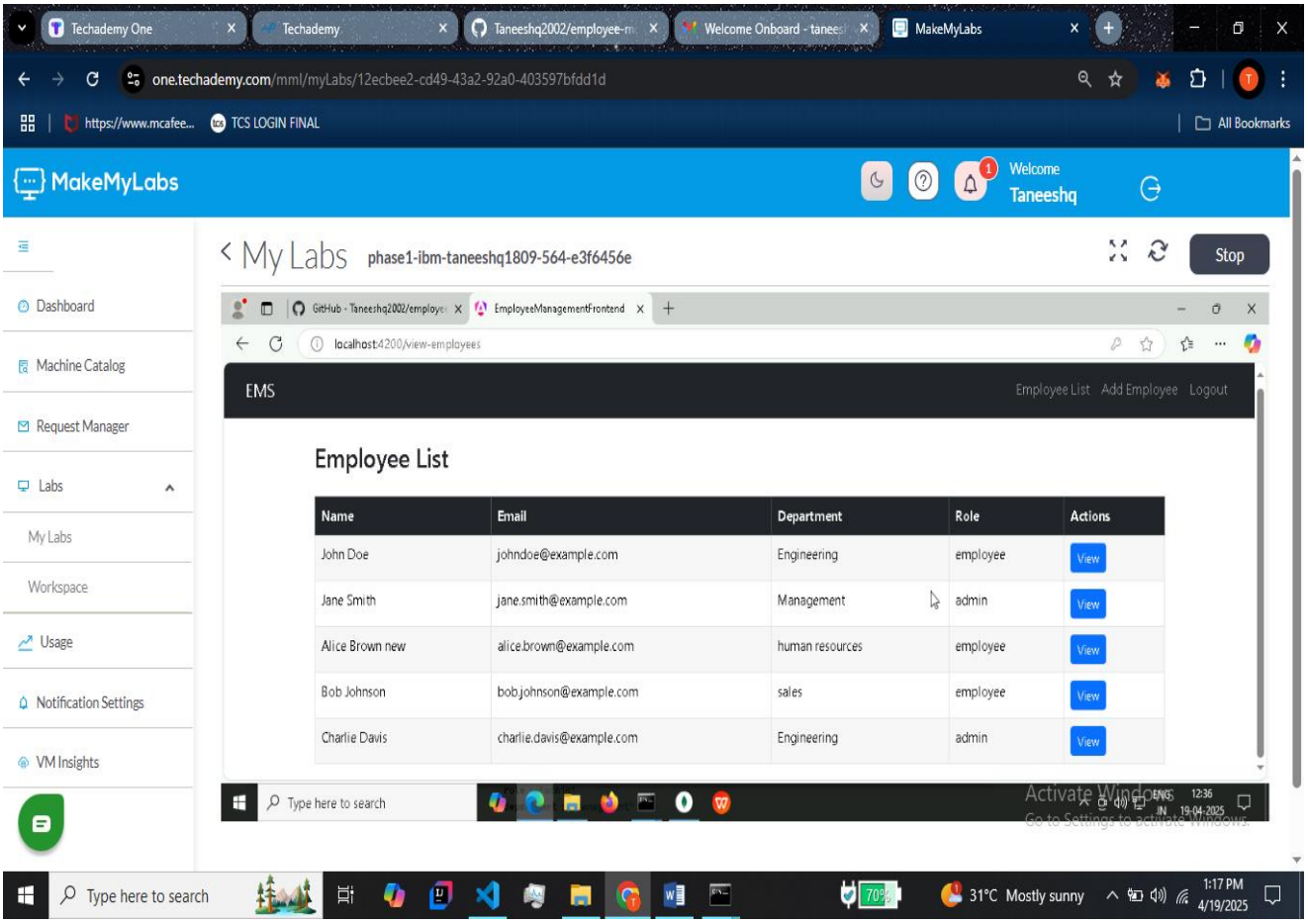




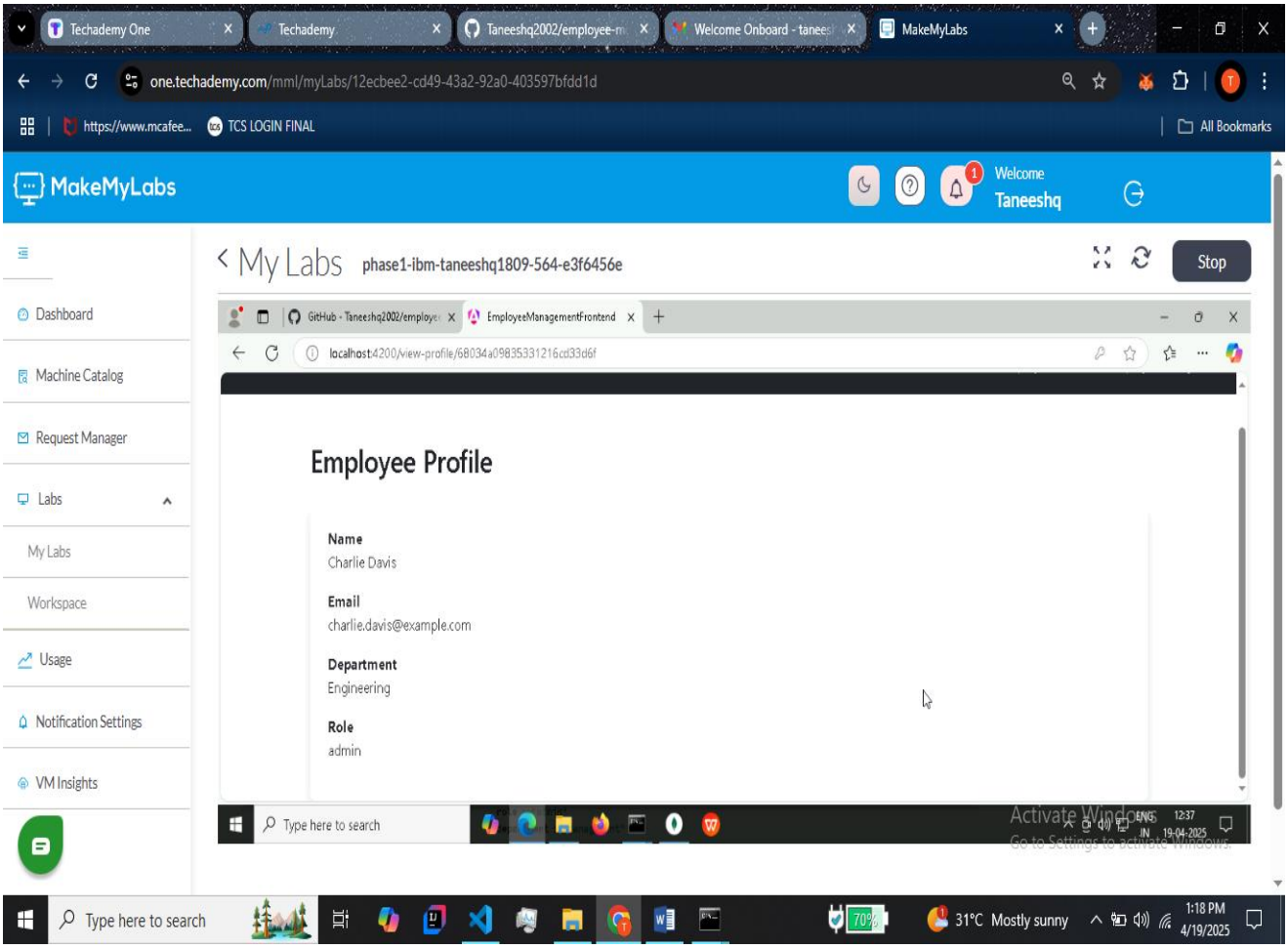
6)Login for non-admin employees:



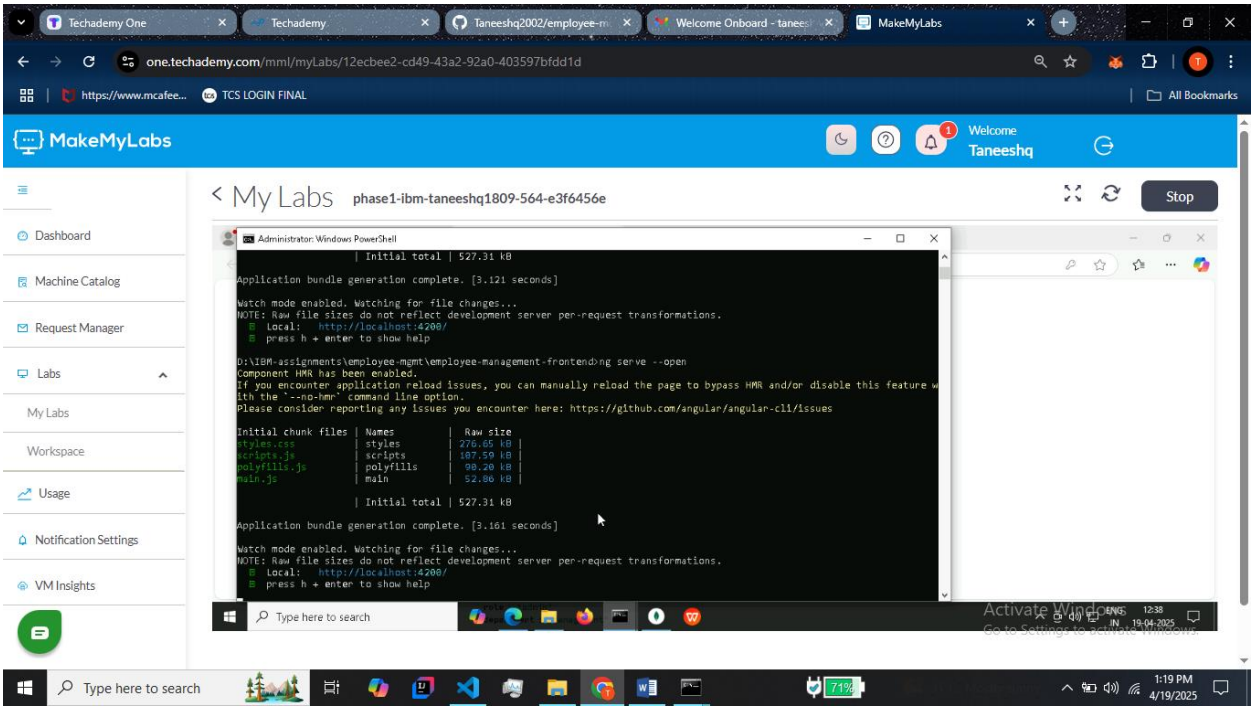
7) List of employees for non-admin POV



8) Profile view of employees:



9) Backend: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phase1-ibm-taneeshq1809-564-e3f6456e
Stop
Dashboard
Machine Catalog
Request Manager
Labs
My Labs
Workspace
Usage
Notification Settings
VM Insights
Administrator: Windows PowerShell
Initial total | 527.31 kB
Application bundle generation complete. [3.121 seconds]
Watch mode enabled. Watching for file changes...
NOTE: Raw file sizes do not reflect development server per-request transformations.
Local: http://localhost:4200/
press h + enter to show help
D:\IBM-assignments\employee-mgmt\employee-management-frontend>ng serve --open
Component HMR has been enabled.
If you encounter application reload issues, you can manually reload the page to bypass HMR and/or disable this feature with the `--no-hmr` command line option.
Please consider reporting any issues you encounter here: https://github.com/angular/angular-cli/issues
Initial chunk files | Names | Raw size
styles.css | styles | 276.65 kB
scripts.js | scripts | 107.59 kB
polyfills.js | polyfills | 98.20 kB
main.js | main | 52.86 kB
Initial total | 527.31 kB
Application bundle generation complete. [3.161 seconds]
Watch mode enabled. Watching for file changes...
NOTE: Raw file sizes do not reflect development server per-request transformations.
Local: http://localhost:4200/
press h + enter to show help
Type here to search
Activate Windows
Go to Settings to activate Windows.
Type here to search
1:19 PM
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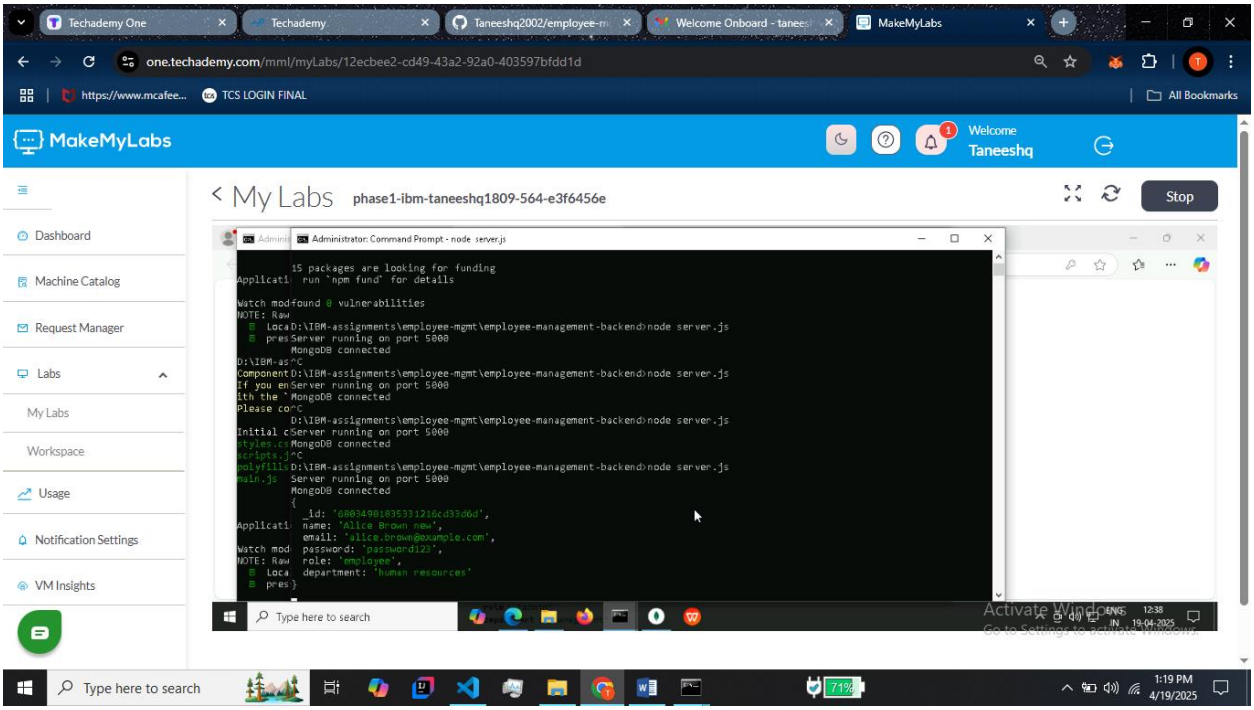
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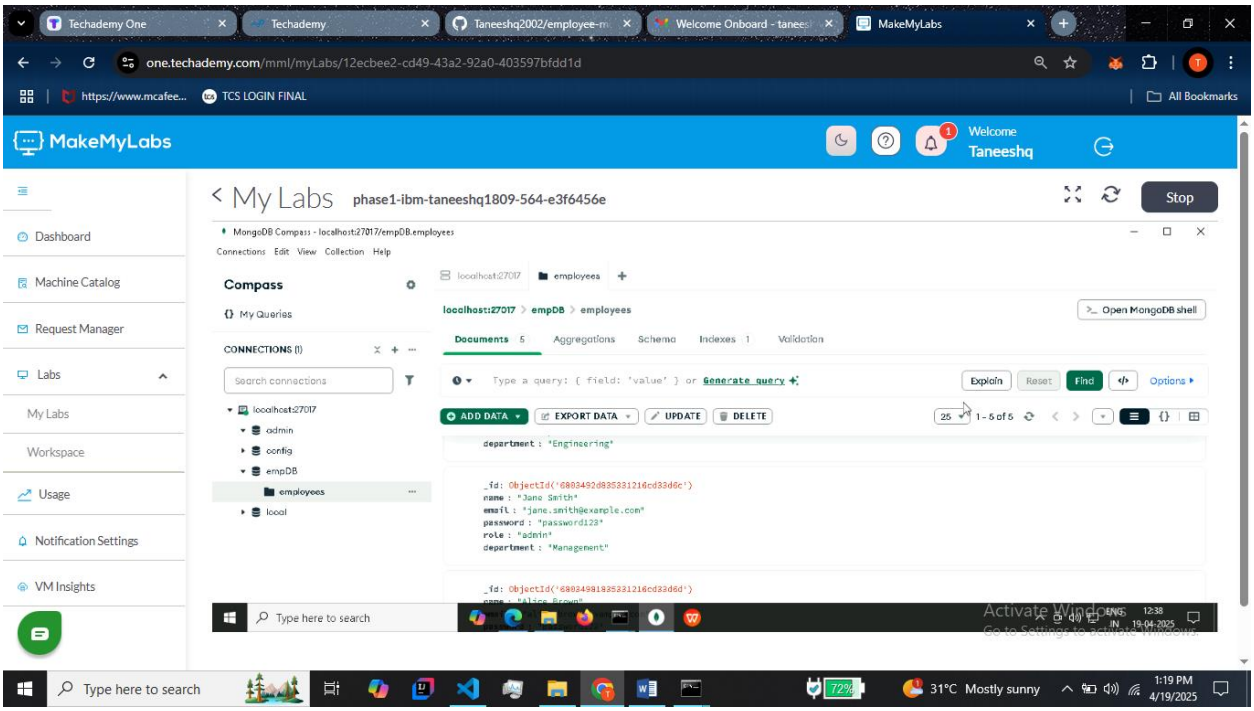
phase1-ibm-taneeshq1809-564-e3f6456e
Stop
Dashboard
Machine Catalog
Request Manager
Labs
My Labs
Workspace
Usage
Notification Settings
VM Insights
Administrator: Command Prompt - node server.js
15 packages are looking for funding
run `npm fund` for details
found 0 vulnerabilities
D:\IBM-assignments\employee-mgmt\employee-management-backend>node server.js
Server running on port 5000
MongoDB connected
D:\IBM-assignments\employee-mgmt\employee-management-backend>node server.js
Server running on port 5000
MongoDB connected
D:\IBM-assignments\employee-mgmt\employee-management-backend>node server.js
Server running on port 5000
MongoDB connected
{
_id: '680349818353311216cd33d6d',
name: 'Alice Brown new',
email: 'alice.brown@example.com',
password: 'password123',
role: 'employee',
department: 'human resources'
}
Type here to search
Activate Windows
Go to Settings to activate Windows.
Type here to search
1:19 PM
4/19/2025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Stop
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My Labs
Workspace
Usage
Notification Settings
VM Insights
MongoDB Compass - localhost:27017/empDB.employees
Connections Edit View Collection Help
Compass
My Queries
CONNECTIONS (1)
Search connections
localhost:27017
admin
config
empDB
employees
local
localhost:27017 > empDB > employees
Open MongoDB shell
Documents 5
Aggregations
Schema
Indexes 1
Validation
Type a query: { field: 'value' } or Generate query
Explain
Reset
Find
Options
ADD DATA
EXPORT DATA
UPDATE
DELETE
1 - 5 of 5
department : "Engineering"
_id: ObjectId('6803492d835831216cd33d6c')
name : "Jane Smith"
email : "jane.smith@example.com"
password : "password123"
role : "admin"
department : "Management"
Type here to search
Activate Windows
Go to Settings to activate Windows.
Type here to search
72%
31°C Mostly sunny
1:19 PM
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