

# 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

|

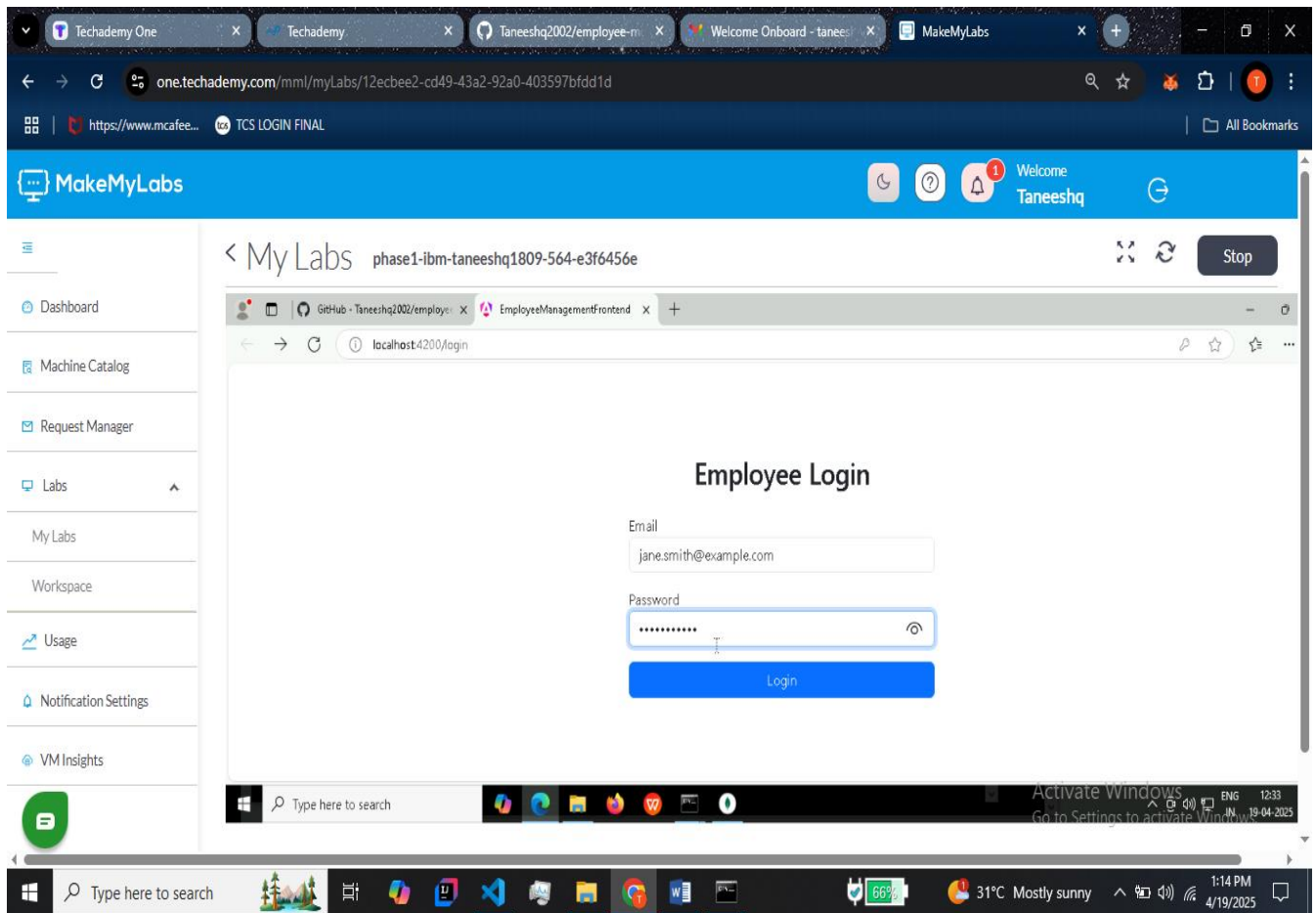
└─ package.json

└─ README.md

└─ node\_modules/

# Output:

## 1)Admin login:



## 2) List of employees for admin POV

one.techademy.com/mml/myLabs/12ecbee2-cd49-43a2-92a0-403597bfdd1d

MakeMyLabs

Welcome Taneeshq

< My Labs phase1-ibm-taneeshq1809-564-e3f6456e

Stop

Employee List Add Employee Log

+ Add Employee

Name	Email	Department	Role	Actions
John Doe	johndoe@example.com	Engineering	employee	Edit Delete
Jane Smith	jane.smith@example.com	Management	admin	Edit Delete
Alice Brown	alice.brown@example.com	human resources	employee	Edit Delete
Bob Johnson	bob.johnson@example.com	sales	employee	Edit Delete
Charlie Davis	charlie.davis@example.com	Engineering	admin	Edit Delete

Type here to search

Activate Windows Go to Settings to activate Windows

1:14 PM 4/19/2025

### 3) Adding new employee:

The screenshot shows a web browser window with the address bar displaying `localhost:4200/add-employee`. The browser tabs include "GitHub - Taneshq1002/employee" and "EmployeeManagementFrontend". The application header is dark grey with the text "EMS" on the left and "Employee List Add Employee Logout" on the right. The main content area has a heading "Add New Employee" and a form with the following fields:

- Name:
- Email:
- Password:
- Department:
- Role:  (dropdown menu)

Below the form is a green button labeled "Add Employee". In the bottom right corner of the page, there is a watermark that says "Activate Windows Go to Settings to activate Windows." The Windows taskbar is visible at the bottom of the screen.

#### 4) Updated list

The screenshot displays a web application interface for 'MakeMyLabs'. The browser's address bar shows the URL `one.techademy.com/mml/myLabs/12ecbee2-cd49-43a2-92a0-403597bfdd1d`. The application's header includes the 'MakeMyLabs' logo and a user profile for 'Taneeshq'. A sidebar on the left contains navigation links: Dashboard, Machine Catalog, Request Manager, Labs, My Labs, Workspace, Usage, Notification Settings, and VM Insights. The main content area, titled 'My Labs', shows a specific lab instance 'phase1-ibm-taneeshq1809-564-e3f6456e'. Within this lab, there is an 'Employee List' table. The table has columns for Name, Email, Department, Role, and Actions. It lists six employees: John Doe, Jane Smith, Alice Brown, Bob Johnson, Charlie Davis, and Jesse Pinkman. Each employee row includes 'Edit' and 'Delete' buttons. A '+ Add Employee' button is located at the top right of the table. The bottom of the image shows a Windows taskbar with various application icons and system information like the date (4/19/2025) and time (1:16 PM).

Name	Email	Department	Role	Actions
John Doe	john.doe@example.com	Engineering	employee	<a href="#">Edit</a> <a href="#">Delete</a>
Jane Smith	jane.smith@example.com	Management	admin	<a href="#">Edit</a> <a href="#">Delete</a>
Alice Brown	alice.brown@example.com	human resources	employee	<a href="#">Edit</a> <a href="#">Delete</a>
Bob Johnson	bob.johnson@example.com	sales	employee	<a href="#">Edit</a> <a href="#">Delete</a>
Charlie Davis	charlie.davis@example.com	Engineering	admin	<a href="#">Edit</a> <a href="#">Delete</a>
Jesse Pinkman	jesse.pinkman@example.com	Product Management	employee	<a href="#">Edit</a> <a href="#">Delete</a>

## 5) Editing employee details(/edit-employee)

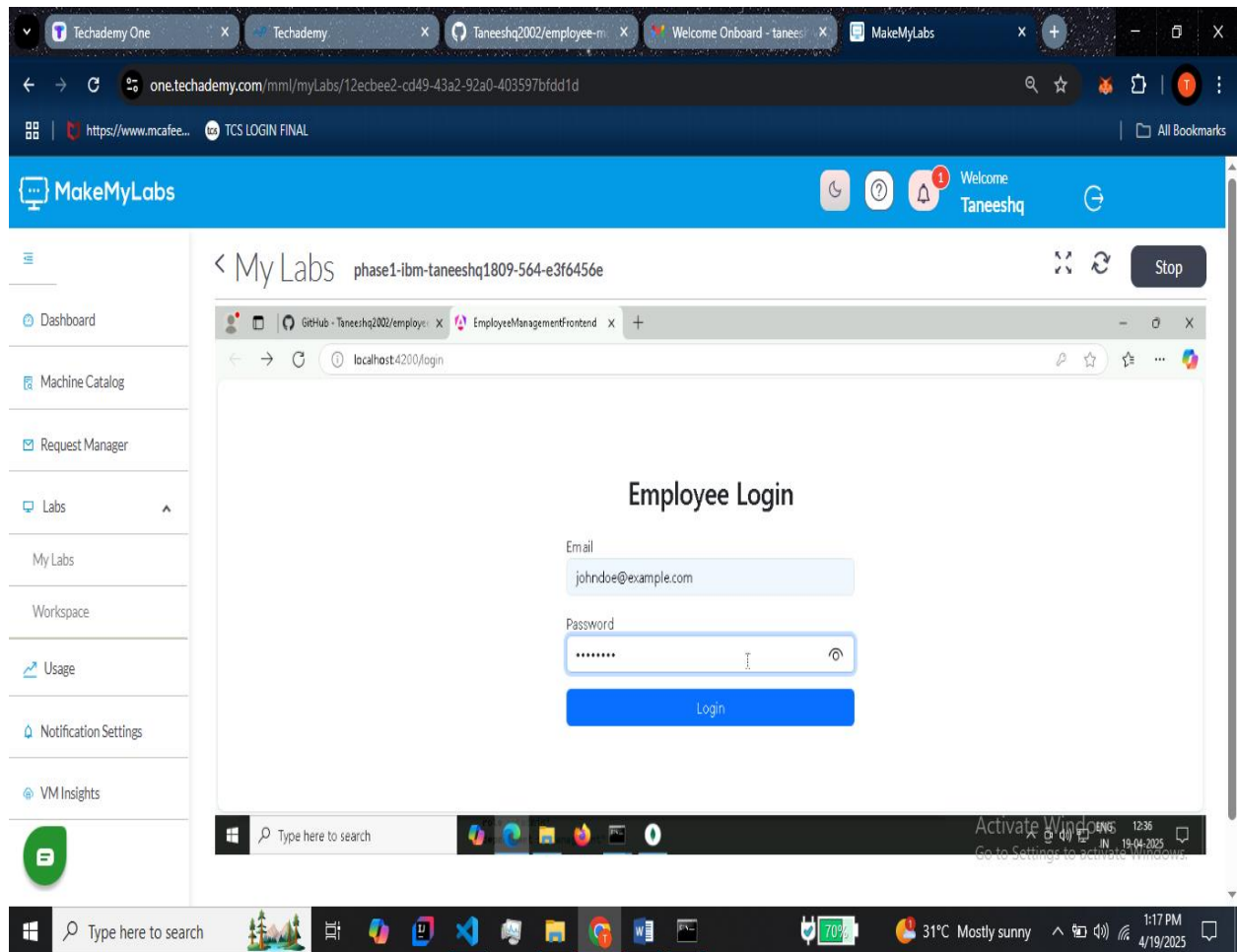
The screenshot displays the MakeMyLabs web application interface. The top navigation bar includes the MakeMyLabs logo, a user profile icon, and a 'Welcome Taneeshq' message. The left sidebar contains a menu with options: Dashboard, Machine Catalog, Request Manager, Labs, My Labs, Workspace, Usage, Notification Settings, and VM Insights. The main content area is titled 'My Labs phase1-ibm-taneeshq1809-564-e3f6456e' and features a 'Stop' button. Below this, a form for adding a new employee is visible, with fields for Name, Email, Password, Department, and Role. A green 'Add Employee' button is at the bottom of the form. The bottom of the screenshot shows a Windows taskbar with various application icons and a system tray displaying the date and time.

**Employee List**

Name	Email	Department	Role	Actions
John Doe	john.doe@example.com	Engineering	employee	<a href="#">Edit</a> <a href="#">Delete</a>
Jane Smith	jane.smith@example.com	Management	admin	<a href="#">Edit</a> <a href="#">Delete</a>
Alice Brown new	alice.brown@example.com	human resources	employee	<a href="#">Edit</a> <a href="#">Delete</a>
Bob Johnson	bob.johnson@example.com	sales	employee	<a href="#">Edit</a> <a href="#">Delete</a>
Charlie Davis	charlie.davis@example.com	Engineering	admin	<a href="#">Edit</a> <a href="#">Delete</a>



## 6) Login for non-admin employees:



## 7) List of employees for non-admin POV

The screenshot displays a web application interface for 'MakeMyLabs'. The browser's address bar shows the URL `one.techademy.com/mml/myLabs/12ecbee2-cd49-43a2-92a0-403597bfdd1d`. The application's header includes the 'MakeMyLabs' logo and a 'Welcome Taneeshq' message. A sidebar on the left contains navigation links: Dashboard, Machine Catalog, Request Manager, Labs, My Labs, Workspace, Usage, Notification Settings, and VM Insights. The main content area is titled 'My Labs phase1-ibm-taneeshq1809-564-e3f6456e' and features a 'Stop' button. Below this, a sub-header 'EMS' is visible, along with links for 'Employee List', 'Add Employee', and 'Logout'. The 'Employee List' section contains a table with the following data:

Name	Email	Department	Role	Actions
John Doe	johndoe@example.com	Engineering	employee	<a href="#">View</a>
Jane Smith	jane.smith@example.com	Management	admin	<a href="#">View</a>
Alice Brown new	alice.brown@example.com	human resources	employee	<a href="#">View</a>
Bob Johnson	bob.johnson@example.com	sales	employee	<a href="#">View</a>
Charlie Davis	charlie.davis@example.com	Engineering	admin	<a href="#">View</a>

The bottom of the image shows a Windows taskbar with the search bar, taskbar icons, and system tray information including the date and time (1:17 PM, 4/19/2025).

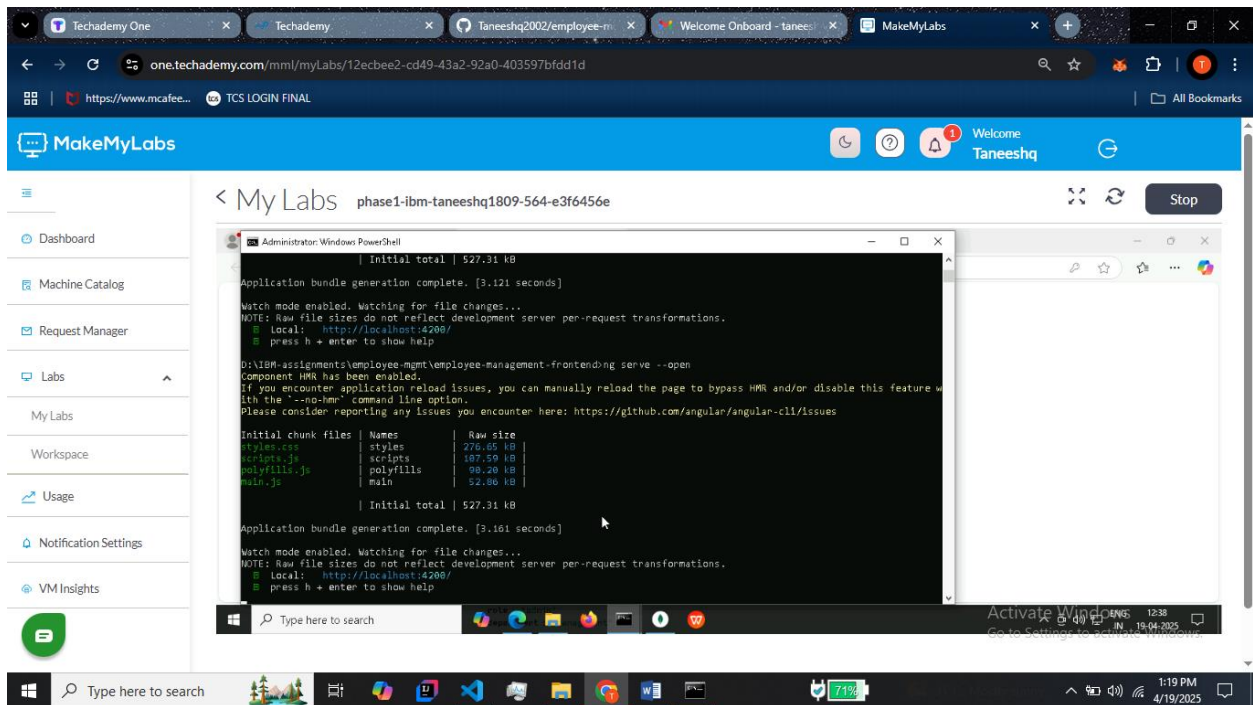
## 8) Profile view of employees:

The screenshot displays a web browser window with multiple tabs, including 'Techademy One', 'Techademy', 'Taneeshq2002/employee-m', 'Welcome Onboard - taneeshq', and 'MakeMyLabs'. The active tab shows the URL `one.techademy.com/mml/myLabs/12ecbee2-cd49-43a2-92a0-403597bfdd1d`. The browser's address bar also shows `https://www.mcafee...` and 'TCS LOGIN FINAL'. The MakeMyLabs interface features a blue header with the logo and a 'Welcome Taneeshq' message. A left sidebar contains navigation links: Dashboard, Machine Catalog, Request Manager, Labs (expanded), My Labs, Workspace, Usage, Notification Settings, and VM Insights. The main content area is titled 'My Labs phase1-ibm-taneeshq1809-564-e3f6456e' and displays an 'Employee Profile' card. The card lists the following details:

- Name:** Charlie Davis
- Email:** charlie.davis@example.com
- Department:** Engineering
- Role:** admin

The profile is viewed within a window titled 'EmployeeManagementFrontend' at `localhost:4200/view-profile/68034a09835331216cd33d6f`. The Windows taskbar at the bottom shows the search bar, taskbar icons, system tray with a 70% battery indicator, and a weather forecast of 31°C Mostly sunny. The system clock indicates 1:18 PM on 4/19/2025.

## 9) Backend:



MakeMyLabs

phase1-ibm-taneeshq1809-564-e3f6456e

```
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 build --prod --configuration=production --output-path=dist

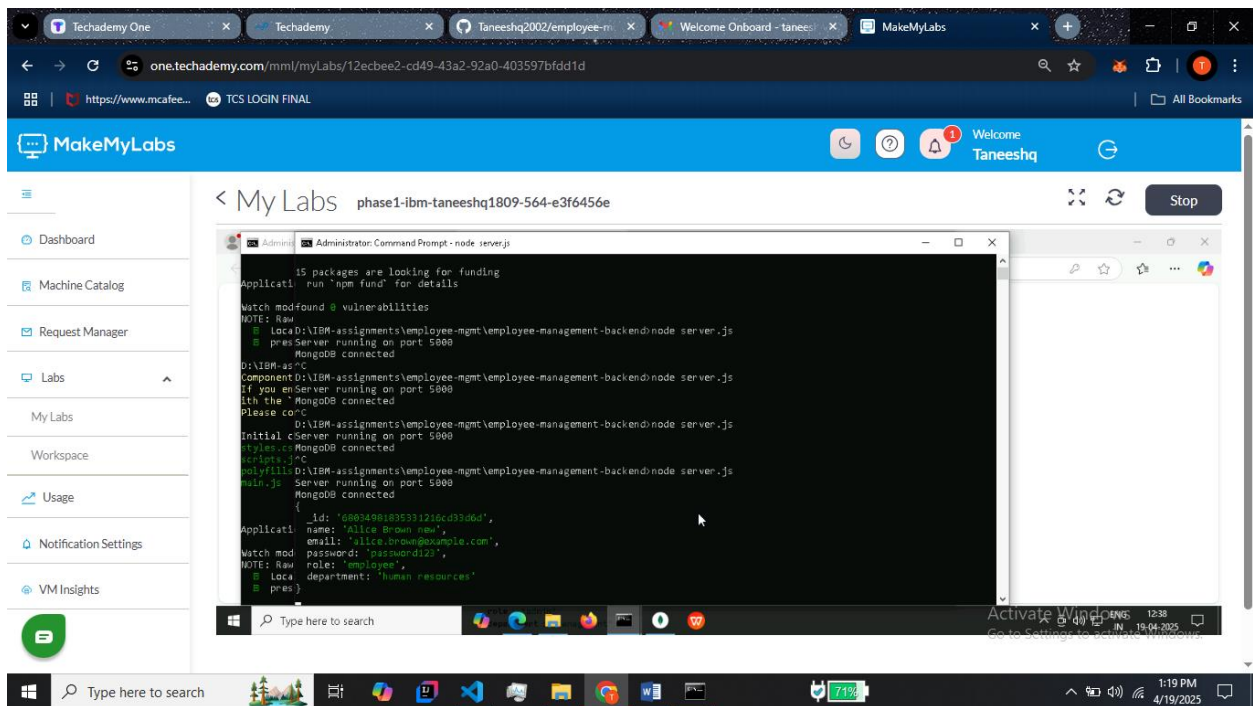
Component IBM-assignments\employee-mgmt\employee-management-frontend serve --open
If you encounter reload issues, you can manually reload the page to bypass HMR and/or disable this feature with the "--no-hmr" command line option.
Please consider reporting any issues you encounter here: https://github.com/angular/angular-cli/issues

Initial chunk files | Names | Raw size
styles.css | styles | 276.65 kB
scripts.js | scripts | 187.59 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
```



MakeMyLabs

phase1-ibm-taneeshq1809-564-e3f6456e

```
Administrator: Command Prompt - node server.js

15 packages are looking for funding
  Apply with `npm fund` for details

Watch mode found 0 vulnerabilities
NOTE: Raw
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> curl http://localhost:5000/api/users
{"id": "6089498103531216cd33d6d", "name": "Alice Brown new", "email": "alice.brown@example.com", "password": "password123", "role": "employee", "department": "human resources"}

NOTE: Raw
D:\IBM-assignments\employee-mgmt\employee-management-backend> node server.js
Server running on port 5000
MongoDB connected
```

MakeMyLabs

My Labs phase1-ibm-taneeshq1809-564-e3f6456e

MongoDB Compass - localhost27017/empDB/employees

Connections Edit View Collection Help

Compass

My Queries

localhost27017 > empDB > employees

Documents 5 Aggregations Schema Indexes 1 Validation

Search connections

Connections (1)

localhost27017

admin

config

empDB

employees

local

Type a query: { field: 'value' } or [Generate query](#)

Explain Reset Find Options

ADD DATA EXPORT DATA UPDATE DELETE

25 1-5 of 5

```
{
  "_id": ObjectId("6803492d93531216cd33d6e"),
  "name": "Jane Smith",
  "email": "jane.smith@example.com",
  "password": "password123",
  "role": "admin",
  "department": "Management"
}
```

Windows taskbar: Type here to search, 31°C Mostly sunny, 1:19 PM 4/19/2025

