Tech Hub - Connecting Students with Industry Professionals

Project Overview

Tech Hub is a comprehensive online platform designed to bridge the gap between academic education and industry requirements. The platform connects students with industry professionals, offering mentorship programs, job listings, workshops, and project collaboration opportunities.

Key Features

- User Authentication
- Job Listings
- Mentorship Programs
- Workshops
- Project Collaborations
- User Profiles

Technical Stack

Frontend

- HTML5
- CSS3
- JavaScript (Vanilla JS)

Backend

- Node.js
- Express.js
- MySQL

Authentication

- JSON Web Tokens (JWT)
- Bcrypt for password hashing

Project Structure

```
project-root/
|
├── frontend/
|   ├── index.html
|   ├── login.html
|   ├── signup.html
|   ├── job-listings.html
|   ├── mentorship.html
|   ├── workshops.html
|   ├── collaboration.html
|   ├── styles.css
|   └── script.js
|
├── backend/
|   ├── server.js
|   ├── auth.js
|   ├── db.js
|   ├── opportunities.js
|   └── package.json
|
└── .vscode/
    └── settings.json
```

Frontend Components

1. Home Page (index.html)

Introduces the platform

Showcases featured opportunities

Displays testimonials

2. Login Page (login.html)

User authentication form

3. Sign Up Page (signup.html)

New user registration form

4. Job Listings Page (job-listings.html)

Displays available job opportunities

5. Mentorship Programs Page (mentorship.html)

Lists available mentorship programs

6. Workshops Page (workshops.html)

Showcases upcoming workshops

7. Project Collaboration Page (collaboration.html)

Information about project collaboration opportunities

Backend Components

1. Server (server.js)

Main entry point for the backend

Sets up Express server

Configures middleware

Defines API routes

2. Authentication (auth.js)

Handles user signup and login

Implements JWT for secure authentication

3. Database Connection (db.js)

Establishes and manages MySQL database connection

4. Opportunities (opportunities.js)

Manages CRUD operations for opportunities (jobs, mentorships, etc.)

API Endpoints

POST /api/auth/signup - User registration

POST /api/auth/login - User login

GET /api/opportunities - Fetch all opportunities

POST /api/opportunities - Create a new opportunity

GET /api/mentorship-programs - Fetch mentorship programs

GET /api/project-collaborations - Fetch project collaborations

Database Schema

The project uses a MySQL database with the following tables:

users

opportunities

mentorship_programs

project_collaborations

(Detailed schema definitions are not provided in the given code snippets)

Security Measures

Password Hashing: Bcrypt is used to securely hash user passwords before storing them in the database.

JWT Authentication: JSON Web Tokens are implemented for secure user authentication and authorization.

CORS: Cross-Origin Resource Sharing is configured to control access to the API.

Future Enhancements

Implement user profiles and dashboard

Add a messaging system for direct communication between students and professionals

Integrate a rating and review system for mentors and workshops

Implement a recommendation engine for personalized opportunity suggestions

Add analytics to track user engagement and platform performance

Deployment

The project is currently set up for local development. For production deployment, consider the following:

Set up environment variables for sensitive information (database credentials, JWT secret)

Implement HTTPS for secure communication

Use a production-grade web server (e.g., Nginx) as a reverse proxy

Set up a CI/CD pipeline for automated testing and deployment

Conclusion

Tech Hub aims to revolutionize the way students connect with industry professionals, providing a comprehensive platform for skill development, mentorship, and career opportunities. By bridging the gap between academia and industry, Tech Hub empowers students to build successful careers in the tech industry.

This documentation provides an overview of the project structure, key components, and future enhancements. As the project evolves, remember to update this documentation to reflect any changes or additions to the platform.