A

PROJECT REPORT

ON

MENTOR CONNECT

SUBMITTED TO

SHIVAJI UNIVERSITY, KOLHAPUR

IN THE PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF DEGREE BACHELOR OF TECHNOLOGY IN COMPUTER SCIENCE AND ENGINEERING

SUBMITTED BY

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UNDER THE GUIDANCE OF

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DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE ENGINEERING

DKTE SOCIETY'S TEXTILE AND ENGINEERING INSTITUTE, ICHALKARANJI

(AN EMPOWERED AUTONOUMOUS INSTITUTE)

2024-2025

D.K.T.E. SOCIETY'S

TEXTILE AND ENGINEERING INSTITUTE, ICHALKARANJI
(AN EMPOWERED AUTONOUMOUS INSTITUTE)

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE ENGINEERING

CERTIFICATE

This is to certify that, project work entitled

MENTOR CONNECT

is a bonafide record of project work carried out in this college by

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is in the partial fulfillment of award of degree Bachelor of Technology in Artificial Intelligence and Data Science Engineering prescribed by Shivaji University, Kolhapur for the academic year 2024-2025.

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DECLARATION

We hereby declare that, the project work report entitled "Mentor Connect" which is being submitted to D.K.T.E. Society's Textile and Engineering Institute Ichalkaranji, affiliated to Shivaji University, Kolhapur is in partial fulfillment of degree B.Tech.(AI & DS). It is a bonafide report of the work carried out by us. The material contained in this report has not been submitted to any university or institution for the award of any degree. Further, we declare that we have not violated any of the provisions under Copyright and Piracy / Cyber / IPR Act amended from time to time.

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Thank you,

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ABSTRACT

Mentor Connect is a user-friendly web platform built to connect mentors and mentees in a meaningful way. It gives users the choice to join as a mentor, sharing their experience and skills, or as a mentee looking for guidance and support. Mentors can easily set up their profiles with details like specialization, experience, and availability, while mentees can browse through these profiles and send requests for one-on-one mentorship sessions. The platform includes secure user login, role-based features, and profile editing tools to personalize each user's experience. Built using the MERN stack (MongoDB, Express, React, and Node.js), Mentor Connect ensures smooth performance and responsive design. Axios helps handle all the communication between the frontend and backend. The goal is to foster a culture of mentorship and career development in a simple and accessible way. Looking ahead, we plan to add calendar booking, email notifications, and even in-app video calls to make the mentorship process more convenient and engaging.

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1. Introduction

A. Problem definition :

In today's fast-moving world, students and young professionals often find themselves unsure of where to go next in their careers. Whether it's learning a new skill, choosing the right path, or simply needing advice from someone experienced—finding the right mentor isn't always easy. Most people still rely on personal contacts or college programs for mentorship, but those options can be limited, hit-or-miss, or just not available when you need them.

The truth is, many people out there have valuable knowledge to share, and many more are looking for guidance—but there's no easy, organized way to bring them together. Current solutions often miss the mark by being too generic, hard to use, or lacking essential features like personalized profiles, proper scheduling, or secure access. As a result, countless mentorship opportunities are lost, and many people continue to struggle alone when they could be growing with the right support.

B. Aim and objective of the project :

- **Aim:**

The aim of Mentor Connect is to create a user-friendly and reliable web platform that helps connect mentees with the right mentors, people who can guide, support, and share real-world experience to help others grow in their careers and skills.

- **Objectives:**

1. Build a simple and secure signup/login system where users can register as either mentors or mentees.
2. Enable mentors to create rich profiles that highlight their experience, expertise, and areas where they can offer guidance.
3. Allow mentees to browse, explore, and connect with mentors based on their interests, needs, and career goals.
4. Provide a clean and role-based dashboard for both mentors and mentees, making it easy to manage sessions and communication.
5. Support mentorship requests and scheduling to ensure smooth and organized interactions between users.
6. Offer edit options for profiles, so mentors can update their details and availability anytime.
7. Ensure all data handling is secure, and follow modern web standards to keep user information safe.
8. Lay the foundation for future features like calendar integration, email notifications, and video calling to make the mentorship experience even smoother.

C. Scope and limitation of the project :

- **Scope of the Project**

  Mentor Connect is designed to be a helpful bridge between mentors and mentees. The platform gives users a place to connect, communicate, and grow—whether it's for career advice, skill development, or simply getting a better sense of direction. It allows mentors to showcase their expertise and availability, while mentees can explore profiles and send requests for guidance. The system includes authentication, profile management, and request handling—all built using the MERN stack to ensure a smooth and responsive experience.

  This project focuses primarily on making the connection and communication process simple and secure. It also sets the stage for future growth, like calendar integration, email reminders, and even in-app video sessions.

- **Limitations of the Project**

  While Mentor Connect covers the basic needs of a mentorship platform, there are still a few limitations:

- No real-time chat features yet—mentorship sessions need to be handled outside the platform for now.
- No calendar integration or notifications at this stage, so users have to manually keep track of scheduled sessions.
- Profile matching is basic, there’s no AI-based recommendation yet.
- Scalability is limited to small to medium user bases until performance optimization and deployment improvements are made.
- No mobile app version, which might limit access for users on the go.

2. Background study and literature overview

A. Literature overview :

Over the years, the importance of mentorship has been highlighted in numerous academic and professional studies. Research consistently shows that mentorship plays a key role in career development, skill enhancement, and personal growth. Traditionally, mentorship was limited to in-person settings—within schools, universities, or workplaces. While valuable, these setups often lacked accessibility, flexibility, and diversity in expertise.

With the rise of digital platforms, mentorship has slowly moved online. Platforms like LinkedIn offer some level of connection, but they are not built specifically for mentorship, and often lack structure or follow-through. Some dedicated mentorship platforms do exist, but they are either too complex, not user-friendly, or cater only to specific fields or institutions.

Literature suggests that an ideal mentorship platform should offer personalized experiences, clear communication tools, and structured scheduling—all while being secure and scalable. Our project, *Mentor Connect*, builds upon these ideas and aims to bridge the gaps found in current systems. By providing a dedicated, role-based platform, we create space for meaningful, goal-driven mentor-mentee relationships that are easier to initiate and manage.

B. Investigation of current project and related work :

Before diving into the development of *Mentor Connect*, we explored various existing platforms and tools that offer mentorship or professional networking services. Popular platforms like **LinkedIn**, **ADPList**, and **GrowthMentor** stood out during our research. While these platforms are doing a great job in facilitating connections, they also revealed some key limitations and areas for improvement.

For instance, **LinkedIn** is excellent for networking but lacks dedicated tools for structured mentorship there's no built-in way to manage sessions, track progress, or schedule meetings easily. **ADPList** provides mentor bookings, but it's often focused on tech/design roles and can feel overwhelming to new users. Some platforms also lack flexibility, aren't beginner-friendly, or don't offer personalized matches based on interests and goals.

We also observed that many platforms don't cater well to both mentors and mentees with clear role-based flows, or they require premium memberships for basic features like messaging or session tracking.

With Mentor Connect, we wanted to combine the best aspects of these platforms simple UI, direct communication, and flexible scheduling—while addressing the gaps. Our solution is designed specifically for mentorship, where both mentors and mentees have clearly defined experiences. It's lightweight, responsive, and built with scalability in mind, using the MERN stack to ensure smooth user interactions and secure data handling.

This investigation helped shape Mentor Connect into a tool that not only connects people but also supports ongoing learning and growth in a practical, meaningful way.

3. Requirement analysis

A. Requirement Gathering :

Before building Mentor Connect, we took time to understand what real users both mentors and mentees actually need. We started by imagining the typical journeys of students looking for guidance and professionals willing to offer mentorship. This helped us identify the core features that would make the platform useful and easy to use.

We gathered input through casual conversations with students, faculty, working professionals, and even by reviewing similar platforms. Through this, a few clear requirements emerged:

➢ **For Mentees :**

- Easy Registration & Login: A quick and secure way to sign up and log in.
- Explore Mentors: The ability to browse mentor profiles based on expertise and interests.
- Request Mentorship: A simple way to send a request or book a session with a preferred mentor.
- Session Tracking: Mentees wanted to see the status of their mentorship requests or scheduled sessions.

➢ **For Mentors :**

- Create & Edit Profiles: A customizable profile to showcase their expertise, experience, and availability.
- Manage Requests: An organized way to view incoming mentorship requests and accept or decline them.
- Update Availability: Flexibility to modify their availability or information over time.

➢ **Common Needs :**

- Role-Based Navigation: Different dashboards for mentors and mentees.
- Secure Authentication: Login should be safe and store session info.

B. Requirement Specification :

1. **User Registration & Login** : Users should be able to create an account as either a mentor or mentee. They can log in securely using their credentials.
2. **Role-Based Dashboard** : Once logged in, mentors and mentees are directed to different dashboards suited to their roles.
3. **Mentor Profile Management** : Mentors can create, view, and edit their profile—including name, specialization, experience, and a short bio.
4. **Mentee Exploration & Requests** : Mentees can browse through available mentors and send mentorship requests to the ones they'd like to connect with.
5. **Request Management** : Mentors receive notifications about new requests and can accept or reject them based on their availability.
6. **Session Status Tracking** : Both mentors and mentees can view the current status of a request (e.g., pending, accepted, completed).

7. **Authentication with Session Handling** : The system uses JWT tokens for managing secure sessions, stored locally so users stay logged in.
8. **API Communication** : The front end communicates with the backend via RESTful APIs using Axios, ensuring smooth data flow and updates.

C. Use case Diagram :

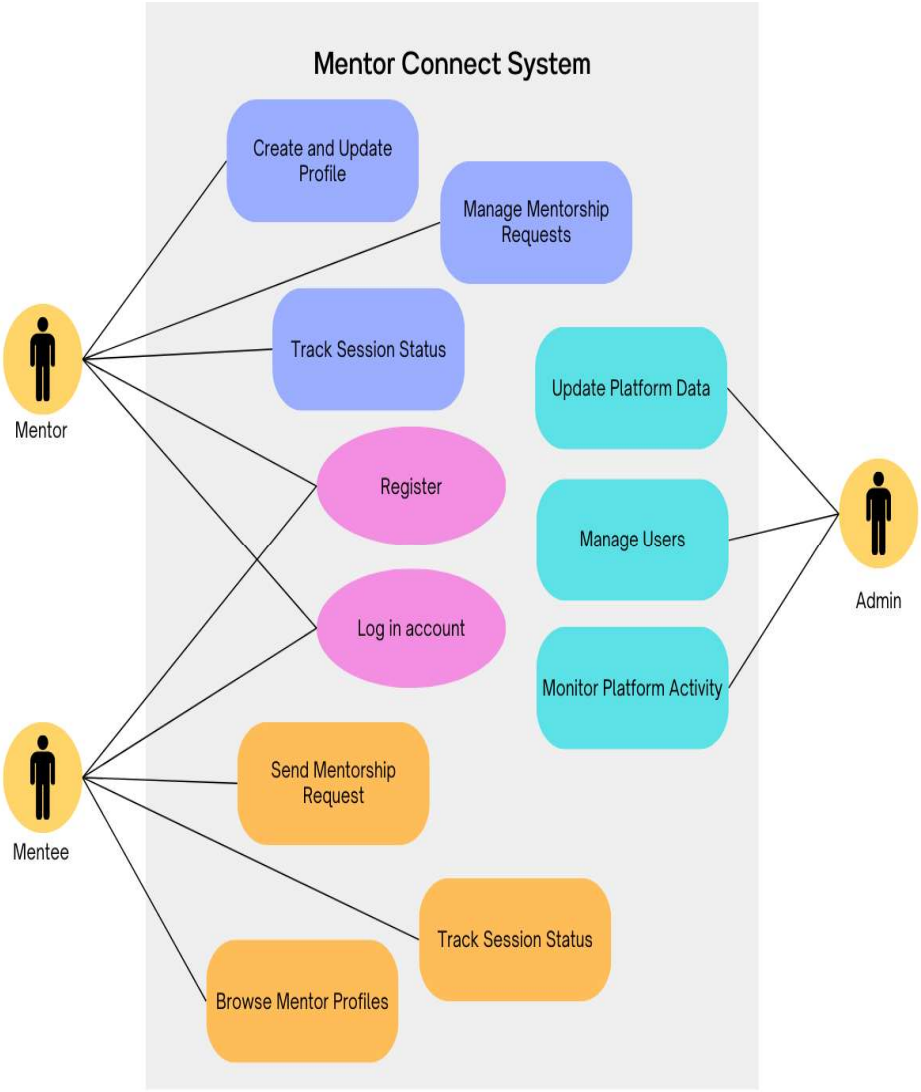

Fig.1 Use case Diagram

4. System design

A. Architectural Design :

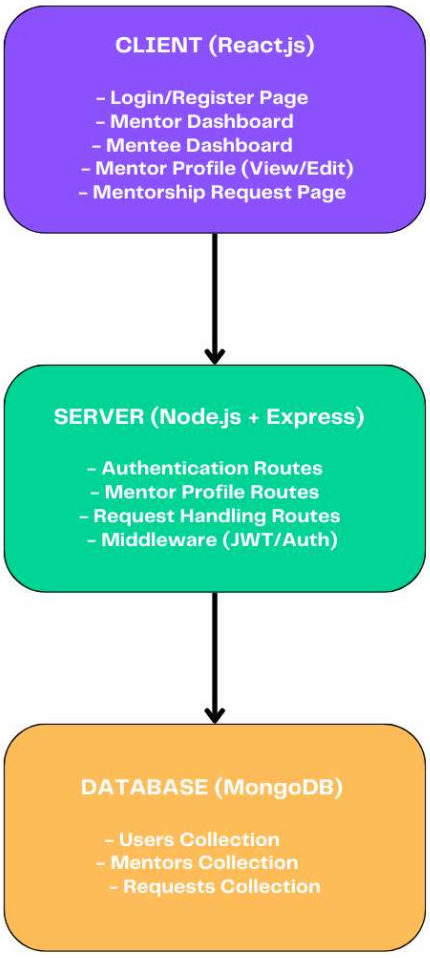

Fig.2 Architectural Design

B. Flow Chart :

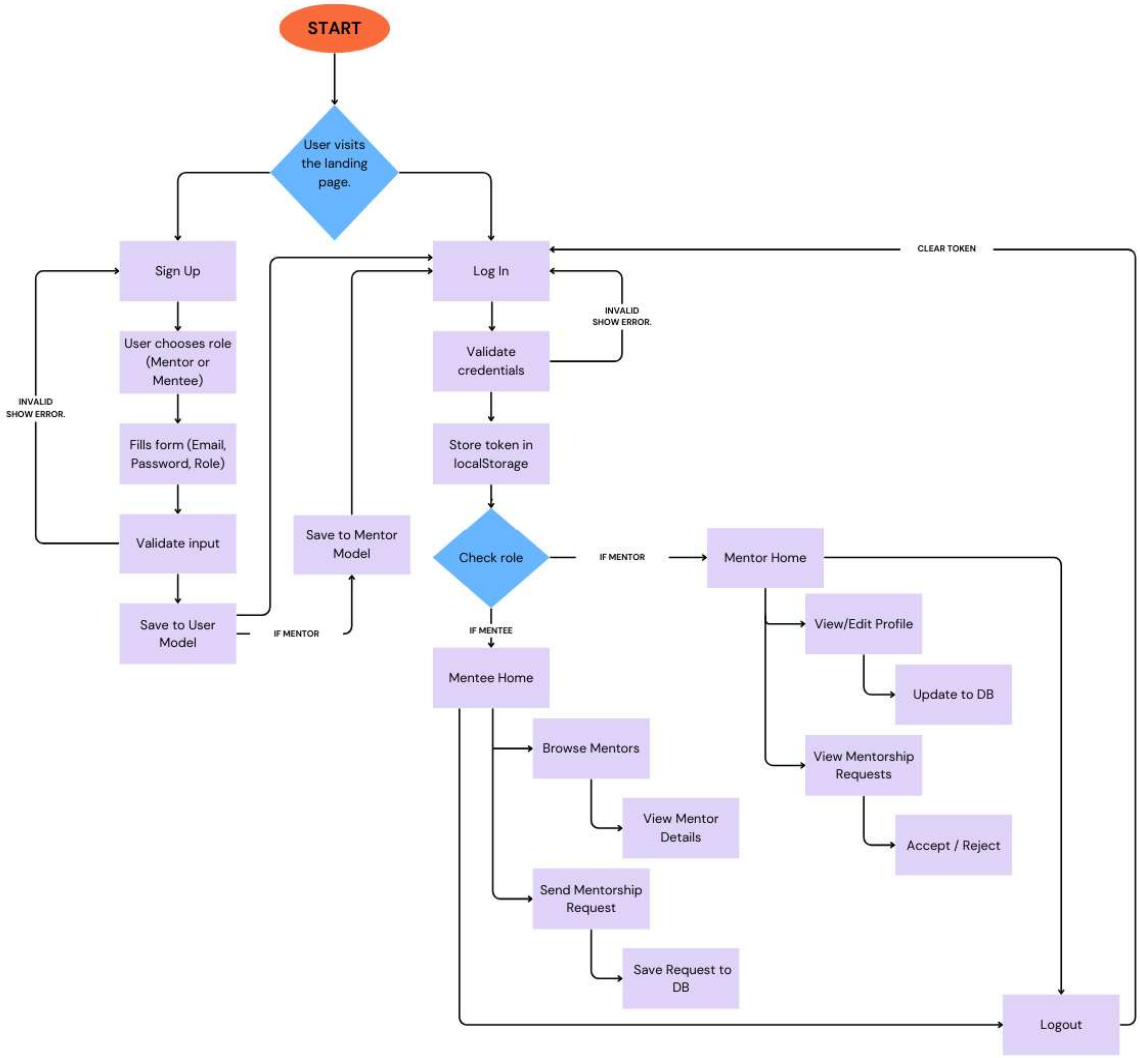

Fig.3 Flow Chart

C. System Modeling :

1. Dataflow Diagram :

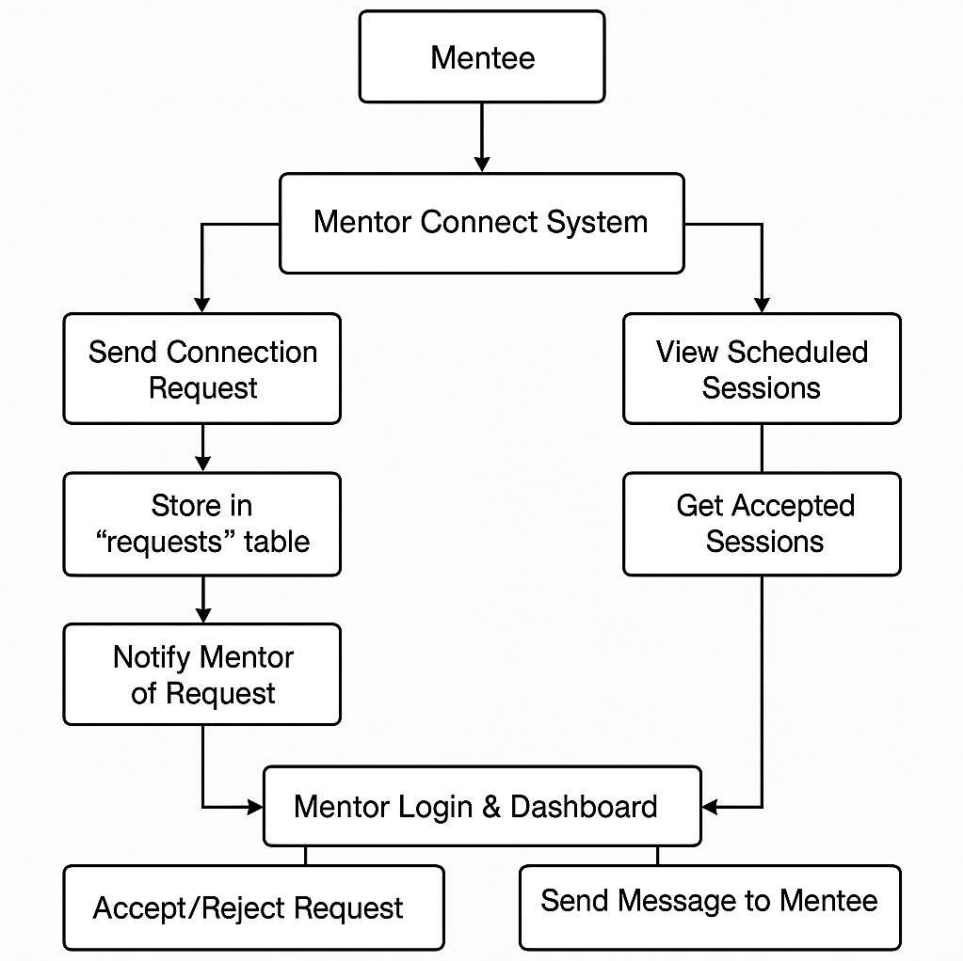

Fig.4 Data Flow Diagram

5. Implementation

A. Agile Methodologies :

- **Agile Methodology for Mentor Connect :**
  To build Mentor Connect efficiently and adaptively, we followed the Agile methodology, which focuses on collaboration, flexibility, and iterative development. Instead of trying to plan everything at once, Agile allows us to build the project step-by-step, improving it continuously based on feedback.

- How We Applied Agile:

  1. User-Centric Approach

  We began by understanding what mentors and mentees really need a smooth platform to connect, communicate, and grow. These real-world needs shaped our initial feature set like registration, profile management, and session requests.

  2. Sprints (2-Week Cycles)

  The project was divided into small cycles called sprints, where each sprint focused on a specific set of features.

  Example:

  - Sprint 1: Signup/Login and Authentication
  - Sprint 2: Mentor Profile creation/editing
  - Sprint 3: Request and session management
  -

  3. Daily Standups (or Check-ins)

  Our team did quick daily catch-ups to check:

  - What did we complete?
  - What's next?
  - Any roadblocks?

  This kept everyone aligned and ensured continuous progress.

  4. Backlog Management

  We maintained a product backlog, a list of features and improvements that we prioritized based on user needs. As new ideas came up (like video calling or calendar integration), we added them to the backlog for future sprints.

B. Development Model :

For building Mentor Connect, we adopted a Hybrid Development Model a thoughtful blend of the Agile Model and elements of the Iterative Model. This approach allowed us to be flexible, user-focused, and continuously improving, while also making sure we had a solid foundation to build upon.

Why We Chose This Model
We knew that user needs would evolve as we built the platform—mentors might want profile editing, mentees might prefer more intuitive search or session booking. So, we needed a model that gave us room to **adapt and iterate** based on real feedback, not just assumptions.

Key Characteristics of Our Development Model:
1. Incremental Development
We broke the project into smaller pieces (modules)—like authentication, profiles, mentor requests, session scheduling—and built them **one at a time**. Each module was tested and reviewed before moving to the next.
2. User Feedback-Driven
After each stage, we shared the working version with our team and some users to gather feedback. This helped us fix small issues early and even change some features before they became too complex to modify.
3. Parallel Backend & Frontend Development
While backend developers created secure APIs using Node.js and Express, frontend developers simultaneously built user interfaces with React. We stayed in sync through version control and daily discussions.
4. Test Early, Test Often
We didn't wait until the end to test. Each feature was tested right after it was developed, ensuring quality and saving us time in the long run.
5. Modular & Scalable Design
From the beginning, we structured our code and database in a modular way, making it easier to add features like calendar integration or in-app video calling in future releases.

6. Future Scope

Future Scope of Mentor Connect :

While Mentor Connect already bridges the gap between mentors and mentees effectively, the platform has a lot of exciting room to grow and evolve. As we continue to learn from our users and embrace emerging technologies, there are several areas where we see real potential to take this platform to the next level.

What the Future Could Hold :

1. Integrated Calendar Booking System
Allow mentors to sync their Google or Outlook calendars so mentees can book available slots directly—reducing back-and-forth communication and making scheduling seamless.

2. In-App Video Calling
Instead of redirecting to Zoom or Google Meet, *Mentor Connect* could host secure, real-time video sessions right within the platform, enhancing engagement and saving time.

3. Automated Reminders & Email Notifications
Personalized email or SMS alerts for upcoming sessions, new mentorship requests, or profile updates can improve user retention and experience.

4. AI-Powered Mentor Suggestions
Using machine learning, the platform could recommend the best-fit mentors for a mentee based on their interests, learning goals, and communication style.

5. Mobile App Development
Building a mobile app version of *Mentor Connect* would allow users to access mentoring features on-the-go, making it more accessible and user-friendly.

6. Feedback and Rating System
Mentees could leave reviews and ratings for mentors after each session, helping future users choose mentors with more confidence—and allowing mentors to improve continuously.

7. References (public repository GitHub source code links)