

Infosys Springboard Virtual Internship 6.0

Completion Report

Team Details

TEAM MEMBERS AND THEIR ROLES

Name

Role

Maddeni Mohan -- Designed and developed the Login and Signup modules using Firebase Authentication; enhanced the Dashboard module and integrated it with the project backend.

Anuja Ramkrishna Nichat -- Designed and developed the Dashboard module with key ui enhancements and integrated it with the project backend.

Pesala Himavarshini -- Designed and developed the Profile, Study Plan, and Notification modules; integrated Profile module with the project backend.

Himavardhini Munaga -- Designed and developed the Profile, Study Plan, and Notification modules; integrated notification module with the project backend.

Sai Sreeshanth Reddy Goli -- Designed and developed the Study Plan and Notification modules; integrated study Plan module with the project backend.

Tamilselvan J -- Designed and developed the File Upload, Quiz, and Mock Test modules; integrated them with the project backend.

Prasad Dilip Mandale -- Designed and developed the Mock Test module and contributed to developing the Quiz module.

Pothana Pardhu -- Designed and developed the File Upload Preview; contributed to the Progress module, supported integration with the project backend for it, and supported UI enhancements.

Chindiri Chakri -- Designed and developed the Progress module; participated in UI enhancements and supported integration with the project backend; also developed the `topics.json` file for the File Upload Preview until the backend was ready.

Batch Number : 1

Start date : 13/08/2025

Name : POTHANA PARDHU

Internship Duration: 8 Weeks

1. Project Title

AI-Integrated Web Tool for Personalized Study Planning.

2. Project Objective

The AI Tutor project aimed to build an adaptive learning platform that auto-generates personalized study plans and quizzes. It leverages AI and modern web technologies to boost student engagement, improve learning outcomes, and provide a scalable EdTech solution.

3. Project description in detail

The AI Tutor is a full-stack web application developed to personalize and enhance students' learning experiences. My role focused on frontend development, where I contributed to creating an intuitive, secure, and user-friendly interface. Our approach emphasized scalability, performance, and seamless integration with the backend architecture.

Our Approach:

We followed an Agile methodology, breaking down the development into four 2-week milestones. The backend development was tightly integrated with the frontend, requiring us to establish clear API contracts early on.

Technology Used:

- **Frontend:** React.js, Firebase, Tailwind CSS, JavaScript.
- **Authentication:** Integrated with Firebase Auth via the frontend, with user context managed in our MongoDB.
- **Backend Server:** Node.js with the Express.js framework.
- **Database:** MongoDB for storing user profiles, syllabus data, topics, progress, and quiz attempts.
- **AI & Processing:** A Python microservice using PyMuPDF for PDF parsing and spaCy for NLPbased topic extraction.
- **Vector Database:** FAISS (or Pinecone) to store embeddings of syllabus topics and questions, enabling semantic search for future AI features.

4. Timeline Overview

Week	Activities Planned	Activities Completed
Week 1	Project setup (React, folder structure, environment). Design and implement the Login and Signup pages using Firebase Auth.	Completed - Established base React project. Implemented secure user authentication flow and connected it to Firebase.
Week 2	Build the Profile Setup Form (grade, subjects, time) and	Developed and styled the Profile Setup form. Created

	the Syllabus File Upload UI with client-side validation.	the file upload interface, ready for backend API integration.
Week 3	Design and implement the Study Plan page (list/calendar view). Begin initial integration with the GET /study-plan API endpoint.	Developed the Study Plan UI component. Started API integration using mock data for immediate feedback.
Week 4	Develop the interactive Quiz Interface (question display, multiple-choice selection, timer). Implement logic for collecting and submitting answers to the backend.	Built the core Quiz UI. Created the submission handler for the POST /submit-quiz API.
Week 5	Design and implement the Progress Tracking page . Integrate with the GET /progress API to display completion rate charts and quiz score history using Chart.js.	Built the Progress UI with functional data visualization charts.
Week 6	Build the main Dashboard integrating summary cards (Today's Plan, Upcoming Quiz, Overall Progress). Implement the In-App Notifications display.	Finalized the Dashboard structure as the application's central hub. Integrated the notifications feed.
Week 7	Implement the full-length Mock Test UI with a dedicated countdown timer and complex sectional navigation. Conduct cross-browser and responsiveness testing .	Delivered the high-fidelity Mock Test feature. Passed initial UI/UX quality assurance checks.
Week 8	Perform final debugging, code review, and performance optimization . Prepare the final documentation, user guide, and demo for the presentation.	Application was stabilized, all APIs were fully integrated, and final deployment materials were prepared.

5a. Key Milestones

Milestone	Description	Date Achieved
Project Kickoff	Introduction to the project team, mentor, and coordinator. Overview of internship guidelines, project	13 th August 2025

	expectations, and deliverables.	
Prototype/First Draft	Completion of Milestone 1, initial implementation of the project): Focused on building the foundational UI/UX . This included setting up the React project, integrating Firebase Authentication (Signup/Login) , developing the Profile Setup Form , and creating the initial responsive Dashboard layout . We also implemented the File Upload interface for syllabus submission.	26 th August 2025
Mid-Term Review	(Review of progress till Milestone 2): We successfully developed and fully integrated the core user flows by connecting to live APIs. This included designing the Study Plan page (calendar/list view), the interactive Quiz interface (with answer submission and result display), and the dynamic Progress page featuring charts for tracking completion rates and quiz scores.	9 th September 2025
Final Submission	(Technical completion of the project): Completion of advanced features (Milestone 3 & 4). This involved designing and implementing the full-length Mock Test UI with a countdown timer, creating the in-app Notifications system, and performing final UI/UX polishing across the application. The final submission included successful end-to-end integration testing with all backend APIs and final documentation.	3 rd October 2025

Presentation	Preparation and delivery of the final presentation and demo to the team. Includes mock presentation practice and feedback sessions.	Tentative

5b. Project execution details

The project was executed in a phased manner as per the milestones. As a frontend team member, our execution involved:

Foundation and Authentication (Milestone 1):

- We started by setting up the core **React.js** project structure.
- The priority was implementing secure **User Authentication** (Signup/Login) using **Firebase Authentication**. This allowed users to immediately gain secure access.
- We created the **Profile Setup Form** and the **Syllabus File Upload UI**, ensuring client-side validation for file types (PDF/DOCX) and size limits as specified in the plan. This work prepared the interface for the backend's core AI logic.

Decoupled Development using Mocks:

- To prevent the frontend timeline from being blocked by ongoing backend AI development, we implemented a **decoupled development strategy**.
- We created local **Mock JSON** files (e.g., plan.json, quiz.json) to simulate the backend API responses. This allowed us to build the **Study Plan UI** and **Quiz UI** fully, test the component interactions, and refine the styling without waiting for live endpoints.

Core Feature Development and Live API Integration (Milestone 2):

- Once the backend team finalized the API contracts for the study plan and quizzes, we transitioned from mock data to live data.
- We integrated the **Study Plan UI** with the GET /study-plan API, adding the functionality to mark tasks as complete (POST /progress).
- The **Quiz UI** was integrated with GET /quiz and the **Submission Logic** was connected to POST /submit-quiz, which was crucial for displaying immediate feedback (Correct/Wrong answers, Score).
- The **Progress page** was built, integrating **Chart.js** to dynamically visualize data fetched from the GET /progress API (Syllabus completion, Quiz score history).

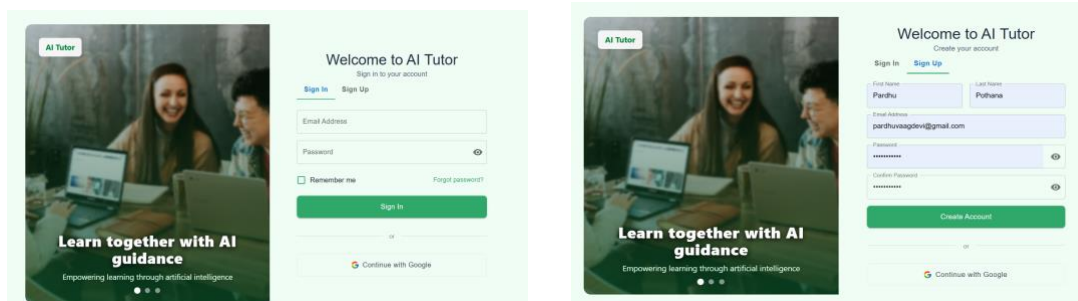
Advanced UI and Final Integration (Milestone 3 & 4):

- We designed and implemented the main **Dashboard** to serve as the user's central hub, aggregating data from the Study Plan, Quiz, and Progress APIs.

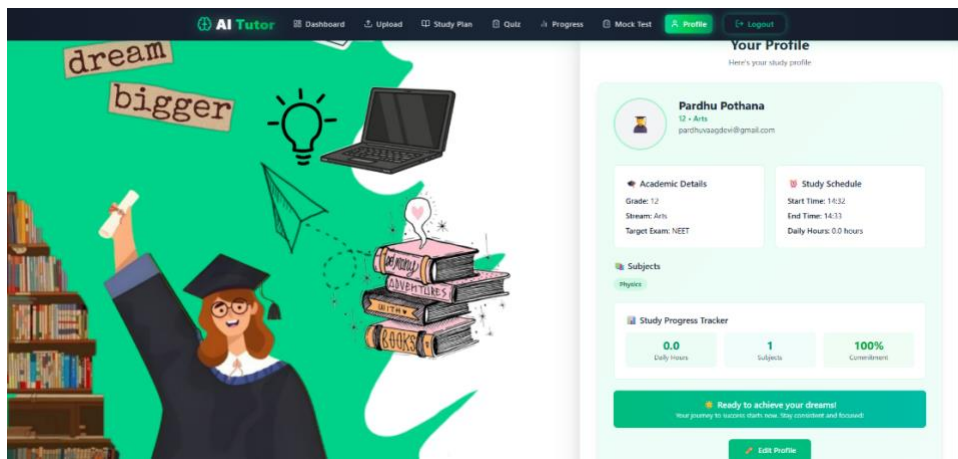
- Advanced features were developed, including the **full-length Mock Test UI** with complex sectional navigation and a dedicated countdown timer.
- We finalized the application by integrating the **In-App Notifications** system.
- **UI/UX Quality Assurance** and **Responsiveness Testing** across different viewports (mobile, desktop) were performed to ensure the frontend was robust, accessible, and maintained a professional look and feel.

6. Snapshots / Screenshots

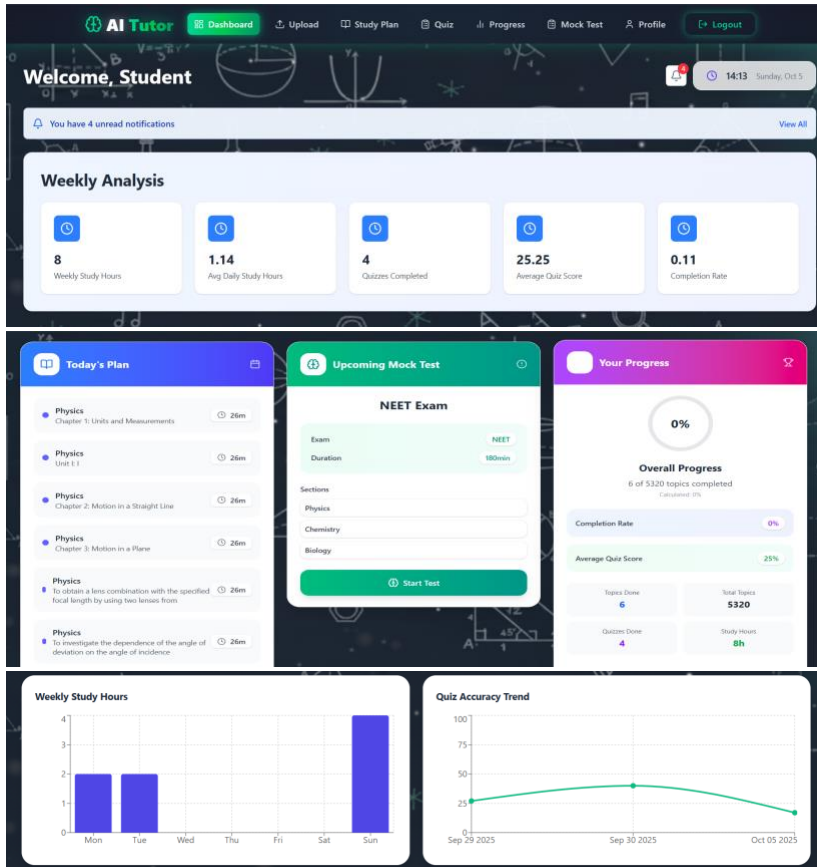
Login-Signup



Profile



Dashboard



Upload

AI Tutor Dashboard Upload Study Plan Quiz Progress Mock Test Profile Logout

Upload Your Files

Upload your syllabus or notes (PDF/DOCX). Your files will be stored securely for generating study plans and quizzes.

File "CBSE Class 11 Physics Syllabus 2025.pdf" uploaded successfully!

File Name	Size	Type
CBSE Class 11 Physics Syllabus 2025.pdf	0.35 MB	PDF Document

[Upload](#) [Remove](#)

[View Study Plan](#)

Syllabus Preview

Class: 11

Physics

- Chapter 1: Units and Measurements
- Unit 1:1
- Chapter 2: Motion in a Straight Line
- Chapter 3: Motion in a Plane

Chemistry

No chemistry topics found

Math

No math topics found

Biology

No biology topics found

Study Plan

AI Tutor | Dashboard | Upload | **Study Plan** | Quiz | Progress | Mock Test | Profile | Logout

Study Plan
JEE & NEET Preparation Schedule

2025-10-05

- Physics** 26m **Completed** Mark Pending Take Quiz
- Chapter 1: Units and Measurements**
Morning
- Physics** 26m **Completed** Mark Pending Take Quiz
- Unit 1.1**
Morning
- Physics** 26m **Completed** Mark Pending Take Quiz
- Chapter 2: Motion in a Straight Line**
Morning
- Physics** 26m **Completed** Mark Pending Take Quiz
- Chapter 3: Motion in a Plane**
Morning

AI Tutor | Dashboard | Upload | **Study Plan** | Quiz | Progress | Mock Test | Profile | Logout

Study Plan
JEE & NEET Preparation Schedule

Overall Progress

- Completion Rate: 5%
- Tasks Completed: 6/132
- Hours Progress: 5%
- Study Hours: 156.0h

Subject-wise Progress

- Physics**
6/132 topics completed
Task Progress: 5%
Hours Progress: 156.0h / 3432.0h

AI Tutor | Dashboard | Upload | **Study Plan** | Quiz | Progress | Mock Test | Profile | Logout

Study Plan
JEE & NEET Preparation Schedule

Study Calendar

SUN	MON	TUE	WED	THU	FRI	SAT
5 Out 0%	6 Out 0%	7 Out 0%	8 Out 0%	9 Out 0%	10 Out 0%	11 Out 0%
12 Out 0%	13 Out 0%	14 Out 0%	15 Out 0%	16 Out 0%	17 Out 0%	18 Out 0%

Quiz

AI Tutor | Dashboard | Upload | **Study Plan** | **Quiz** | Progress | Mock Test | Profile | Logout

Physics Quiz – Chapter 1: Units and Measurements

- The SI unit of length is?
 - Meter
 - Kilogram
 - Second
 - Kelvin
- The unit of mass in CGS system is?
 - Kilogram
 - Gram
 - Pound
 - Newton

Physics Quiz – Chapter 1: Units and Measurements

Your Score: 26.666666666666668%

- The unit of electric charge is?

Wrong
Your Answer: Volt
Correct Answer: Coulomb
- The unit of frequency is?

Wrong
Your Answer: Watt
Correct Answer: Hertz
- The unit of velocity is?

Wrong

Progress

AI Tutor | Dashboard | Upload | **Study Plan** | **Progress** | Mock Test | Profile | Logout

Your Progress Dashboard

Syllabus Completion
4%

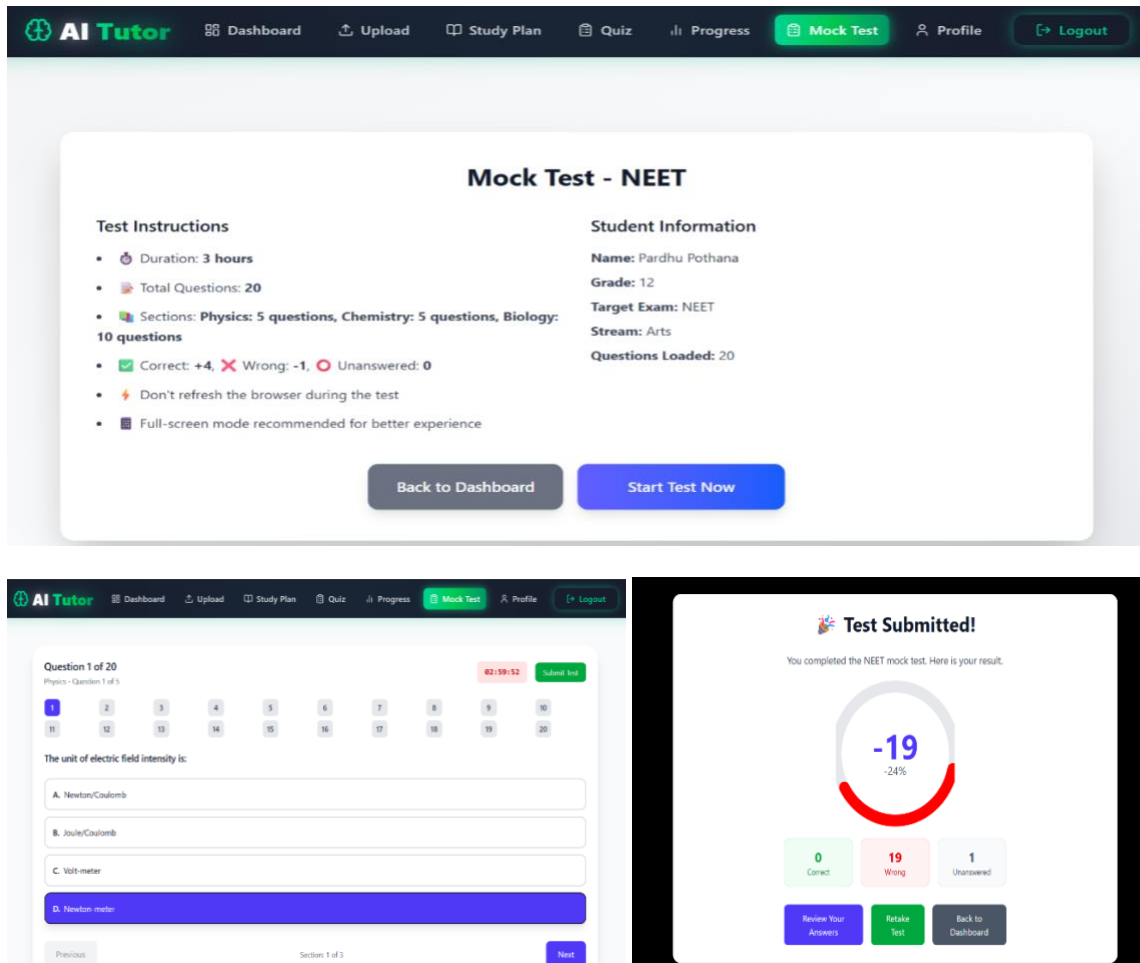
Quiz Scores History
Average quiz score: 26.67%

Progress Timeline

- Topic 1 Day 1: 1%
- Topic 2 Day 2: 1%
- Topic 3 Day 3: 2%
- Topic 4 Day 4: 3%
- Topic 5 Day 5: 4%

Your Achievements

- Completed 5 out of 140 topics
- Average quiz score: 26.67%
- Current streak: 1 Day

Mock Ui

7. Challenges Faced

Challenge 1 : Firebase Authentication Data Persistence

The initial implementation of Firebase Signup/Login had a critical issue where, after successful registration, the user's data (specifically the local session/token) was not being stored or persisted correctly in the browser's Local Storage or session storage. This resulted in the user being not properly redirecting to the Dashboard, causing a broken signup flow.

- Resolution:**

Our mentor, **Revathi Venugari** mam, provided hands-on guidance. We fixed this by correctly configuring the Firebase Persistence setting to ensure the authentication token was stored locally (`firebase.auth().setPersistence(firebase.auth.Auth.Persistence.LOCAL)`) and handled the user state changes (`onAuthStateChanged`) correctly within the React application.

Challenge 2 : Sourcing High-Quality UI Assets

A secondary challenge was the difficulty in quickly sourcing appropriate, high-quality **UI images, icons, and illustrations** for all the application pages (e.g., Dashboard, Study Plan, Quiz). The lack of professional, consistent visual assets made the pages look bare and hampered the desired high-fidelity UI/UX design.

- **Resolution :**
This was mitigated by adopting a dedicated strategy for sourcing assets. We defined a limited set of open-source libraries and resource sites (e.g., specific free icon libraries and illustration packs) to ensure all visual elements were consistent in style, color, and quality. This standardized our UI design process and ensured the final product had a cohesive look and feel.

Challenge 3 : API Contract Synchronization

In the start we teammates were all from different places and different colleges, getting to know and work together was a bit challenging

- **Resolution :**
We sorted out this problem by pulling and pushing the codes in Github and working through the class interaction

8. Learnings & Skills Acquired

Technical Skills :

- **Frontend Development :** Deepened expertise in React.js (functional components, Hooks like useState and useEffect). Gained proficiency in modern, component-based state management (e.g., React Context).
- **API Integration :** Mastered consumption of RESTful APIs (GET, POST requests) for seamless data exchange. Learned best practices for handling asynchronous operations and integrating third-party services like Firebase Auth.
- **UI/UX Design :** Hands-on application of user-centric design principles, focusing on accessibility and intuitive navigation. Gained fluency in responsive design using CSS frameworks to achieve cross-device compatibility.

- **Data Visualization** : Acquired skills in using Chart.js to translate raw performance data (quiz scores, completion rates) into clear, actionable visual graphs for the Progress Dashboard.

Soft Skills :

- **Collaboration**: Enhanced my ability to work effectively in a cross-functional team, constantly communicating with front-end developers.
- **Problem-Solving**: Improved my debugging and logical reasoning skills by tackling complex challenges like adaptive scheduling and data syncing.
- **Project Management**: Experienced the Agile development lifecycle firsthand, delivering features in iterative sprints.

9. Testimonials from team

The internship was an incredibly rewarding experience where I saw theory applied directly to practice.

"The most rewarding part was translating the complex AI logic—like the personalized study plans and adaptive quizzes—into a **simple, intuitive user experience**. Collaborating closely with the backend team to define and consume the APIs was a fantastic exercise in real-world full-stack integration. I'm proud of the final application's **responsiveness and high-quality design**, which is crucial for student engagement."

10. Conclusion

This internship provided an invaluable opportunity to function as a professional **Frontend Engineer** on an end-to-end software project. I successfully designed and implemented the entire user-facing layer of the complex AI Tutor platform, ensuring high performance and a superior user experience. The project solidified my passion for creating **highly interactive and accessible web applications** and equipped me with the practical skills necessary to excel in a professional development environment. The experience of managing the entire frontend lifecycle, from wireframe to deployment, was a crucial milestone for my career growth.

11. Acknowledgements

I would like to express my sincere gratitude to **Infosys Springboard** for providing this incredible virtual internship opportunity. A special thanks to our mentor, **Revathi Venugari mam**, for their invaluable guidance, patience, and technical insights throughout the project. I am also thankful to our coordinator, **Pradyumna V sir**, for their constant support and for ensuring a smooth and well-organized internship experience. Finally, I want to thank my teammates, both frontend and backend, for their collaboration and support, which made this journey both educational and enjoyable.