

User Manual – Tutor Link

TL

TUTOR LINK

Documentation

CMPG323

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1. Introduction to the Tutor Link Application

The **Tutor Link Web Application** is an innovative online platform designed to seamlessly connect students with qualified tutors for personalized learning experiences. It simplifies the process of finding, scheduling, and managing tutoring sessions through a user-friendly interface and an efficient backend system.

Tutor Link aims to bridge the gap between learners seeking academic support and tutors offering their expertise across various subjects. The platform promotes accessible, flexible, and secure learning opportunities—whether for school, university, or personal development.

Purpose of the Manual

The gap between school and university is a vast and mostly unexpected one. Tutor link aims to help students who need help from those who already have been through it. Students can easily access the web page and login with ease. Tutor requests to be able to tutor and have to have good enough marks to be able to tutor available modules. Tutors could ask for compensation if they wish but this is not done through the web app.

Overview of the Backend System

The Tutor Link backend system is responsible for handling all core data operations, user management, authentication, and communication between the front-end interface and the database.

Developed primarily using **JavaScript (Node.js)**, the backend implements RESTful APIs to manage the system's functionality, including:

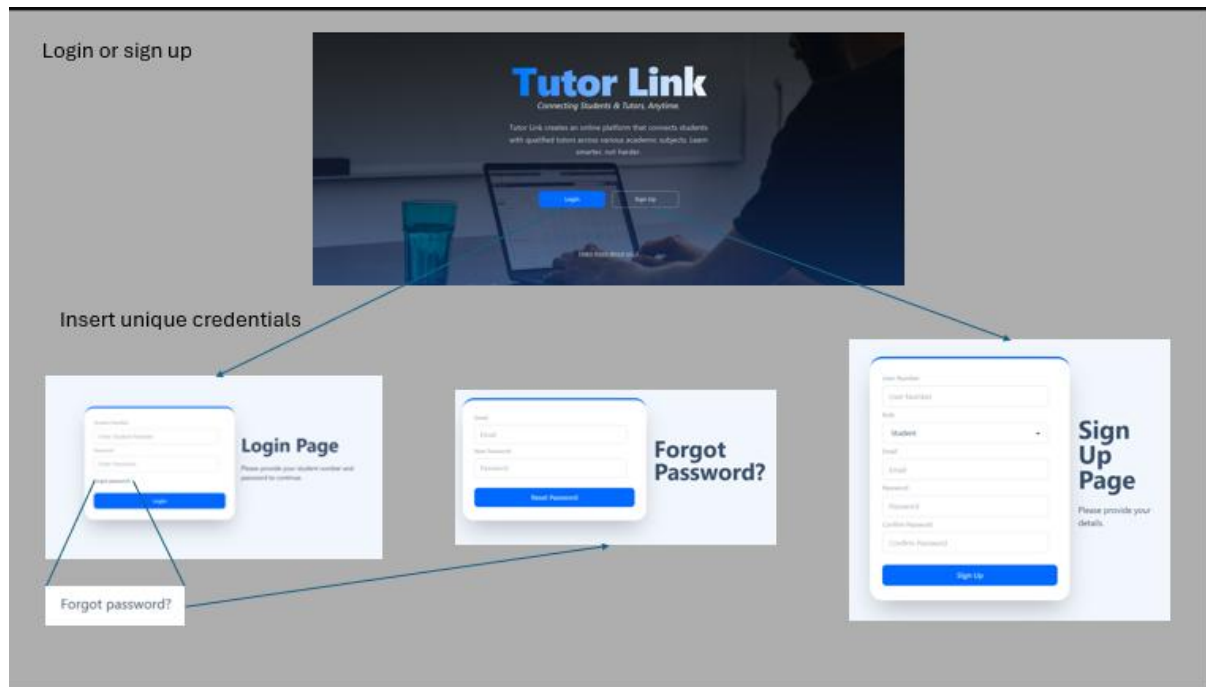
- A Students can rate Tutors, this can be used to choose whether you want to choose a higher rated tutor but they could want more compensation.
- Tutors can rate students as well. This can be used by other tutors to determine whether they want to help certain students.
- User authentication. Students have to create an account and then they are able to login. Tutors have to request from an admin to create an account. The admin creates their account and registers them for the modules that are available.
- Upload notes. Tutors can upload the notes which the student can then access as preparation or as recap work.

- Progress tracking. When a tutor rates the student, they then indicate what they feel their progress is in the certain module.
- Admin controls. An admin can view students, their progress and tutor ratings.
- Booking system. Students can book for certain modules and dates for when the tutors are available.
- Tutors add times when they are available to tutor.
- Cancel sessions. Student can cancel a session if the session is more than 24 hours before occurring.
- Profile editing. Students and Tutors can edit their profiles as things are updated or changed.

This manual is intended for: End users

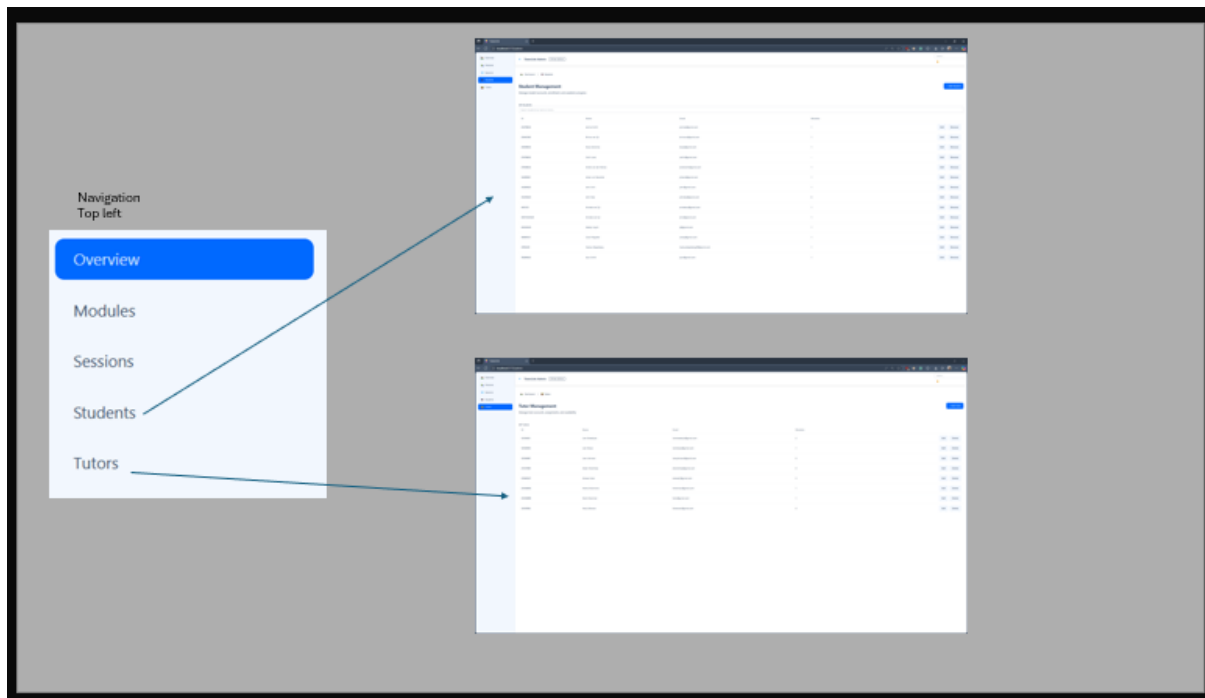
FLOW OF THE SYSTEM

Login Page



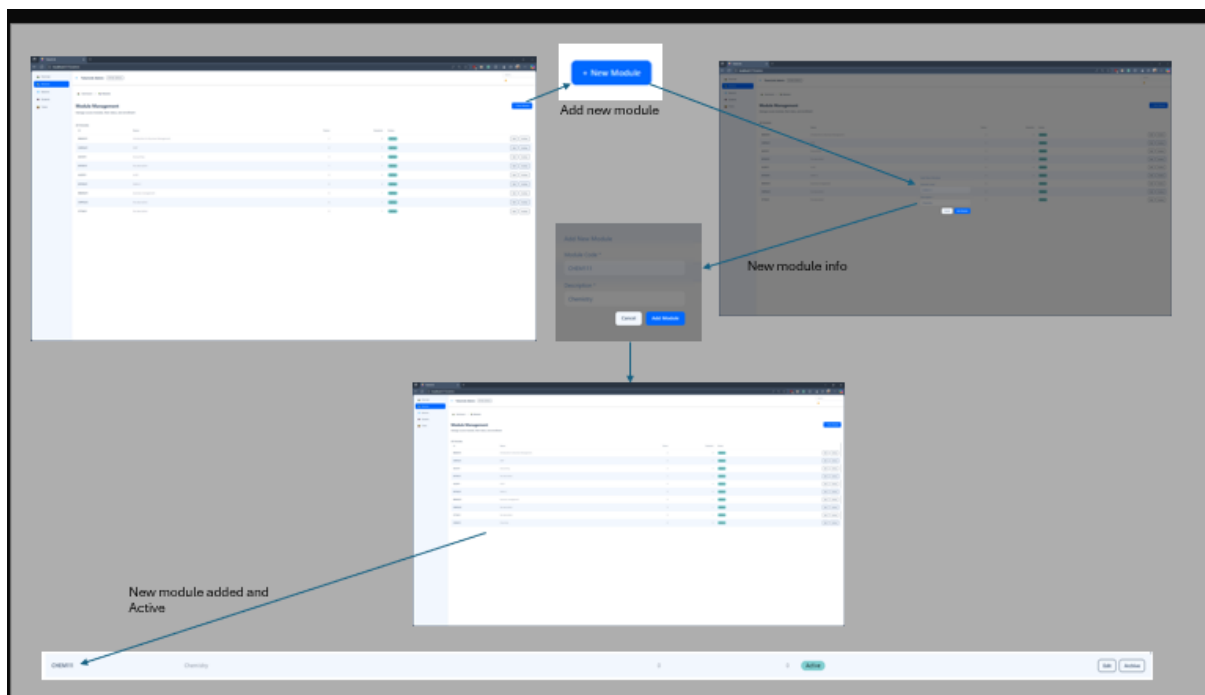
- Login page: User fill in their credentials or can create an account.
- If user forgets their password they can request to reset password.
- If a student wishes to tutor they must contact an admin to register them for a module.

Navigation tab



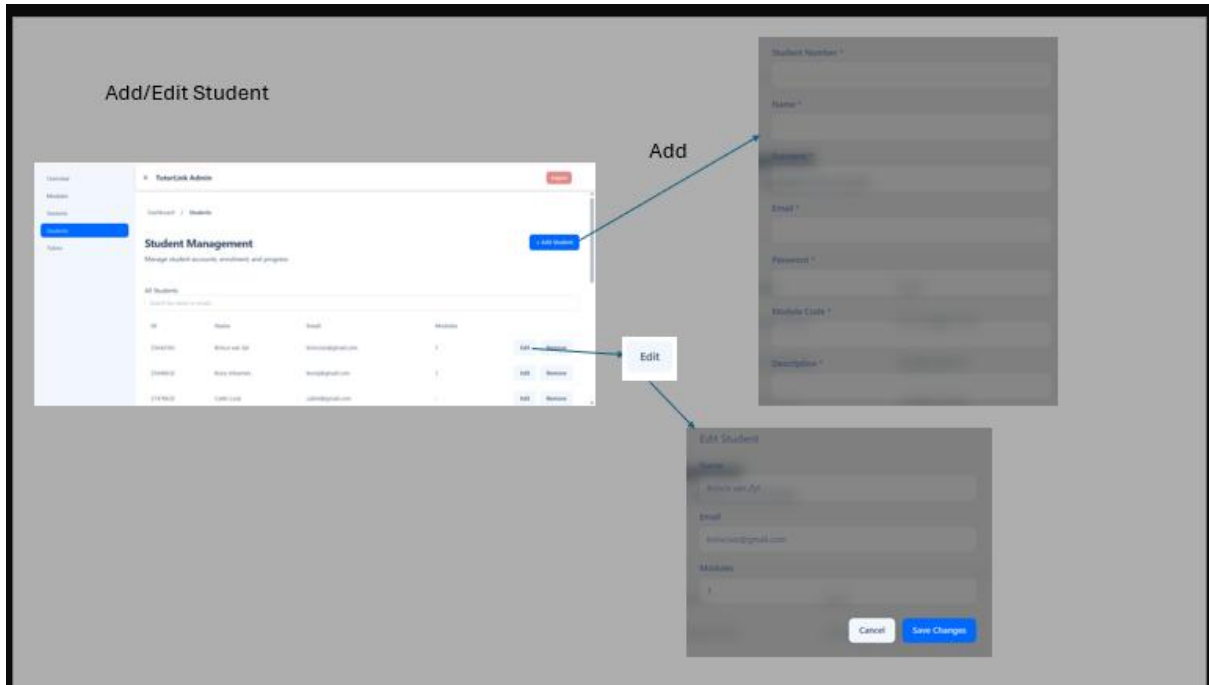
- Navigation of all pages for admin.

Add module



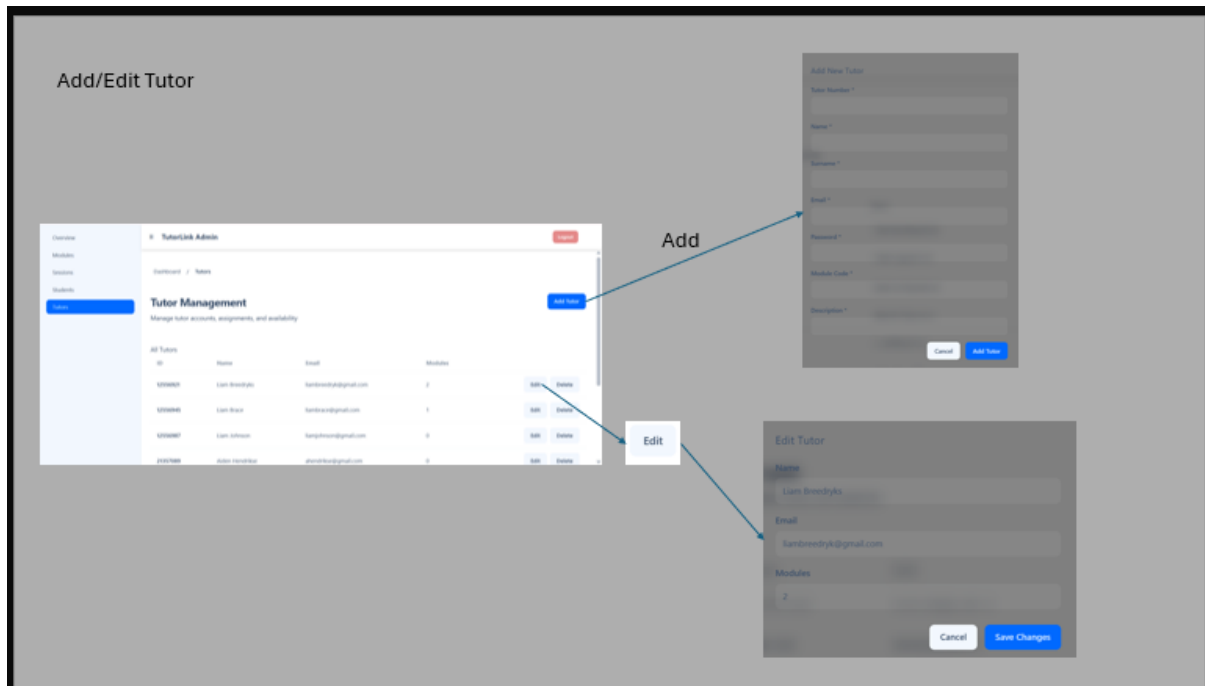
- Admin can add a module, after adding a module the database is updated and students can select it for tutoring.

Add a student



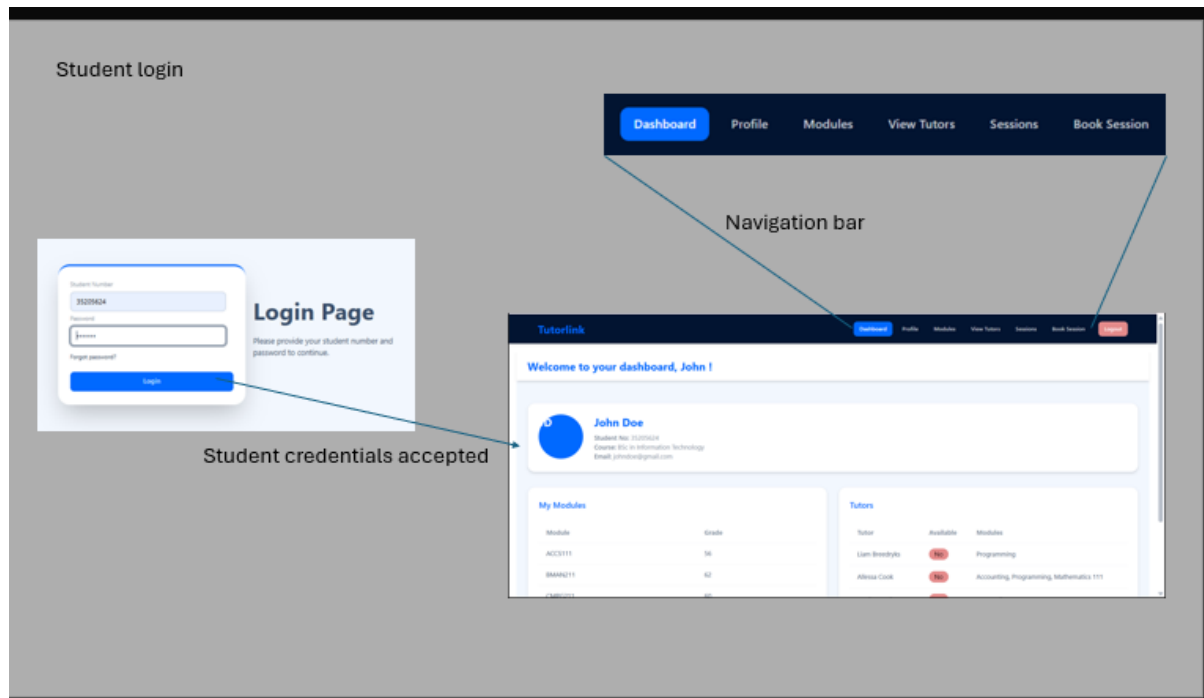
- Create a new student

Add tutor



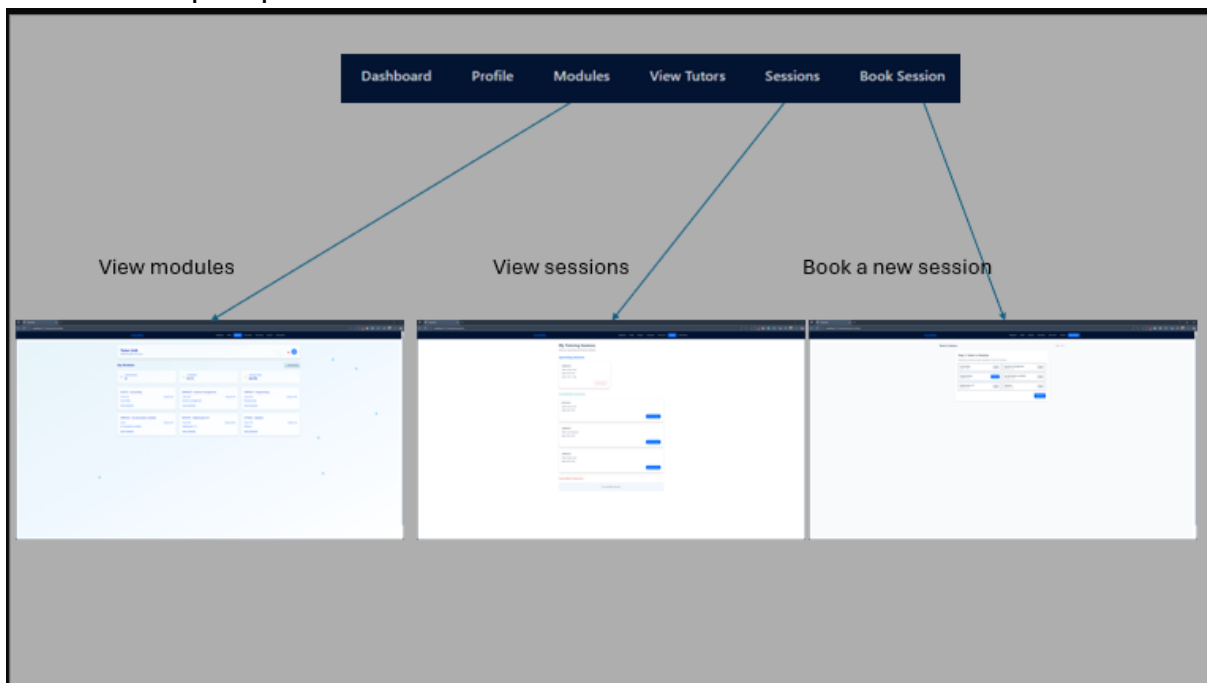
- Admin can create a new tutor.
- Tutor can then log in and add times when they are available to tutor.

Student login



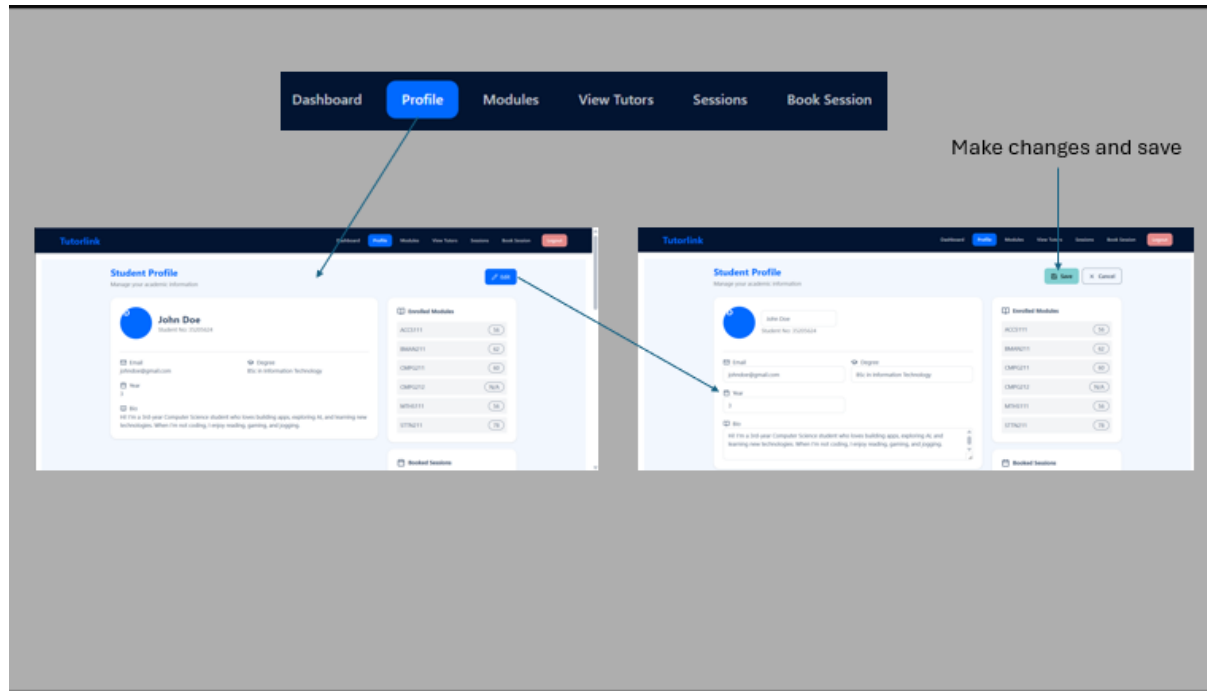
- Student logs in and is on profile dashboard as default.
- Navigation bar is at the top right.

Tab and properties



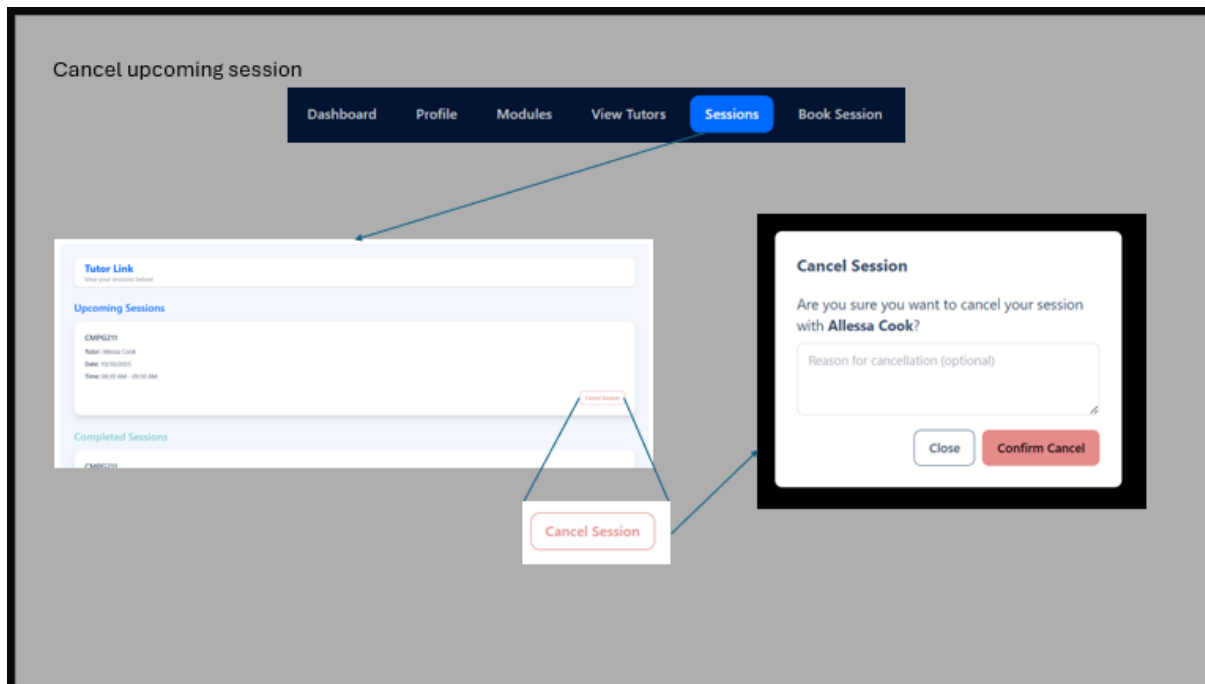
- Navigation for students.

Tab and properties



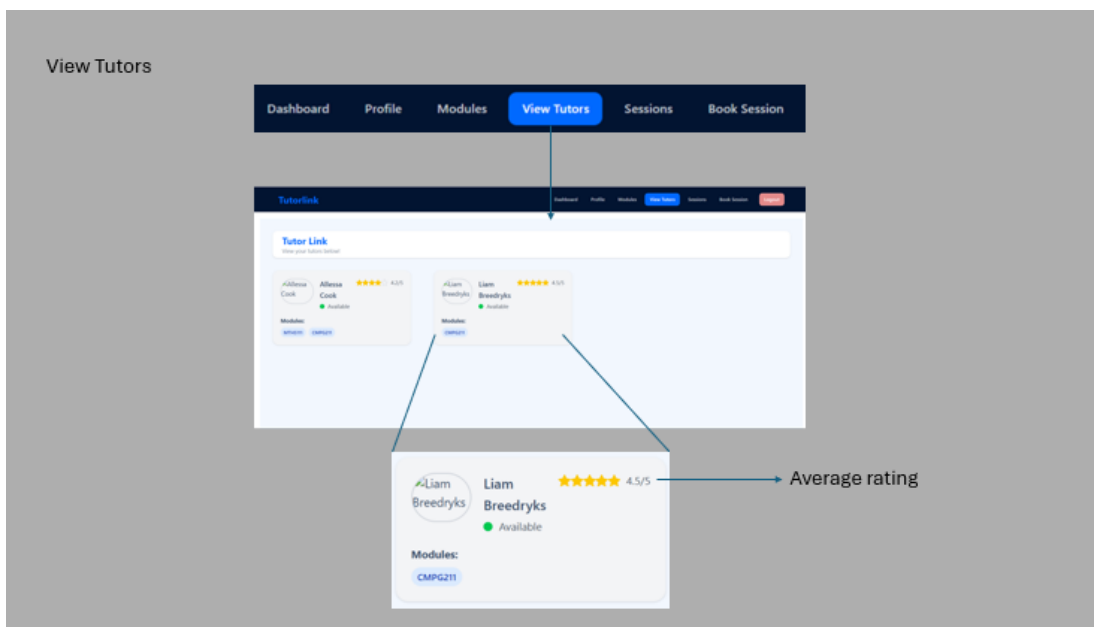
- Students can view their profiles and edit the detail they wish.
- This is then updated in the database. For use if some credentials change.

Cancel sessions



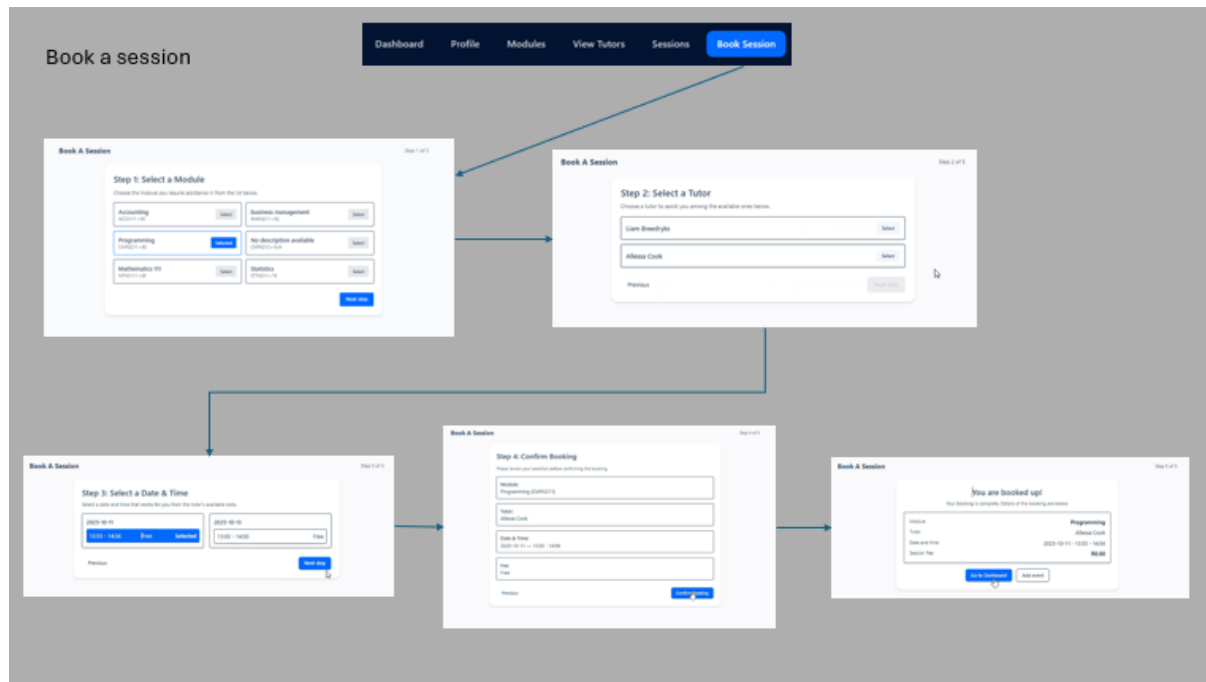
- Student can cancel their upcoming sessions, the student has to give a reason why they chose to cancel session.
- Student cannot cancel a session withing 24h of the session.
- If the student still wishes to cancel they must contact the tutor and they are able to remove the upcoming session.

View tutors



- View tutors in the database and see their average score given by students.

Book a session



- Student books a session by selecting a module then a tutor that registered for that specific module.
- Then the available time of that tutor is displayed. You select a time that fits you and confirm booking for that date.

Rate tutors

My Tutoring Sessions
View your upcoming and previous sessions

Upcoming Sessions

Completed Sessions

Cancelled Sessions

Rate This Session

Rate Your Tutor
Tutor ID: 12156821

Optional feedback

Submit Rating

Average rating
★★★★★ 4.5/5

View Tutor ratings

View Tutors

TutorLink

Tutors for Your Modules

Allena Cook
Available
4.5/5

Liam Breedrys
Available
4.5/5

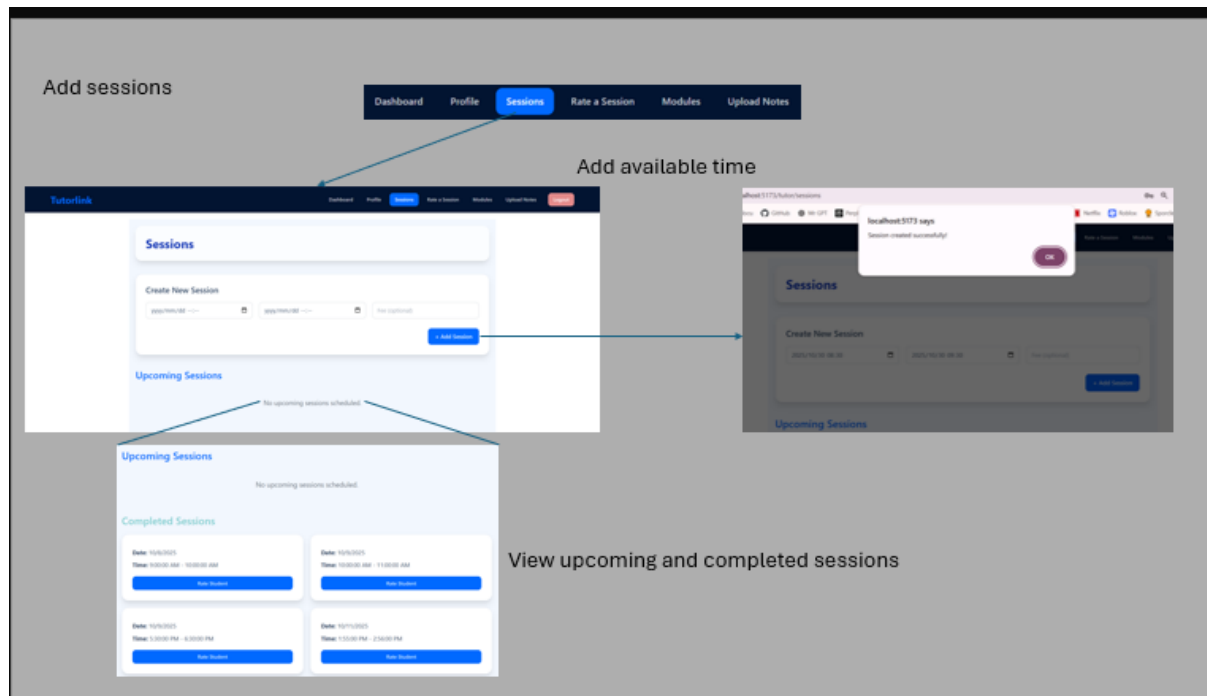
Dashboard Profile Modules View Notes View Tutors Sessions Book Session

- ## Profile and dashboard

Tutor dashboard and profile

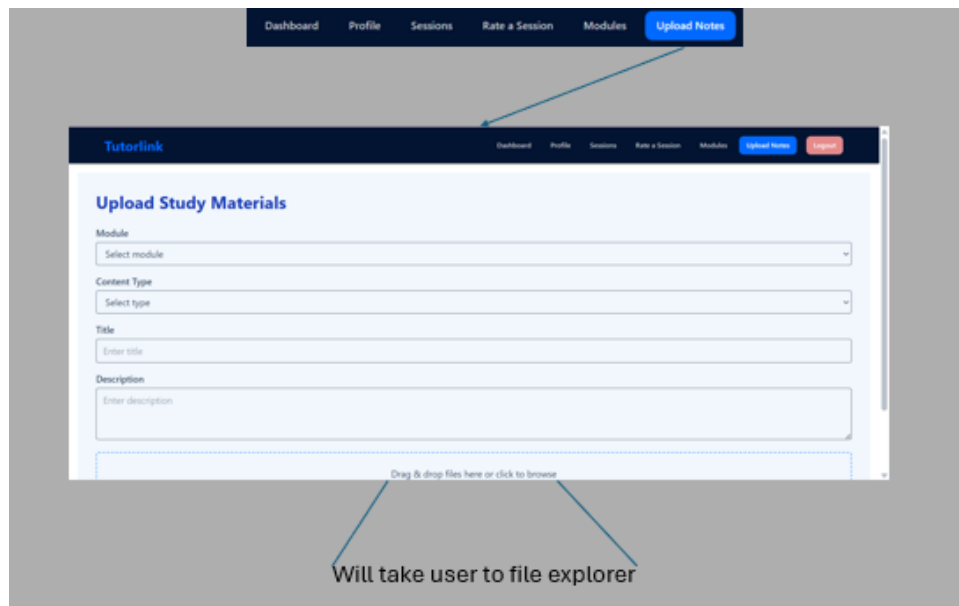
- Tutor can also view and update their profile, which is then updated in the database.

Add sessions



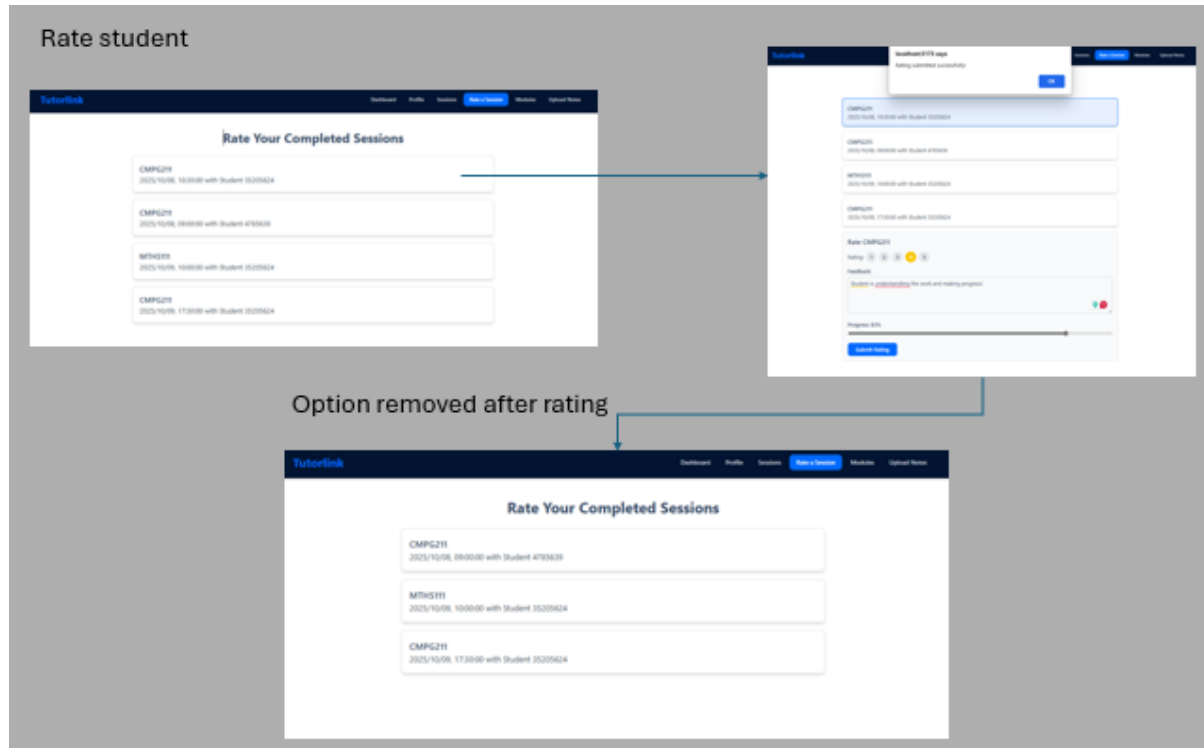
- Tutor can add the times they are available to tutor the students. This is done with a Callender and a date and time is given. Tutors can also remove if something comes up.

Adding study material



- A tutor can add extra study material as needed or upload notes for the student to access from previous or upcoming sessions.

Tutors rate students



- Tutors can also rate students. Out of 5 stars.

The progress tracking is also done on this page. Tracks how far the student has come. The main entities include:

- **Users** – stores general user details such as name, email, password, and role.
- **Tutors** – includes tutor-specific information such as subjects, qualifications, hourly rates, and availability.
- **Students** – stores student-specific data such as enrolled courses, academic level, and linked tutor sessions.
- **Sessions** – manages scheduling, progress tracking, and completion status of tutoring sessions between tutors and students.

2. Program Summary

This section provides a summary of the major backend modules that make up the TutorLink system. Each module plays a key role in ensuring a smooth and efficient experience for students, tutors, and administrators by managing user authentication, bookings, communication, and data flow.

1. Login

Purpose:

The Login module manages the authentication and authorization of users within the TutorLink system. It ensures that students, tutors, and admins can securely access the platform with the appropriate permissions.

Technical Overview:

- Built using Firebase Authentication integrated with Express.js middleware.
- Supports user login, logout, password reset, and token-based authentication.
- Each user role (Student, Tutor, Admin) is assigned through Firebase claims for secure access control.

Key Functions:

- POST /login – Authenticates user credentials and returns a JWT or session token.
- POST /logout – Ends an active session.
- POST /reset-password – Sends a password reset email through Firebase.
- Middleware: Protects all private routes by verifying authentication tokens before granting access.

Error Handling:

- Returns descriptive errors such as 401 Unauthorized for invalid credentials or expired tokens.
- Logs authentication failures to assist with security monitoring.

2. Booking

Purpose:

The Booking module manages all operations related to scheduling and managing tutoring sessions between students and tutors.

Technical Overview:

Developed with Node.js, Express.js, and Firebase Firestore, this module enables students to book, cancel, and view tutoring sessions, while allowing admins to monitor all bookings.

Endpoints Summary:

HTTP Method	Endpoint	Description
POST	/booking	Allows a student to book an available tutoring session.
PATCH	/booking/cancel	Cancels a previously booked session.
GET	/booking/student/:studentId	Retrieves all bookings made by a student.
GET	/booking/sessions	Displays all sessions for admin review.

Main Features:

1. Session Booking: Students can reserve available tutor sessions stored in Firestore.
2. Cancellation: Students can cancel bookings with reasons logged for tracking.
3. View Bookings: Displays upcoming and past sessions for students.
4. Admin Monitoring: Admins can view all sessions, including pending, active, and completed ones.

Testing Tools:

Endpoints are tested using Thunder Client or Postman on <http://localhost:5000>.

3. Feedback

Purpose:

The Feedback module allows students and tutors to exchange ratings and comments after a tutoring session. It ensures quality assurance and performance tracking across the TutorLink platform.

Technical Overview:

- Built using Express.js and MySQL with a modular class-based structure (Feedback class).
- Supports bidirectional feedback: students rating tutors, and tutors rating students.
- Integrated with Authentication middleware to ensure only authorized users can submit feedback.

Key Endpoints:

HTTP Method	Endpoint	Description
GET	/api/feedback	Retrieve all feedback records (admin/testing).
POST	/api/feedback/submit	Submit new feedback for a completed session.
GET	/api/feedback/tutor/:tutorId	Retrieve feedback received by a tutor.
GET	/api/feedback/student/:studentId	Retrieve feedback received by a student.
GET	/api/feedback/booking/:bookingId	View feedback for a specific booking.
GET	/api/feedback/tutor/:tutorId/average-rating	Calculate average rating for a tutor.
GET	/api/feedback/user/:userId	Retrieve both given and received feedback for a user.

Features:

- Prevents duplicate feedback submissions for the same session.
- Calculates and displays average tutor ratings.
- Displays feedback history for each user.
- Ensures feedback can only be submitted for completed sessions.

Error Handling:

Returns appropriate status codes such as 400 for missing fields, 403 for unauthorized actions, and 409 for duplicate feedback attempts.

4. Student

Purpose:

The Student module handles student profile management, learning progress, and booking interactions. It serves as the student's main interface with the system backend.

Technical Overview:

- Built with Express.js and Firestore.
- Each student record includes profile information, module enrollments, booking history, and feedback records.

Key Functions:

- GET /students – Retrieve all student profiles.
- GET /students/:id – Retrieve a specific student's profile, bookings, and feedback.
- POST /students/add – Register a new student (linked to Firebase Authentication).
- PUT /students/:id/update – Update student information.
- DELETE /students/:id/delete – Remove a student profile (admin only).

Features:

- Tracks module progress and session participation.
- Integrates with Booking and Feedback modules to provide a complete learning history.
- Displays session ratings and feedback for each student profile.

5. Tutor

Purpose:

The Tutor module manages all tutor-related operations, including profile management, session scheduling, ratings, and educational resource uploads.

Technical Overview:

Developed using Express.js, Firestore, and Firebase Admin SDK, this module allows tutors to manage their sessions, upload learning materials, and monitor student feedback.

Key Functions:

- **Tutor Retrieval & Search:**
 - /getall – Fetch all tutor profiles.
 - /:id – Get detailed tutor profile (including modules and students).
 - /?module=CODE – Filter tutors by module.
- **Tutor Management (CRUD):**
 - POST /add – Add a new tutor profile.
 - PUT /:id/update – Edit tutor details.
 - DELETE /:id/delete – Remove a tutor from the system.
- **Session Management:**
 - POST /:tutorId/sessions – Create available session slots.
 - POST /:tutorId/sessions/:sessionId/cancel – Cancel scheduled sessions (enforces 24-hour rule).
 - POST /:tutorId/sessions/mark-completed – Automatically mark completed sessions.
 - POST /:tutorId/sessions/:sessionId/rate – Submit ratings for sessions.
- **Resource Management:**
 - POST /:tutorId/upload – Upload module-specific learning materials.
 - GET /:tutorId/modules/:moduleCode/resources – Retrieve uploaded resources.

Features:

- Tutors can manage personal teaching schedules and materials.

- Tracks completed and rated sessions.
- Integrates seamlessly with the Feedback and Booking modules.

3. Authentication & Authorization

User Roles and Permissions

Tutor Link supports multiple roles with defined access levels:

Role	Permissions
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Admin	Full access to all data, including user management and logs
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Tutor	Manage tutoring sessions, view students, update availability
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Student	Book sessions, send messages, and manage personal profiles
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User & Role Management

Admins can manage user accounts through either the Admin Panel or API.

Functions include:

- Creating or deleting users
- Assigning or changing roles
- Resetting passwords
- Deactivating inactive accounts