For the app you're envisioning, here's a detailed database schema design to help organize the structure and relationships between different entities:

**1. Users Table**

This table will store information about the users (students and mentors).

* **user\_id** (PK)
* **username** (Unique)
* **email** (Unique)
* **password** (Hashed)
* **role** (ENUM: 'student', 'mentor')
* **first\_name**
* **last\_name**
* **profile\_picture**
* **bio** (for mentors)
* **created\_at**
* **updated\_at**

**2. Subjects Table**

This table will store the subjects available in the app.

* **subject\_id** (PK)
* **subject\_name**
* **description**

**3. Sections Table**

Each subject will have multiple sections (e.g., for chapters or topics).

* **section\_id** (PK)
* **subject\_id** (FK -> Subjects.subject\_id)
* **section\_name**
* **section\_order** (to maintain the order)
* **text\_content** (for text-based content in the section)
* **image\_content** (URL or path to any related images)
* **created\_at**
* **updated\_at**

**4. Questions Table**

This table will store the quiz questions related to a section.

* **question\_id** (PK)
* **section\_id** (FK -> Sections.section\_id)
* **question\_text**
* **option\_a**
* **option\_b**
* **option\_c**
* **option\_d**
* **correct\_option** (ENUM: 'a', 'b', 'c', 'd')
* **explanation\_a**
* **explanation\_b**
* **explanation\_c**
* **explanation\_d**
* **created\_at**
* **updated\_at**

**5. Quizzes Table**

A table to track quiz attempts by students.

* **quiz\_id** (PK)
* **user\_id** (FK -> Users.user\_id)
* **subject\_id** (FK -> Subjects.subject\_id)
* **total\_score**
* **attempts\_count**
* **completed\_at**

**6. Mentors Table**

This table stores mentor information.

* **mentor\_id** (PK)
* **user\_id** (FK -> Users.user\_id)
* **specialization\_area**
* **availability\_status** (ENUM: 'available', 'unavailable')
* **bio**
* **created\_at**
* **updated\_at**

**7. Mentor Sessions Table**

Tracks the mentor-student interaction.

* **session\_id** (PK)
* **student\_id** (FK -> Users.user\_id)
* **mentor\_id** (FK -> Mentors.mentor\_id)
* **session\_start**
* **session\_end**
* **session\_notes**
* **created\_at**
* **updated\_at**

**8. Opportunities Table**

Stores available scholarship opportunities.

* **opportunity\_id** (PK)
* **title**
* **description**
* **eligibility\_criteria**
* **application\_deadline**
* **link\_to\_apply**
* **created\_at**
* **updated\_at**

**9. User Opportunities Table**

A table to track which opportunities a student has applied for or is interested in.

* **user\_opportunity\_id** (PK)
* **user\_id** (FK -> Users.user\_id)
* **opportunity\_id** (FK -> Opportunities.opportunity\_id)
* **status** (ENUM: 'applied', 'pending', 'accepted', 'rejected')
* **created\_at**
* **updated\_at**

**10. User Progress Table**

Tracks a student's progress within a subject.

* **progress\_id** (PK)
* **user\_id** (FK -> Users.user\_id)
* **subject\_id** (FK -> Subjects.subject\_id)
* **completed\_sections** (Array or JSON of section\_ids)
* **total\_score** (for overall subject performance)
* **created\_at**
* **updated\_at**

**Relationships:**

* A **user** can be either a **student** or a **mentor**. A mentor can have many **sessions** with different students.
* A **subject** can have many **sections**, and each **section** can have many **questions**.
* A **student** can have multiple **quiz attempts** for each subject, tracking their performance.
* A **student** can have multiple **mentor sessions** for guidance.
* A **student** can apply for multiple **opportunities** (scholarships).

This schema should provide a solid foundation for your app, keeping each feature well-connected and scalable. Let me know if you'd like to adjust anything or add more details!

You're right! Some menus and submenus are broader and require mapping to specific pages and database tables. Below is the **detailed mapping of Pages to their respective Menus/Submenus and Tables.**

**📌 Menu, Submenu, and Page Mapping**

**1️⃣ Authentication Menu (Only visible when not logged in)**

| **Submenu** | **Page** | **Tables** |  |
| --- | --- | --- | --- |
| 🔹 Sign Up | Signup Page | Users | Allows students and mentors to create an account. |
| 🔹 Login | Login Page | Users | Allows users to log in to their account. |
| 🔹 Forgot Password | Password Reset Page | Users |  |

**2️⃣ Home Menu**

| **Submenu** | **Page** | **Tables** |  |
| --- | --- | --- | --- |
| 🏠 Home | Home Page | N/A |  |
| ℹ️ About Us | About Page | N/A |  |
| 📞 Contact Us | Contact Page | N/A |  |

**3️⃣ Learn Menu (For Students)**

| **Submenu** | **Page** | **Tables** |  |
| --- | --- | --- | --- |
| 📚 **Subjects** | Subjects List Page | Subjects | Displays all available subjects for students to select. |
| 🔍 Search Subjects | Subjects List Page | Subjects | Displays all available subjects for students to select. |
| ✅ My Enrolled Subjects | Student Dashboard Page | User Progress, Subjects, Subjects | Displays student learning progress, quiz performance, and recommended topics. |
| 📑 **Lessons** | Subject Details Page | Subjects, Sections | Shows the sections/topics within a subject. |
| 📌 Sections Overview | Subject Details Page | Sections |  |
| 📝 View Section Content | Section Content Page | Sections | Displays the lecture content (text and images) for a selected section. |
| 🎯 **Practice Quizzes** | Quiz Page | Questions, Quizzes |  |
| 📝 Take Quiz | Quiz Page | Questions, Quizzes, User Progress | Shows quiz questions for a section, allows students to answer, and stores their performance. |
| 📊 Quiz Results | Quiz Result Page | Quizzes, User Progress | Displays quiz results, correct answers, explanations, and progress. |
| 🚀 **My Progress** | Student Dashboard Page | User Progress |  |
| 📈 Overall Progress | Student Dashboard Page | User Progress, Quizzes |  |
| ⭐ Leaderboard (Optional) | Student Dashboard Page | User Progress (Optional) |  |

**- There is need to include short quizzes and Final quiz among the subject sections. This will help to test student understanding of each section.**

**- Once a student finish a section mark it as complete**

**4️⃣ Mentor Menu**

| **Submenu** | **Page** | **Tables** |  |
| --- | --- | --- | --- |
| 🧑‍🏫 Find a Mentor | Mentor List Page | Mentors, Users | Displays a list of available mentors with their specialization. |
| 🔍 Browse Mentors by Specialization | Mentor List Page | Mentors | Displays a list of available mentors with their specialization. |
| 📂 My Selected Mentors | Mentor Profile Page | Mentors | Shows a mentor’s details, bio, and availability. |
| 💬 **Chat with Mentor** | Mentor Chat Page | Mentor Sessions |  |
| 📞 Start a Session | Mentor Chat Page | Mentor Sessions | Enables real-time chat between students and mentors. |
| 📜 Session History | Mentor Dashboard Page | Mentor Sessions |  |

**5️⃣ Opportunities Menu**

| **Submenu** | **Page** | **Tables** |  |
| --- | --- | --- | --- |
| 🎓 View All Scholarships | Scholarship List Page | Opportunities | Displays available scholarships and opportunities. |
| 🔎 Search Scholarships | Scholarship List Page | Opportunities |  |
| View Selected Scholarship | Scholarship Details Page | Opportunities | Shows full details of a scholarship, including eligibility and application link. |
| 📜 My Applications | Applied Scholarships Page | User Opportunities | Shows scholarships the student has applied for and their statuses. |

**6️⃣ Dashboard Menu**

**For Students**

| **Submenu** | **Page** | **Tables** |  |
| --- | --- | --- | --- |
| 🏫 My Learning Dashboard | Student Dashboard Page | User Progress, Quizzes, Subjects | Displays student learning progress, quiz performance, and recommended topics. |
| 📖 Subjects Overview | Student Dashboard Page | Subjects, User Progress | Displays student learning progress, quiz performance, and recommended topics. |
| 🎯 Quiz Performance | Quiz Result Page | Quizzes |  |
| 📊 Progress Reports | Student Dashboard Page | User Progress | Displays student learning progress, quiz performance, and recommended topics. |

**For Mentors**

| **Submenu** | **Page** | **Tables** |  |
| --- | --- | --- | --- |
| 🏫 Mentor Dashboard | Mentor Dashboard Page | Mentors, Mentor Sessions | Displays the mentor’s scheduled sessions and chat history. |
| 📅 Scheduled Sessions | Mentor Dashboard Page | Mentor Sessions | Displays the mentor’s scheduled sessions and chat history. |
| 📜 Chat History | Mentor Dashboard Page | Mentor Sessions | Displays the mentor’s scheduled sessions and chat history. |

**Ability for the student to Book session with any of the mentor. And the booked session should appear on the mentor dashboard. Also, on the schedule day a notification should be send an hour time to both the student and the mentor before the meeting. This schedule should be display on the mentor\_list.html for the student role.**

**For Admin**

| **Submenu** | **Page** | **Tables** |  |
| --- | --- | --- | --- |
| ⚙️ Admin Dashboard | Admin Dashboard Page | Users, Subjects, Questions, Mentors, Opportunities | Allows admin to manage users, subjects, mentors, and scholarships. |
| 👥 Manage Users | Admin Dashboard Page | Users | Allows admin to manage users, subjects, mentors, and scholarships. |
| 📚 Manage Subjects | Admin Dashboard Page | Subjects, Sections | Allows admin to manage users, subjects, mentors, and scholarships. |
| 🎓 Manage Scholarships | Admin Dashboard Page | Opportunities | Allows admin to manage users, subjects, mentors, and scholarships. |
| 🧑‍🏫 Manage Mentors | Admin Dashboard Page | Mentors | Allows admin to manage users, subjects, mentors, and scholarships. |
| 📊 Reports & Analytics | Admin Dashboard Page | User Progress, Quizzes | Allows admin to manage users, subjects, mentors, and scholarships. |

**7️⃣ Account Menu (For Logged-in Users)**

| **Submenu** | **Page** | **Tables** |  |
| --- | --- | --- | --- |
| 👤 My Profile | Profile Page | Users, Mentors | Displays user profile information with an option to update details. |
| 📝 Edit Profile | Profile Page | Users | Displays user profile information with an option to update details. |
| 🔒 Change Password | Profile Page | Users | Displays user profile information with an option to update details. |
| 🚪 Logout | N/A (Redirects) | N/A |  |

**🔹 Key Notes:**

* **Some submenus point to the same page** (e.g., "Subjects Overview" and "My Learning Dashboard" both go to the **Student Dashboard Page**).
* **Admins have their own dashboard** with **user, subject, and mentor management** tools.
* **Mentors have a dedicated dashboard** to track **sessions and chat history**.
* **Students track their progress via the Student Dashboard** with **quiz performance, enrolled subjects, and leaderboard (if included).**
* **All users have an account menu** for profile management.

This **mapping ensures easy navigation** and **proper database connectivity** for every feature. 🚀  
Would you like any modifications or additions? 😊