# User Manual

**AI Adaptive MCQ Practice & Testing Platform**

**Overview**

This platform helps students practice and take adaptive or fixed-mode multiple choice questions (MCQs) across grades, subjects, and chapters. It also tracks performance history and enables reviewing mistakes for long-term learning improvement.

**1. Getting Started**

**Step 1: Register an Account**

* Go to /register
* Provide your **email**, **name**, and a **password**
* Submit to create an account

**Step 2: Login**

* Navigate to /login
* Enter your registered credentials
* After login, you’ll be redirected to /dashboard

**2. Dashboard Functions**

After logging in, access the following features from /dashboard:

| **Button** | **Description** |
| --- | --- |
| **Start a New Test** | Launch a new test by choosing grade, subject, chapter, and difficulty |
| **My Profile** | See previous test history and scores |
| **Review Wrong Questions** | Review all incorrect answers from past attempts |

**3. Taking a Test or Practice**

**Step-by-Step Flow:**

1. **Grade Selection** /grade  
   → Choose class (e.g., Class 6, 7, etc.)
2. **Subject Selection** /subject  
   → Pick the subject (Math, Science, English, etc.)
3. **Chapter Selection** /chapter  
   → Select a chapter under the chosen subject
4. **Configure Test** /configure
   * Select:
     + Mode: "test" or "practice"
     + Difficulty: Easy / Medium / Hard / **Adaptive**
     + Number of questions (1–20)
   * System will generate and load questions via LLM API
5. **Answering** /test
   * Answer MCQs one at a time
   * Get immediate feedback (✅/❌)
   * At the end, see a summary score
   * All wrong answers are logged for future review

**4. Adaptive Mode**

In **practice mode**, selecting “Adaptive” difficulty:

* Starts with a medium-level question
* Adjusts difficulty dynamically based on correct/wrong answers
* Tailors difficulty to learner performance
* Generates ~1.5× questions internally but shows only your configured count (e.g., 10)

**5. My Profile**

**/profile**

* Lists all your past tests
* View:
  + Subject, chapter
  + Score, total
  + Mode and date
* Click a report to go to detailed analytics page

**/profile/report/[id]**

* Detailed view of one test
* See all incorrect answers:
  + Your selection vs correct answer
  + Date, class, subject context

**6. Review Wrong Answers**

**/review-wrong**

* Compiles all your wrong answers across **all tests**
* Displays:
  + Question text
  + Your selected answer (red ❌)
  + Correct answer (green ✅)
* Helps identify weak concepts

**8. Tech Stack Summary**

| **Component** | **Tech** |
| --- | --- |
| Frontend | React + Next.js |
| Backend | FastAPI (served separately) |
| MCQ Generator | GEMINI API |
| Storage | PostgreSQL |
| Deployment | Docker + Docker Compose |
| Auth | JWT tokens in localStorage |

**9. Deployment Notes**

* Build the frontend with:  
  docker-compose up --build