

Nura AI — Full System Design Document

Platform Overview

Nura AI is an AI-powered learning assistant web app built on a XAMPP stack (Apache, PHP, MySQL). It supports two main user types: **Students** and **Teachers**, providing personalized learning experiences and smart progress monitoring.

Landing Page

Features

- Introduction to Nura AI: "Personalized, AI-powered learning support to strengthen every student's success path."
 - Key benefits:
 - Adaptive quizzes
 - Real-time proficiency tracking
 - Personalized feedback and study suggestions
 - Call-to-action buttons: **Sign Up**, **Log In**
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Login Page

Features

- Account type selection: **Student** or **Teacher**
 - Fields:
 - Email
 - Password
 - Link to Sign Up: "Create an account"
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Sign Up Page

Purpose

Allow new users to create an account, selecting either **Student** or **Teacher**.

Layout & Features

Account Type Selection

- Choose: **Student** or **Teacher** (controls form fields shown)

Basic Information Fields (common)

- Full Name

- Email Address (validated)
- Password (strong password required)
- Confirm Password

Role-Specific Fields

- **Student:**
 - Grade Level (dropdown)
 - Preferred Subjects (multi-select)
- **Teacher:**
 - School/Institution (text)
 - Subjects Taught (multi-select)

Submit & Redirect Logic

- On success: Confirmation message and redirect to Login Page
- Errors: Inline highlighting

Security

- Password hashing (bcrypt)
- Optional CAPTCHA

Database Schema Additions

- Table `users`: Add `full_name`, `role`
- Table `students`: Add `grade_level`, `preferred_subjects`
- Table `teachers`: Add `school_name`, `subjects_taught`

Student Dashboard

Sections

General Analytics

- Overview of overall subject proficiencies
- Color-coded performance bars (green/yellow/red)
- Progress graphs showing knowledge trends

Proficiency Levels by Subject & Topic

- Breakdown of each subject (e.g., Math, Science)
- Topic-specific performance

Dynamic Quiz System

- MCQ quizzes generated using topic-based question sets (5–10 questions)
- AI dynamically adjusts difficulty level
- Tracks accuracy, time spent, and common errors

Sidebar AI Assistant (Nura)

- Shows quiz performance summaries, strengths & weaknesses
- Personalized feedback messages
- Study suggestions for weak areas
- Advanced topic recommendations for excelling students

Alerts & Suggestions

- AI pings when trends decline
- Suggests remedial actions or new learning challenges



Teacher Dashboard

Sections

Class Overview

- Performance overview at class level
- Interactive visual charts (pie, bar)

Traffic Light System

- Students color-coded: Red (needs help), Amber (moderate), Green (strong)

Student Management

- Individual student profiles
- Access to quiz data, topic proficiency, progress trends

Alert System

- Notifications for underperforming students
- Ability to send feedback or intervention suggestions



Database Design (MySQL)

Example Tables

Table Name	Key Columns
users	user_id, email, password_hash, full_name, role
students	student_id, user_id, grade_level, preferred_subjects
teachers	teacher_id, user_id, school_name, subjects_taught
subjects	subject_id, name, description
topics	topic_id, subject_id, name, difficulty_level

Table Name	Key Columns
question_sets	set_id, topic_id, level_of_difficulty
questions	question_id, set_id, description, options, correct_option, marks_worth, explanation
quizzes	quiz_id, student_id, topic_id, score, date_taken
quiz_responses	response_id, quiz_id, question_id, selected_option, is_correct, time_taken, nura_feedback
performance_trends	trend_id, student_id, topic_id, proficiency_score, trend_graph_data

Technical Architecture (XAMPP Stack)

[Apache (Web Server)]



[PHP Backend Logic] – Routes for login, signup, quiz generation, dashboard logic, AI assistant



[MySQL Database] – Stores users, quiz results, analytics data



[Front-end] – HTML, CSS (Tailwind or Bootstrap), JavaScript (optionally Vue or React)

AI & ML Components

- Basic analysis can run as Python scripts (executed via PHP or connected via API)
- Used for:
 - Proficiency scoring
 - Personalized feedback text

UI/UX Recommendations

- **Landing Page:** Clear CTA buttons, minimal, strong branding
- **Dashboards:** Card-style sections, color-coded, progress visuals
- **Sign Up/Login:** Modern, clean forms with validation
- **AI Sidebar:** Collapsible, personalized messages



Next Steps

- Create wireframes/mockups (e.g., in Figma)
 - Generate SQL schema scripts
 - Develop PHP backend routes and validation logic
 - Integrate front-end framework and design system
 - Connect AI logic to analytics and feedback modules
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Conclusion

This design document provides a complete plan for Nura AI's architecture, database, and user experience, ready for XAMPP deployment. Let me know if you'd like me to attach detailed wireframes, SQL files, or sample code next!