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AcademIQ – Project Overview

AcademIQ is a modern, data-driven educational platform designed to enhance the teaching and learning experience for both teachers and students. The platform leverages analytics, personalized feedback, and AI-powered tools to foster academic growth, engagement, and performance tracking in an intuitive, user-friendly environment.

Key Objectives

- **Empower Teachers:** Provide robust tools for content creation, student management, and performance analytics.
- **Support Students:** Offer personalized learning paths, feedback, and progress tracking to maximize student success.
- **Leverage Data & AI:** Use analytics and AI to generate insights, automate quiz creation, and deliver tailored educational resources.

Core Features

1. User Roles & Access

- **Teacher Role:** Access to dashboards, quiz and module management, student analytics, and feedback tools.
- **Student Role:** Access to learning resources, quizzes, personal analytics, and feedback from teachers.
- **Role-based Security:** Strict access control ensures users only see features relevant to their role.

2. Quiz Management & Analytics

- **Manual & AI Quiz Creation:** Teachers can create quizzes manually or generate them from PDF documents using AI.
- **Quiz Templates:** Reusable templates for efficient quiz creation.
- **Performance Analytics:** Detailed statistics and visualizations for quiz results, question difficulty, and student completion rates.
- **Question Analysis:** Identify problematic questions and visualize success rates.

3. Student Management & Analytics

- **Student List:** Teachers can view and manage all their students.

- **Individual Analytics:** Track each student's progress, quiz history, time spent, and improvement over time.
- **Class-wide Statistics:** Aggregate analytics for the entire class, with historical trends and comparison tools.

4. Feedback System

- **Individual & Batch Feedback:** Teachers can send feedback to one or multiple students, grouped by performance.
- **Two-way Communication:** Students can reply to feedback, enabling ongoing dialogue.
- **Feedback History:** Both teachers and students can review past feedback and replies.

5. Learning Resources

- **Course PDFs:** Upload, categorize, and manage course documents.
- **Video Summaries:** AI-generated summaries for video content.
- **Text Explanations:** On-demand AI explanations for complex topics.
- **Personalized Learning Plans:** Automatically generated plans based on quiz results and student needs.

6. Gamification & Motivation

- **Points & Achievements:** Students earn points and unlock achievements for completing activities.
- **Leaderboard:** Friendly competition through class and global leaderboards.

7. Module & Chapter Management

- **Content Structuring:** Teachers can create, edit, and organize modules and chapters for their courses.
- **Access Control:** Only the creator teacher can modify their content.

8. Modern UI & UX

- **Responsive Design:** Accessible on desktops, tablets, and mobile devices.
- **Intuitive Navigation:** Role-specific sidebars and dashboards for streamlined access to features.

Technical Highlights

- **Tech Stack:** Built with Laravel (backend), React (frontend), and Inertia.js for seamless SPA experience.

- **AI Integration:** Utilizes AI for quiz generation, video summarization, and text explanation.
- **Data Visualization:** Rich charts and graphs for analytics using libraries like Recharts.
- **Security:** Comprehensive authentication and authorization, with strict role and ownership checks.

Target Users

- **Teachers:** Looking for efficient ways to manage classes, assess student performance, and provide targeted feedback.
- **Students:** Seeking a personalized, engaging, and supportive learning environment.

Vision

AcademIQ aims to bridge the gap between traditional education and modern, technology-driven learning. By equipping teachers with actionable insights and students with personalized support, AcademIQ aspires to foster a culture of continuous improvement, engagement, and academic excellence.

eed a more detailed breakdown of any module or a specific user journey, just let me know!

Student Features Overview

1. User Roles and Relationships

- **Student Role**: Users can have a 'student' role, which is checked throughout the application to determine access and available features.
- **Teacher-Student Relationship**: Each student can be assigned to a teacher, and teachers can have multiple students. This relationship is used for analytics, feedback, and statistics.

2. Learning Analytics & Statistics

- **Personal Learning Statistics**: Students have access to their own learning statistics, including:
  - Quizzes completed
  - Average quiz scores
  - Total time spent on learning activities
  - Performance improvement over time
- **Historical Data**: Students can view their progress over weekly, monthly, and yearly periods, with charts visualizing their learning journey.

- **Activity Breakdown**: Time spent is broken down by activity type (quizzes, documents, videos, learning plans).

3. Quiz Features

- **Quiz Attempt History**: Students can view a detailed history of all their quiz attempts, including scores and completion status.
- **Quiz Analytics**: Students (and teachers viewing a student) can see analytics such as:
  - Overall performance across all quizzes
  - Progress tracking over time
  - Question-level analysis (e.g., which questions were most often missed)
- **Leaderboard**: Students can see their ranking and points compared to others.

4. Feedback System

- **Individual Feedback**: Students receive feedback from teachers on their quiz attempts and learning progress.
- **Batch Feedback**: Teachers can send feedback to multiple students at once, grouped by performance (e.g., critical, at risk, stable, excellent, not attempted).
- **Feedback Replies**: Students can reply to feedback, enabling two-way communication.

5. Learning Resources

- **Course PDFs**: Students can access, save, and view course PDF documents, including by category or course.
- **Video Summaries**: Students can view and save AI-generated video summaries.
- **Text Explanations**: Students can request AI-generated explanations for text content.

6. Learning Plans

- **Personalized Learning Plans**: After quiz attempts, students can receive or generate personalized learning plans to address their weaknesses.
- **Learning Plan Management**: Students can view, follow, or remove learning plans.

7. Achievements and Points

- **Points System**: Students earn points for completing activities, which contribute to their leaderboard ranking.
- **Achievements**: Students can unlock achievements based on their learning milestones.

8. Teacher Dashboard (Student Management)

- **Student List**: Teachers can view all their assigned students, with quick access to each student's analytics and learning statistics.
- **Comparison Tools**: Teachers can compare students' performance, time spent, and progress.

9. Security and Access

- **Role-based Access**: Features are protected so only students can access their own data, and only teachers can view/manage their students.

Summary:

The platform provides students with a rich set of features for tracking their learning progress, receiving feedback, accessing resources, and engaging with personalized learning plans. Teachers have tools to monitor, analyze, and support their students, while students benefit from analytics, feedback, and gamified elements like points and achievements. All features are protected by robust role-based access controls.

Teacher Features Overview

1. Dashboard & Navigation

- **Teacher Dashboard**: Central hub with real-time statistics, quick actions, and access to all teaching tools.
- **Sidebar Navigation**: Dedicated sidebar for teachers, including links to:
    - Overview
    - Quiz Management
    - Create Quiz
    - Quiz Templates
    - Student Analytics
    - Quiz Analytics
    - Feedback
    - Settings

2. Quiz Management

- **Manual Quiz Creation**: Teachers can create quizzes manually with custom questions and answers.
- **AI/PDF-based Quiz Generation**: Teachers can generate quizzes from PDF documents using AI.
- **Quiz Templates**: Access to reusable quiz templates.
- **Quiz List & Management**: View, edit, and manage all created quizzes.

- **Quiz Status**: Quizzes can be marked as draft, published, or archived.

3. Quiz Analytics

- **Overview Statistics**: General statistics about quiz performance.
- **Question Analysis**: Detailed breakdown of each question's performance, including:
  - Questions with no responses
  - Questions with high failure rates
  - Success rate visualization
- **Student Completion Tracking**: See which students completed or did not complete each quiz.
- **Visualizations**: Charts and graphs for quiz and question performance.

4. Student Analytics

- **Student List**: View all assigned students, with quick access to analytics and statistics.
- **Individual Student Analytics**: For each student, teachers can view:
  - Overall performance across all quizzes
  - Progress tracking over time (weekly, monthly, yearly)
  - Quiz attempt history

- Learning statistics (quizzes completed, average score, time spent, improvement)
    - Activity breakdown (quizzes, documents, videos, learning plans)
- **Comparison Tools**: Compare students' performance, time spent, and progress.

5. Feedback System

- **Individual Feedback**: Send feedback to students on quiz attempts, chapters, or modules.
- **Batch Feedback**: Send feedback to multiple students at once, grouped by performance (critical, at risk, stable, excellent, not attempted).
- **Feedback Replies**: Two-way communication—teachers can reply to student responses and vice versa.
- **Feedback Management**: View all sent feedback and manage replies.

6. Learning Statistics

- **Class-wide Statistics**: View aggregated statistics for all students (quizzes completed, average scores, time spent, improvement).
- **Historical Data**: Access class-wide and individual student statistics over time (weekly, monthly, yearly).

- **Charts & Visualizations**: Visualize trends and progress for the class and individual students.

7. Module & Chapter Management

- **Module Creation & Management**: Create, edit, publish, archive, and delete modules.
- **Chapter Management**: Add, edit, reorder, and remove chapters within modules.
- **Access Control**: Only the teacher who created a module/chapter can edit or delete it.

8. Resource Management

- **Course PDFs**: Upload, categorize, and manage course PDF documents.
- **Video Summaries**: Access and manage AI-generated video summaries for teaching materials.
- **Text Explanations**: Generate and review AI-generated explanations for text content.

9. Security & Access Control

- **Role-based Access**: Only users with the 'teacher' role can access teacher features.
- **Ownership Enforcement**: Teachers can only manage their own modules, chapters, and feedback.

10. Other Features

- **Leaderboard**: View student rankings and points.
- **Settings**: Manage account and teaching preferences.

Summary:

Teachers have a robust suite of tools for creating and managing quizzes, analyzing both class-wide and individual student performance, providing feedback, and organizing learning resources. The platform emphasizes data-driven teaching, with analytics and visualizations to help teachers identify trends, support students, and improve learning outcomes. All features are protected by strict role-based access and ownership controls.