

SOFTWARE REQUIREMENT SPECIFICATION OF E-LEARNING PLATFORM



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Introduction:

This document outlines the features and specifications of our platform, providing a comprehensive guide for development. Our E-Learning Platform is designed to cater the diverse needs of students, teachers, and administrators, fostering an interactive and dynamic online learning environment. From course enrollment and video uploads to secure user access and scalability, this SRS serves as the blueprint for creating a cutting-edge educational experience.

Purpose:

Our Platform is dedicated to revolutionising education by providing accessible, high-quality courses that cater to diverse interests and skill levels. Our platform aims to democratise learning, offering both free and premium courses to ensure that education is within reach for everyone. With a commitment to fostering a global community of learners, our expert instructors lead live classes, creating an interactive and collaborative learning experience. We believe in empowering individuals with practical skills and knowledge, supporting lifelong learning journeys.

Scope:

Our E-Learning Platform will empower teachers in content creation, enabling them to add courses and upload videos. Students can enroll, purchase courses, engage in quizzes, and ask doubts. Teachers will conduct live classes and address doubts. Administrators manage student and teacher records. The platform ensures a user-friendly experience, scalability, and robust security measures, fostering innovation, collaboration, and a dynamic learning environment.

Functional Requirements:

1. User Authentication and Authorization:

- Users (students, teachers, and admins) must authenticate securely.
- Differentiated access levels and permissions for each user role.

2. Student Functionalities:

- Ability for students to enroll in courses.
- Can Purchase courses.
- Take quizzes associated with enrolled courses.
- View and track their performance analytics.
- Utilize a doubt-resolution system for seeking clarification.

3. Teacher Functionalities:

- Add and manage courses with relevant details (name, description, etc.).
- Upload and manage educational videos.
- Schedule and conduct live classes.
- Assess aggregate student performance.
- Engage in doubt resolution to address student queries.

4. Administrator Functionalities:

- Manage student and teacher records.
- Resolve technical doubts.

5. Personalised course recommendation:

- Course based on students' interests.

Non-functional requirements:

1. Performance

- Real-time Data Updates
- Low Latency Execution for users

2. Security

- Secure Authentication and Authorization
- Data Encryption for sensitive information

3. Scalability

- Modular Architecture for Easy Integration of New Features
- Scalable Database Architecture

4. Usability

- Intuitive User Interface

System requirements (Users):

- **Device Compatibility:** Our platform is accessible on desktops, laptops, tablets, and smartphones, ensuring learners can engage with the content from their preferred devices.
- **Operating System:** Our platform is compatible with major operating systems, including Windows, macOS, iOS, and Android. Whether you are using a PC, Mac, iPhone, or Android device, you can seamlessly access our courses.
- **Web Browser:** For optimal performance, we recommend using the latest versions of popular web browsers such as Google Chrome, Mozilla Firefox, Safari, or Microsoft Edge. Ensure that your browser is updated to the latest version for the best user experience.
- **Internet Connection:** A stable and reasonably fast internet connection is essential for streaming video content, participating in live classes, and accessing interactive elements.
- **Hardware Requirements:** While our platform is designed to be lightweight and accessible, having a modern device with sufficient processing power and memory will enhance the overall performance. Ensure that your device meets the basic hardware requirements for smooth navigation and content playback.
- **Audio and Video:** Some courses may include multimedia elements, so having speakers or headphones and a functional microphone can enhance the learning experience, especially during live classes and interactive sessions.

System requirements (Developers):

- **Operating System:** Compatible with Windows, macOS, and Linux.
- **Web Browser:** Support for the latest versions of major browsers.
- **Database Management System:** MySQL.
- **Server Requirements:** PHP.
- **Programming Language:** JavaScript, PHP.
- **Security Protocols:** HTTPS for secure data transmission, and follow secure coding practices.
- **Authentication Mechanism:** Implement user authentication using Hashed passwords.

Constraints:

- Storage limit of database (as we will use free plan).
- Varying internet speeds and connectivity issues in different regions may affect the user experience.

Future implementation:

- Will implement the transactions through a secure payment gateway.
- Notifications to students via email regarding upcoming live classes.
- Live classes can be streamed on our platform itself.

We will use Evolutionary Model for development of our platform**Description:**

Evolutionary models in software engineering are iterative and incremental approaches that allow for the development of software systems through a series of iterations or releases. These models emphasize adaptability and flexibility, allowing for changes to be made throughout the development process.

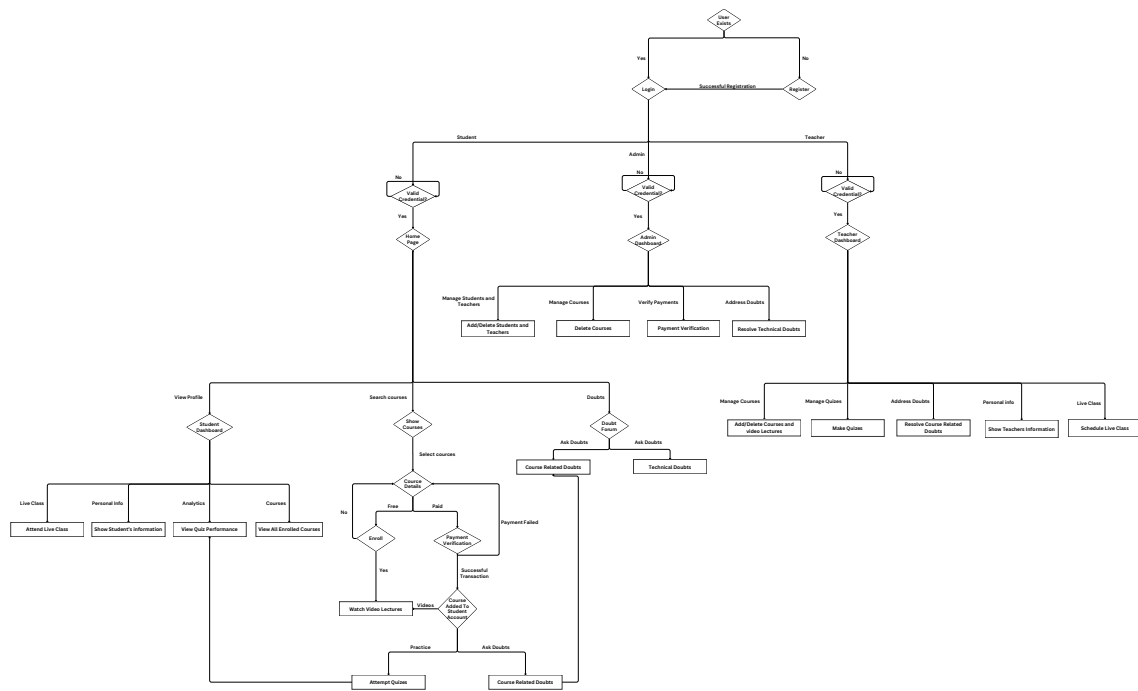
Strengths:

Adaptability to Changing Requirements.

Continuous Feedback.

Progressive Development.

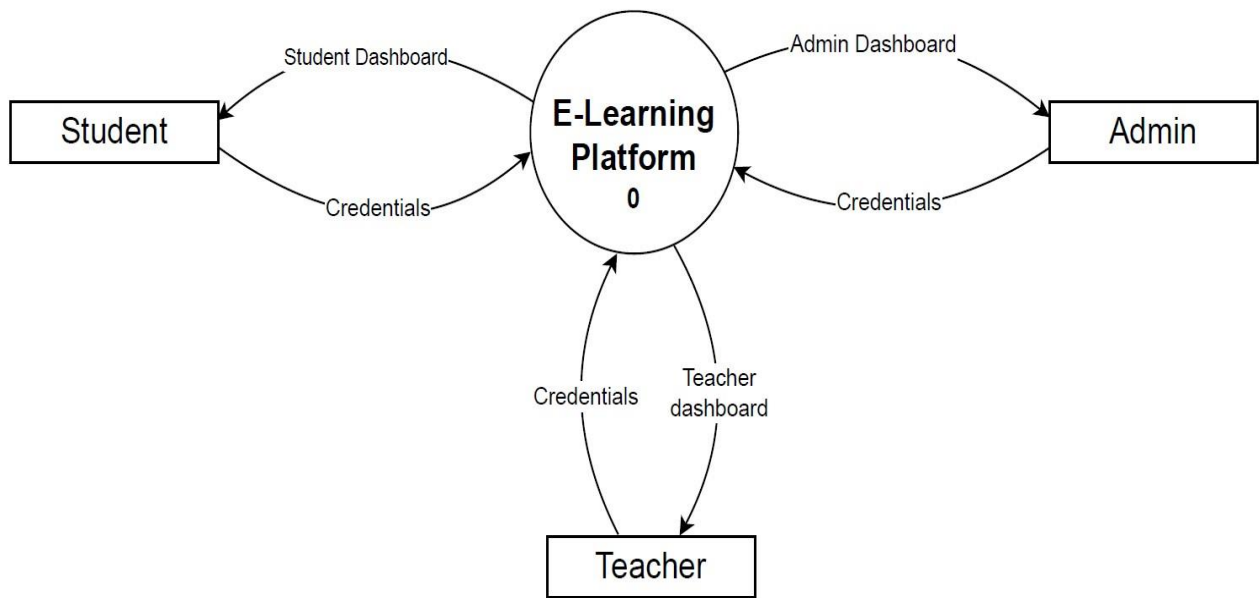
Decision Tree



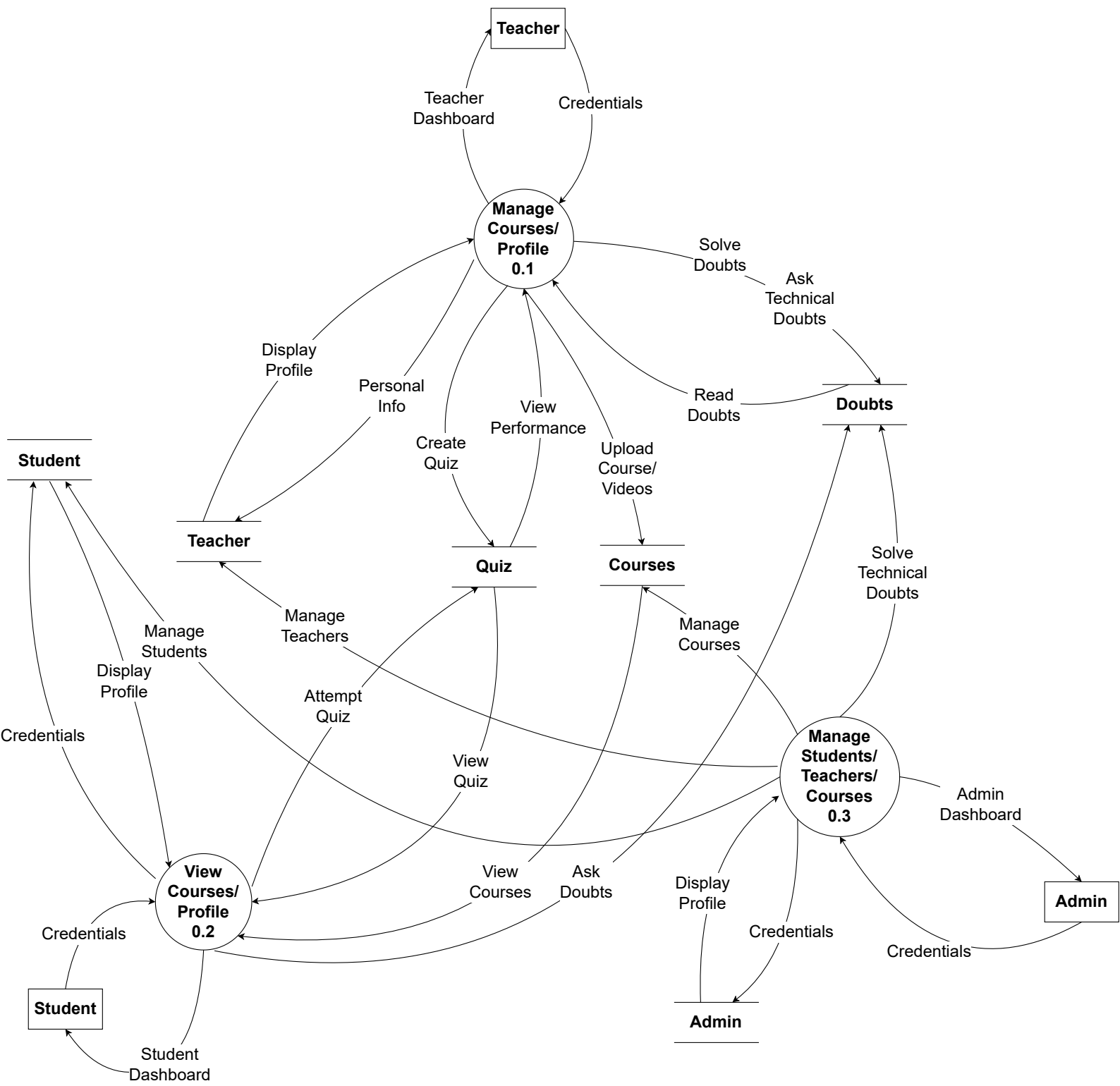
Decision Table for E -Learning Platform:

CONDITIONS	1	2	3	4	5
Unregistered User/Logged Out	YES	—	—	—	—
User (Student) Logged In	—	YES	YES	—	—
User (Teacher) Logged In	—	—	—	YES	—
User (Admin) Logged In	—	—	—	—	YES
Paid Course	—	YES	NO	—	—
Free Course	—	NO	YES	—	—
ACTIONS					
View Course Details	YES	YES	YES	YES	YES
Watch Video Lectures	NO	YES	YES	YES	YES
Attempt Quiz	NO	YES	NO	NO	NO
View Performance	NO	YES	NO	YES	YES
Rate the Course	NO	YES	YES	NO	NO
Attend Live Class	NO	YES	NO	YES	NO
Ask Course Related Doubts	NO	YES	NO	NO	NO
Ask Technical Doubts	NO	YES	YES	YES	NO
Upload Courses and Videos	NO	NO	NO	YES	NO
Schedule Live Class	NO	NO	NO	YES	NO
Resolve Course Related Doubts	NO	NO	NO	YES	NO
Create Quiz	NO	NO	NO	YES	NO
Manage Students/Teachers/Courses	NO	NO	NO	NO	YES
Resolve Technical Doubts	NO	NO	NO	NO	YES

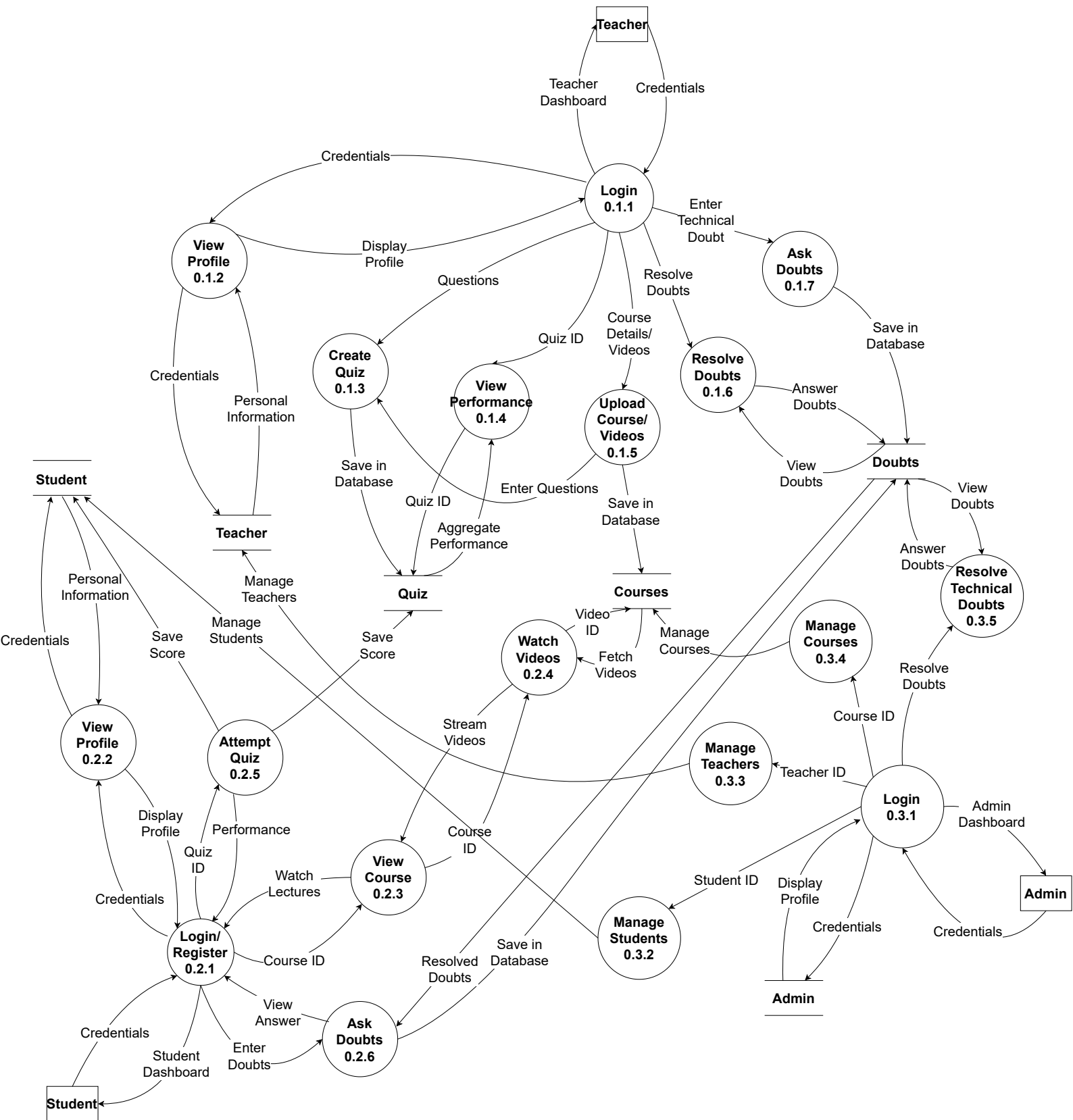
Level 0 Data Flow Diagram



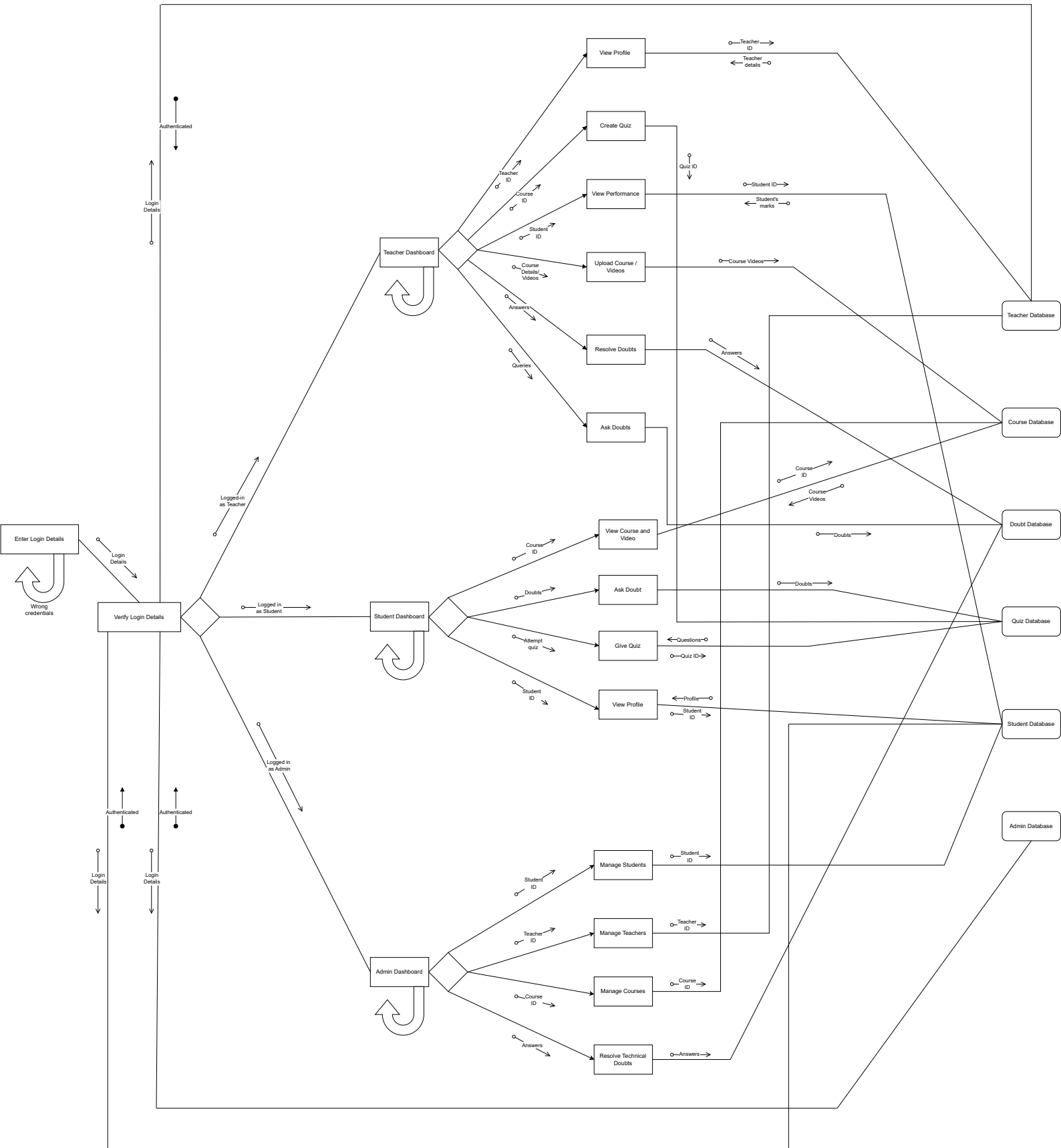
Level 1 Data Flow Diagram



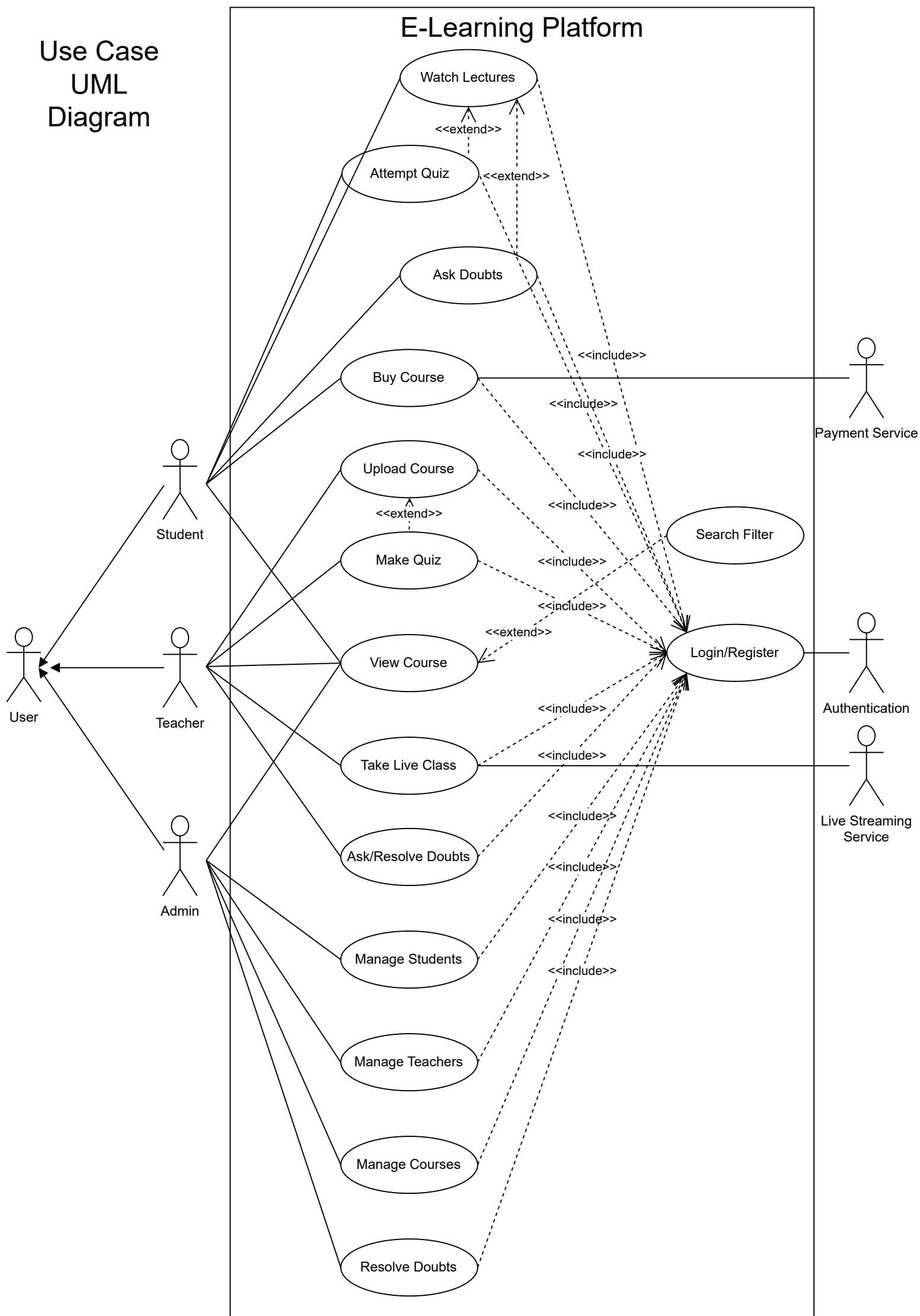
Level 2 Data Flow Diagram



Structure Chart



Use Case UML Diagram



Actors:

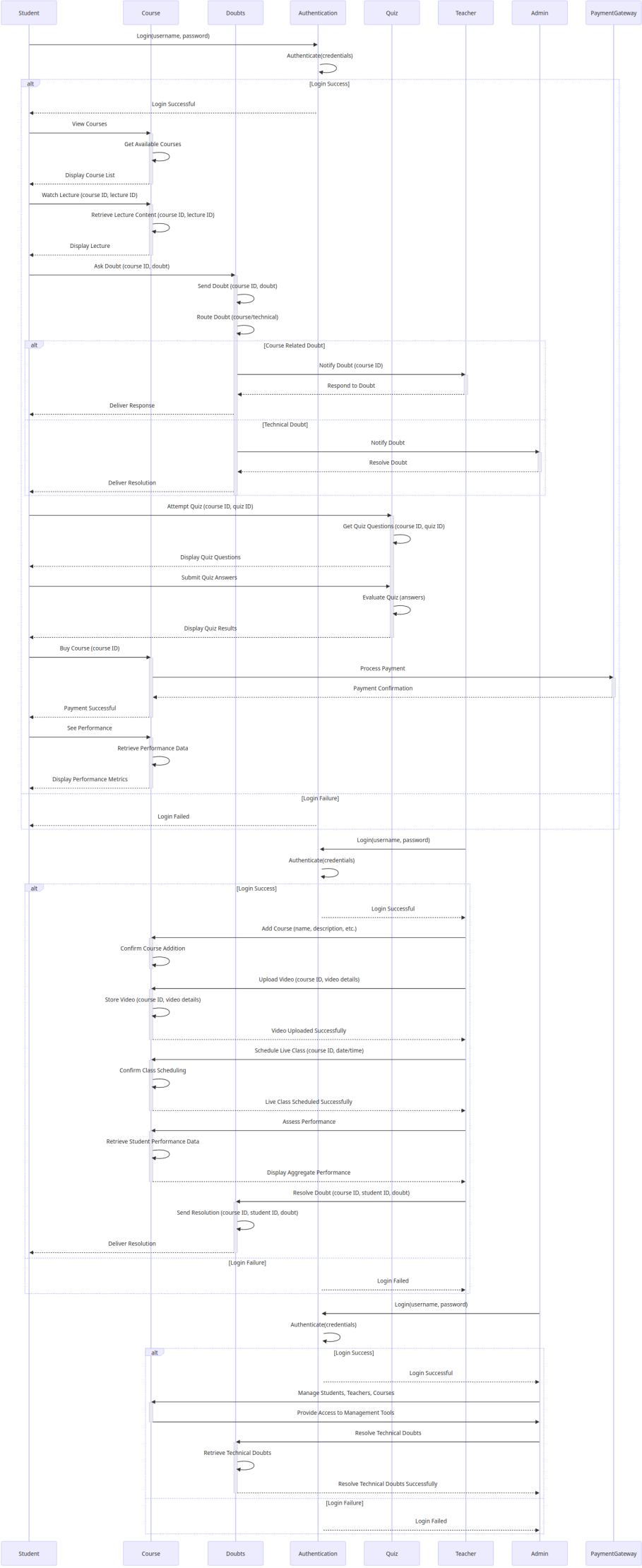
Student, Teacher, Admin

Use Cases:

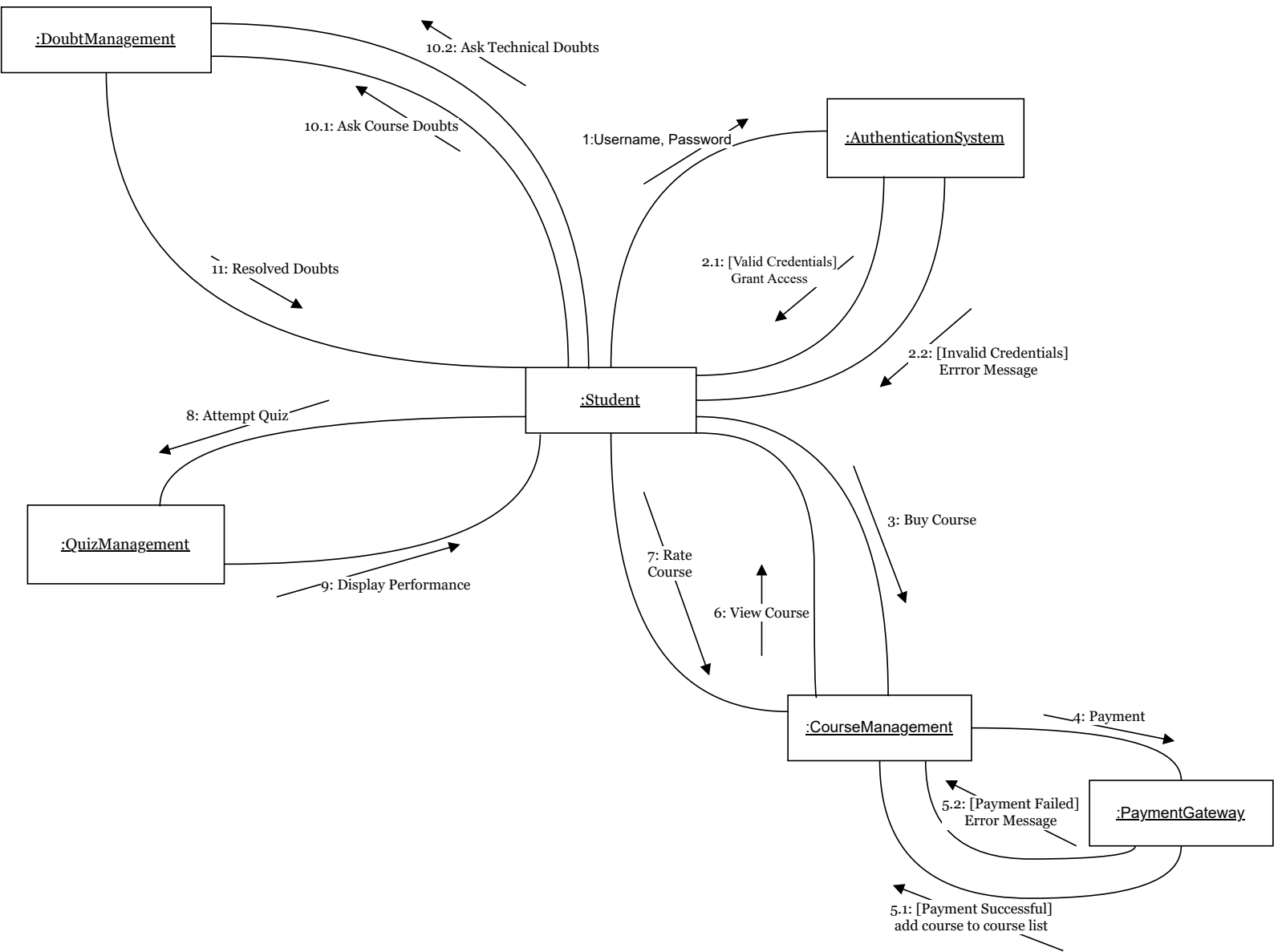
Watch Lectures, Attempt quiz, Ask Doubts, Resolve Doubts, Buy Course, Upload Course, Make Quiz, View Course, Take Live Class, Manage Students, Manage Teachers, Manage Courses, Search Filter, Login/Register.

External Systems:

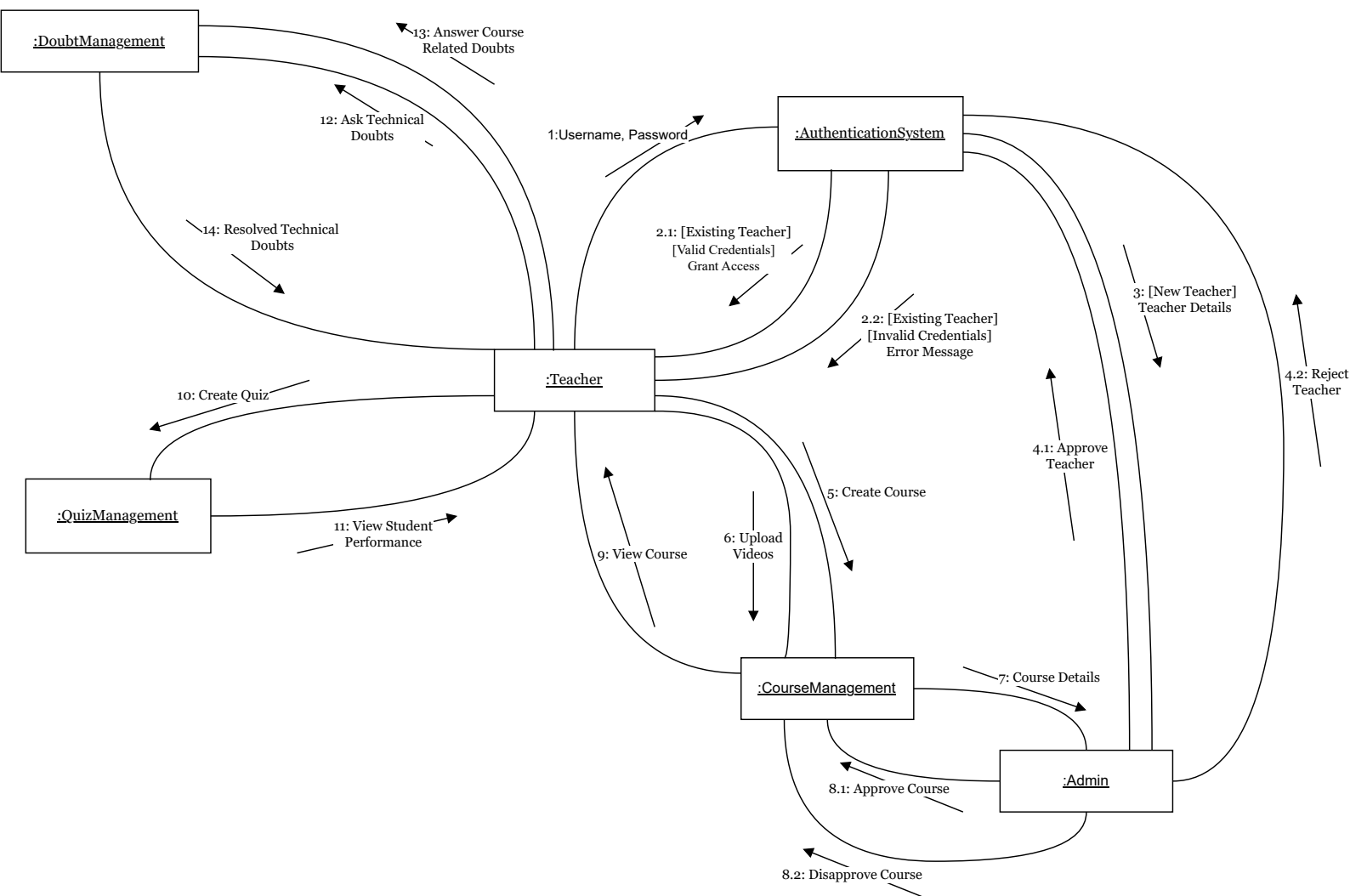
Authentication System, Live Streaming Service, Payment Service.



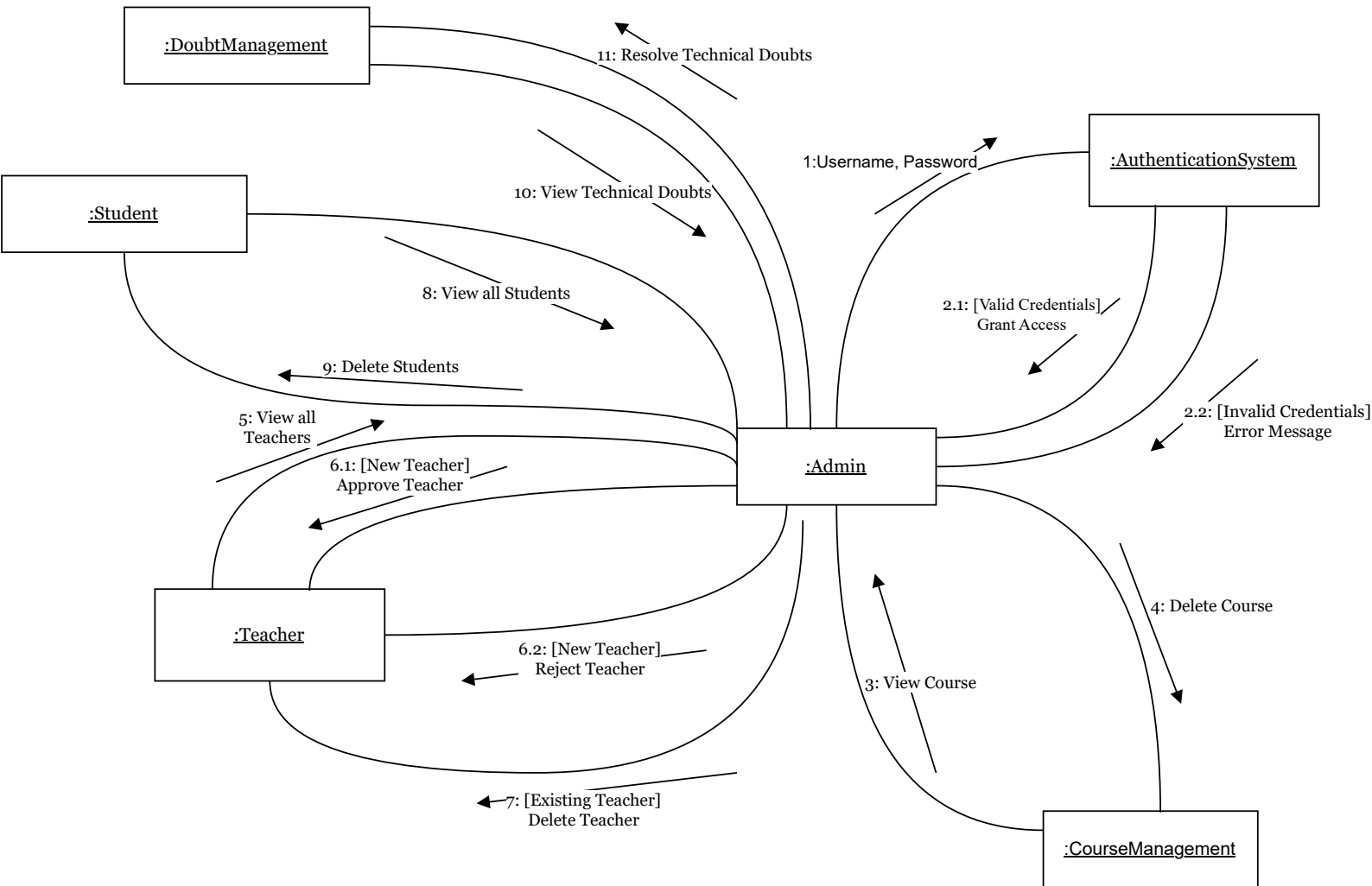
Collaboration Diagram: Student



Collaboration Diagram: Teacher



Collaboration Diagram: Admin



Update Section :

Date	Description	Page no
22-01-2024	First draft of SRS document	—
27-01-2024	Added personalised course recommendation	5
27-01-2024	Model changed to evolutionary model	9
08-04-2024	MySQL is used for database, Instead of Node Js, PHP is used	8