**Learning Management System (LMS)**

I agree with the proposed architecture and the use of the specified technologies and tools for the frontend, backend, and Firebase services. However, I would like to highlight and specify features within the components.

1. **Assignment and Exam Management Service:**

* It allows teachers to create and manage assignments and exams within courses.

**Key features:**

* Assignment Creation and Submission: Teachers can create assignments with due dates, and students can submit their work directly through the platform.
* Auto-Grading (if applicable): Set up a quiz for multiple-choice or automated question types that can be auto-graded using custom logic.
* Manual Grading and Feedback: Teachers can manually grade assignments/exams and provide feedback.

1. **Discussion Forum:**

* Enables students and teachers to engage in discussions related to courses.

**Key features:**

* Course-Specific Discussion Threads: Students can post questions, and teachers or peers can respond.
* Searchable and Moderated Content: Posts can be tagged and searched to specific students; teachers have moderation rights.
* Notifications for New Responses: Integrate with the Notification Service to alert users about replies or mentions.

1. **Resource Library**

* A central repository for learning resources, accessible to students.

**Key Features**:

* Content Organization: Allows teachers to upload additional materials (videos, PDFs, etc.) for each course.
* Searchable Library: Students can search for resources by keywords, course, or topic.
* Bookmarking and Favorites: Allows students to bookmark frequently used resources.

1. **Live Sessions and Virtual Classroom Integration**

* Facilitates live video sessions, webinars, and Q&A sessions.

**Key Features**:

* Scheduling and Notifications: Teachers can schedule live sessions; students receive reminders.
* Video and Chat Support: Incorporate video conferencing (e.g., Zoom, Google Meet, or custom solutions) and live chat for real-time interaction.
* Recording and Playback: Recorded sessions can be saved to Firebase Cloud Storage and accessed later (If we have enough storage in Firebase database free plan).

1. **Live Dashboard**

* Administrators and teachers insights into student progress and course engagement.

**Key Features:**

* Student Dashboard: Pending assignment of each enrolled courses with due date.
* Teacher Dashboard: Track individual progress, grades, and time spent on courses and quizzes.
* Admin Dashboard (only applicable if we have to add Admin role): Allow system-wide analytics, such as active users and course completion rates.

1. **Feedback and Support System**

* Gather feedback for continuous improvement and provide user support.

**Key Features:**

* Feedback Forms: Enable students and teachers to submit course feedback.
* Knowledge Base: Create a self-service portal with FAQs and troubleshooting guides.