Case Study

An online learning platform for teachers and students to join interactive live classes

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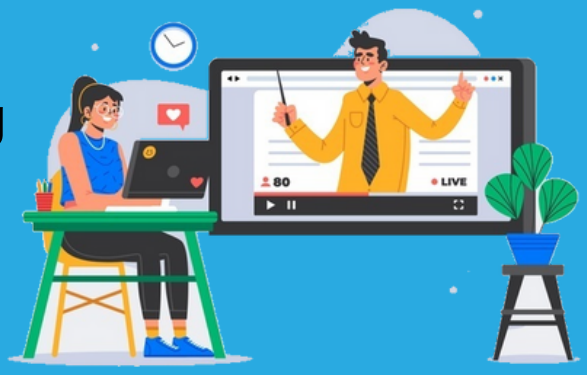
Case Study

Developing a full-fledged online learning platform for a South Asian client that enables students and teachers to join interactive live classes



Summary

We developed a full-scale online learning platform for students and teachers to join and conduct online classes, webinars, and interactive knowledge sessions. The solution focused on scheduling live classes via zoom links where students and teachers can interact through group chat. The application will record each live class attended by the student and store it on Amazon S3 cloud for easy offline access. Here, we designed and developed the frontend as well as the backend interface for students, teachers, and administrators, providing the given entities role-based access to different features. We shall have a detailed discussion on its workflow in the following section.

Industry
Education, eLearning

Users
Students, Teachers, Administrators

Tech Stack
React.js, Node.js, PostgreSQL, AWS cloud, Amazon S3

Team Size
8 Oodlites
(1 Project Manager, 1 Lead Backend Developer, 1 Frontend Developer, 1 QA Engineer, 1 UI/UX Designer)

Scope of Work (SoW)

The client sought our ERP development services to build a custom online learning platform for students and teachers. We were supposed to develop a dedicated backend interface for three main entities i.e students, teachers, and administrators and provide role-based access to various features. The backend user requirements were as follows:

Student: The app users registered as students must be able to browse through the available courses and enroll themselves for any given course. The registered students can attend online classes via zoom links and watch recordings of their previously attended classes on the dashboard.

Teacher: The users registered as teachers should be able to manage their respective courses, schedule online classes, and send zoom links to students accordingly. They can also manage their revenues directly from the dashboard (the earnings are subject to the number of students enrolled in the given courses).

Admin: Admin users will have full control over the courses available on the app. They reserve rights to add or remove courses as well as assign roles and classes to other users i.e teachers and students.

Below are the key requirements of our client for the given project:

1. Frontend Development
The client sought our expertise to develop the complete frontend application including UI/UX design and development.

2. Backend Development
They required dedicated backend interfaces for students and teachers as well as admin users with role-based access to select features.

3. Zoom Classroom Integration
The client required Zoom Classroom integration wherein students and teachers can join live online classes via Zoom links.

4. Storing Class Recordings To Amazon S3
The app should automatically record various online classes, subsequently moving all recordings to Amazon S3 bucket.

5. Live Chat Support
The project requirements included live chat support to facilitate seamless interaction between students and teachers during live classes.

6. Push Notifications
As soon as a new class is scheduled, both teachers and students should receive push notifications along with the Zoom link to join classes.

In addition to the aforementioned features, our client required dynamic content for the entire application manageable through the admin panel.

Solution

We deployed a team of 5 members including project manager, frontend/backend developers, UI/UX designer, and QA engineer to kick off the project in its initial phase.

Our team began with a careful assessment of the client's project requirements. To achieve the required functionalities, we used a tech stack consisting of React.js, Node.js, and PostgreSQL. Here, we used React.js for frontend development, Node.js for backend development, and PostgreSQL as a relational database management system. After finalizing the tech stack, our team formulated an effective execution strategy to carry out the development process in a phased manner.

We successfully achieved our client's requirements with the following deliverables:

1. Developed The Application Frontend

After finalizing the UI/UX designs, we developed the complete frontend interface of the application using React.js and JavaScript-based technologies.

2. Developed The Backend Interface For Different Users

We deployed a lead backend developer to build a feature-rich backend interface for students and teachers with role-based access to required features. Also, we used Strapi, an open source and fully customizable content management system to develop the admin panel for the given application.

3. Provided Auto Class Recording Functionality

Based on our client's requirements, we provided an auto-recording feature for Zoom classes. Besides, we provided AWS integration to automatically move class recordings to Amazon S3 bucket at the end of each session. Once moved to Amazon S3, the recordings will be available to both students and teachers under the courses section of their respective dashboards.

4. Provided The Functionality For Automatic Push Notifications

As per our client's requirement, we rendered push notifications support for both students and teachers. Both students and teachers will receive push notifications for upcoming classes along with the zoom links to join. Push notifications will be sent 90 minutes before the scheduled class timing.

5. Course Completion Certificate

Our solution will automatically generate student certificates after the successful completion of various courses. These certificates are manageable under the students' dashboard along with other documents and notes related to different courses.

6. Payment Gateway Integration

We provided payment gateway integration to facilitate secure online transactions through all major financial channels and payment methods. Our team rendered dynamic payment gateways that are fully configurable and manageable through the admin panel.

Results

We successfully completed the project within the stipulated time frame and delivered value to our client with the following results:

- We delivered a scalable learning management system while addressing all our client's requirements with advanced features such as live classes, auto-recordings, live chat, and more.
- We successfully achieved our client's requirements of moving the application data to Amazon S3 bucket including class recordings, notes, documents, and other information.
- The solution brought significant revenue growth to our client as a large number of users including both students and teachers joined the network.
- During the initial phase, they were able to drive 10,000+ user registrations and student enrollments for various courses.

About Oodles ERP

Oodles ERP is a software services company that offers complete enterprise software development services with a focus on implementing next-gen technologies. With a proven track record in custom ERP development, we have successfully completed 50+ software projects related to CRM, HRM, inventory/warehouse, eCommerce, supply chain, and logistics. We are mainly focused on helping startups and small-to-medium enterprises to achieve digital transformation through cost-effective ERP software solutions.

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