PES UNIVERSITY

(Established under Karnataka Act No. 16 of 2013)
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Capstone Project Report Phase - 2

on

Move Bridge

Submitted by

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March 2025 - June 2025

Under the guidance of

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FACULTY OF ENGINEERING
DEPARTMENT OF COMPUTER APPLICATIONS
PROGRAM - MASTER OF COMPUTER APPLICATIONS

Certificate

This is to certify that the project entitled

Move Bridge

is a bonafide work carried out by

NEHAL V(PES1PG23CA342)

in partial fulfilment for the completion of Capstone Project Phase - 2 work in the Program of Study MCA under the rules and regulations of PES University, Bengaluru during the period March 2025 – June 2025. The project report has been approved as it satisfies the academic requirements of the **4th semester MCA**.

Guide	**Chairperson**	**Dean - Faculty of Engineering & Technology**
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DECLARATION

I, **Nehal V**, bearing **PES1PG23CA342** hereby declare that the Capstone project Phase - 2 project entitled, **Move Bridge**, is an original work done by me under the guidance of Ms.Deepika D, Assistant Professor, PES University and is being submitted in partial fulfillment of the requirements for completion of Semester course work in the Program of Study MCA.All corrections/suggestions indicated for internal assessment have been incorporated in the report.

The plagiarism check has been done for the report and is below the given threshold.

I further declare that the work reported in this project has not been submitted and will not be submitted, either in part or in full, for the award of any other course.

Place: Bengaluru
Date :

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ACKNOLEDGEMENT

I take great pleasure in expressing my sincere gratitude to all those who have guided me and supported me to successfully complete this project.

I express my sincere gratitude to the Vice Chancellor of PES University, **Dr. J Suryaprasad** and Chairperson **Dr. Veena S**, who gave me an opportunity to go ahead with this project.

I am grateful to my guide, Ms.**Deepika D**, Associate Professor, Department of Computer Applications, who has been my source of inspiration and provided me with guidance, encouragement and support, during the course of the project.

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Abstract

Move Bridge is an interactive dance learning environment that incorporates role-based learning for students, mentors, and administrators in a convenient digital space. It provides students with categorized video tutorials in different dance styles, live class attendance, reward for achievements, and real-time communication with mentors. The platform enables learners to monitor their progress, resume at the point of interruption, and view mentor profiles based on ratings and specialities. By incorporating facets such as "Skill Swap" and chat-based engagement, Move Bridge fosters collaborative and personalized learning experiences designed to meet specific goals and preferences. For mentors, the platform offers capabilities to upload, catalog, and manage dance content, schedule live classes, communicate with students, and monitor analytics to assess teaching performance. Admins serve a supervisory function by approving mentors, moderating material, managing categories, and monitoring user activity. Intended to overcome the challenges such as geographical hindrances, economic limitations, and absence of mentorship in conventional dance learning, Move Bridge seeks to establish a scalable and inclusive environment for international dance enthusiasts, augmenting accessibility and participation in the performing arts sector.

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Introduction

Chapter 1

Introduction

An introduction typically consists of the following components:

1.0.1 Project Description

In today's digital age, access to good dance education is still limited, especially for those in distant or underserved areas. Conventional study settings are usually expensive, mentors are scarce, and geographical location is a problem that prevents many enthusiastic learners from becoming professional dancers or hobbyists. To overcome these challenges, Move Bridge was envisioned as an interactive web-based platform that engages students, mentors, and administrators as a networked community. The platform would deliver organized, cheap, and flexible learning opportunities for a diverse range of dance styles and levels of skill.

Move Bridge is constructed on role-based architecture, which ensures that every user whether a student, mentor, or admin—has a customized experience based on their requirements. Students can explore categorized video lessons (e.g., Hip-hop, Ballet, Contemporary), monitor their learning journey through progress analytics, and join live classes conducted by professional mentors. Furthermore, the platform also features like "Continue Watching," favorites list, and achievement systems to ensure engagement and motivation. These platforms promote regular practice and motivate learners as they achieve new levels in their dance progression. Mentors, however, possess robust tools to manage their teaching material.

1.0.2 Proposed Solution

To cater to the needs and constraints of learning through traditional dance education, Move Bridge offers a digital platform that enhances learning dance in a cost-effective, accessible, and engaging manner to users from all regions. The concept is to develop a role-based learning platform where students, mentors, and admins smoothly interact with one another using features built specifically to suit their needs. Learnxtra offers students access to a vast library of video tutorials in multiple dance forms, live classes, one-to-one interaction with mentors, and monitoring progress through in-built analytics and reward systems. This system prevents the boredom and lack of motivation that learners often experience through self-directed learning

Mentorship and collaboration are also given importance with students having the opportunity to interact with certified mentors on the basis of ratings, styles, and levels of experience. Through functionality such as live chat and the "Skill Swap" system, students may gain personal feedback and even swap dance moves with others. For mentors, the site offers functionality for uploading and managing tutorials, setting session schedules, monitoring student activity, and tracking teaching efficacy through performance metrics. Admins

keep the platform secure through managing categories, moderating content, and accepting new users

1.0.3 Purpose

The major goal of Move Bridge is to establish a single, inclusive, and interactive platform that closes the gap between novice dancers and experienced instructors using technology-based solutions. It seeks to revamp the conventional model of dance learning by providing flexible, affordable, and high-quality learning solutions over the internet. By using video tutorials, live classes, and real-time communication tools, the platform enables learners to follow their passion for dance without consideration of location, time, or economic factors Improve Access to Dance Training– Move Bridge seeks to break down geographical and economic obstacles by offering web-based access to quality dance lessons and guidance for students across the globe.

Facilitate Flexibility and Autonomous Learning– The website enables users to learn at their own pace with video courses on demand, live class booking, and tracking of achievements features Enhance Skill Building and Mentoring– Through linking students with qualified mentors, Move Bridge ensures individualized learning and mentorship, enhancing technical proficiency and creative development.

1.0.4 Scope

Move Bridge is designed to scale and be accessible on a global level, thus enabling it to accommodate an increasing number of users and increasing numbers of dance categories and styles. With its aggressive emphasis on usability, interaction, and performance, the platform is created to respond to varied learning requirements while facilitating ongoing development in the performing arts field.

The scope of Move Bridge includes designing a role-based web-based learning platform for dance for three main roles of Students, Mentors, and Admins. All three roles have different access levels and functionality to provide a seamless and personalized user experience. Students can browse categorized video lessons, join live dance classes, interact with mentors in real-time, monitor their learning history, and receive rewards for regular usage and achievements.

For the mentors, the platform offers features to load and maintain tutorial material, schedule and execute live sessions, interact with students over chat, and track performance using analytics panels. This benefits mentors not just to manage their teaching workflow effectively but also enhance the quality of teaching based on feedback and engagement levels. The system ensures that only qualified and approved mentors are recruited, ensuring the instructional integrity of the platform.

Literature Survey

Chapter 2

Literature Survey

2.1 Domain Survey

2.1.1 Introduction to the Domain

Introduction to the Domain Move Bridge project belongs to the interdisciplinary field of Education Technology, with a high emphasis on Performing Arts, especially dance. Over the last few years, technology has transformed education delivery by providing scalable and flexible solutions for learning in all areas. Performing arts, previously confined to physical studios and classrooms, are now slowly incorporating digital media so that training can be made more accessible, interactive, and engaging.

Dance as a work of art and a form of physical and emotional expression demands practice over time, professional instruction, and social interaction. Traditional education in dance, however, has its limitations in terms of cost, geographical location, and access to instructors. Incorporating education technology into the field of performing arts enables learners to address the aforementioned challenges through the use of digital media such as video tutorials, live streaming, analytics, and online interaction.

Why Move Bridge is Important to Educational Technology Move Bridge finds its place under the rubric of Educational Technology since it utilizes online tools and platforms to advance dance instruction and learning, a subject otherwise reserved for face-to-face delivery. Through the incorporation of components like video tutorials, live lessons, real-time interactions, and tracking of progress, the platform makes dance learning a flexible, accessible, and interactive online experience. It enables students to acquire organized knowledge, get expert feedback, and exercise on their own—all driven by technology. These functions closely map the fundamental objectives of educational technology: enhancing learning performance with contemporary tools and mechanisms.

Furthermore, Move Bridge promotes autonomous learning, peer-to-peer collaboration, and personalized guidance—important tenets in the realm of EdTech. Move Bridge utilizes systematic content management, interactive communication capabilities, and analytics to track performance and adjust learning according to individual requirements.

Key Insights from the Domain Survey The domain survey of Move Bridge identifies the growing prominence of education technology in optimizing traditional dance instruction as a more inclusive and engaging experience. With the emergence of online platforms, students can now breach geographical and economic boundaries, accessing quality content and guidance from any location. The survey points to increasing needs for flexible, self-directed learning aided by features like live classes, real-time interactions, and tracking of progress. It also discloses the significance of community formation and cultural interchange, for elec-

tronic environments facilitate various populations of learners and mentors to network and exchange information.

z' Move Bridge Becomes More Relevant to Educational Technology One can see a trend among dance schools and students of adopting online platforms for learning because of flexibility, global access, and ease of access. Conventional face-to-face training is increasingly being supplemented or replaced by virtual lessons and pre-recorded tutorials. Online platforms such as Move Bridge are pivotal in conserving and showcasing various dance forms by disseminating regional and traditional styles to a universal audience. This fosters cross-cultural exchange and learning across geographical spaces. Most current online dance learning options are disjointed—providing either casual content on social media or short-form paid classes. The market is lacking for a centralized, organized, and scalable platform such as Move Bridge that accommodates students, mentors, and admin functions. Today's learners prefer environments where they can learn at their own pace, track progress, and interact in real-time. Learning technology facilitates adaptive experiences that adapt to varying schedules, competencies, and learning modalities. Most platforms prioritize video-only content, losing the potential of community-based features such as peer-to-peer learning, mentorship, and collaborative sessions—areas where Move Bridge provides enormous value.

2.2 Literature Survey

2.2.1 Related Work

This entails reading journals and research papers. The following research papers are taken into consideration when conducting a literature survey.

1. Paper Title: Research on the Application of Virtual Reality Technology in Dance Teaching

Authors: Linde Yuan, Chenguang Nie

Publisher: Atlantis Press

Published in: Proceedings of IEIT 2022 – International Conference on Educational Innovation and Technology

Date:2023

2. Application of Dance Teaching Based on Computerized Audio and Video Processing Technology

Authors: anumala Kusuma

Publisher:ESR Journals

Published in: Journal of Engineering Sciences (JES)

Date:2024

3. AOnline Technologies in Dance Education

Authors: Yuhui You

Publisher:Taylor Francis

Published in: Research in Dance Education

Date:14 October 2020

4. Street Dancers Web Application

Authors: Veluguri Bhavitha Kumari, Yanumala Kusuma, Yashaswi Mantena, Shadan Jamshed

Publisher: IJARIIE

Published in: International Journal of Advance Research and Innovative Ideas in Education

Date:05-07 April 2024

5. Performing Arts Student Attitude Towards Dance Games as Thai Dance Training Tool

Authors: Yootthapong Tongpaeng, Akharawin Mahamud, Pradorn Sureephong

Publisher: IEEE

Published in: Proceedings of the 3rd International Conference on Digital Arts,Media and Technology

Date: 2018

6.Exploiting Annotated Video to Support Dance Education

Authors: Thrasyvoulos Tsiatsos, Eleni Stavridou, Athina Grammatikopolou, Stella Douka, Georgious Sofianidis

Publisher: IEEE

Published in: 2010 Sixth Advanced International Conference on Telecommunications

Date: 2010

7.A Qualitative Study on Online Dance Learning with Teacher-AI Cooperation

Authors: ThrasJiwon Kang, Chaewon Kang, Jeewoo Yoon, Houggeun Ji, Taihu Li, Hyunmi Moon, MinsamKo, Jinyoung Han

Publisher: journal Education and Information Technologies

Published in: Education and Information Technologies

Date: 4 March 2023

8.Students as Partners in Peer Mentoring: Expectations, Experiences and Emotions

Authors:Christina Seery, Andrea Andres, Niamh Moree-Cherry, Sara O'Sullivan

Publisher: Springer Nature

Published in: Innovative Higher Education

Date: 3 May 2021

9.Investigating the Current State of Affairs and Future Trends of Information Technology in Dance Education

Authors:Jiao Chen, Wencai Du, Simon Xu

Publisher: IEEE

Published in: 26th ACIS International Winter Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing (SNPD-Winter 2023)

Date: 5-6 July 2023

10.Research on the Optimization of Online Courses of Dance Education in Normal Universities

Authors:Shasha Li

Publisher: IEEE

Published in: 2020 International Conference on E-Commerce and Internet Technology (ECIT 2020)

Date: 2020

Hardware and Software Requirements

Chapter 3

Hardware and Software Requirements

3.1 Introduction

The hardware and software tools utilized in the creation and implementation of this project are thoroughly described in this chapter. Performance, scalability, and compatibility with the project specifications..

3.2 Hardware Requirements

A system with enough processing power is needed for the project in order to facilitate effective development, testing, and execution.

3.2.1 Minimum Hardware Specifications

The following table lists the **minimum hardware configuration** required:

Component	Specification
Processor	Intel Core i5 (or equivalent)
RAM	8GB
Storage	256GB SSD
GPU	Integrated GPU
Network Interface	Wi-Fi 802.11ac / Ethernet
Peripherals	Keyboard, Mouse, Display

Table 3.1: Minimum Hardware Requirements

3.2.2 Recommended Hardware Specifications

For optimal performance, the **recommended configuration** is:

3.3 Software Requirements

For the platform to be developed, tested, and run, a strong software infrastructure is necessary. In addition to offering effective data processing and robust authentication (for real-time

Component	Specification
Processor	Intel Core i5/i9 or AMD Ryzen 7/9
RAM	16GB or higher
Storage	512GB SSD or higher
GPU	NVIDIA RTX 3060 (for AI-based tasks)
Network Interface	Gigabit Ethernet / Wi-Fi 6

Table 3.2: Recommended Hardware Specifications

communications), it must be scalable and Compatibility with existing frameworks, databases, and deployment tools is necessary for seamless integration and performance optimization..

3.3.1 Software Requirements

The project was developed and tested on multiple platforms to ensure cross-platform compatibility.

Specification	Version
Frontend	React.ts(18.v),Tailwindcss(3.x)
Backend development,	NodeJS (v18.16.0 or higher),
DataBase	Firebase(v14.5.0)
Web Browser	Any
Development Tool	Visual Studio Code

Table 3.3: Software Requirements

Software Requirements Specification (SRS)

Chapter 4

Software Requirements Specification

4.1 USERS

Move Bridge is a platform that will cater to an array of users participating in dance teaching and performance, ranging from learners and teachers to system administrators and cultural institutions. With the demand for affordable, skill-oriented, and collaborative dance learning on the rise, particularly in our era of technology, Move Bridge offers an effective solution for students, mentors, and administrators to meet, learn, and develop within a well-organized and stimulating setting.

1.Dance Students and Learners Interactive Learning and Skill Development – Beginner to advanced-level students can avail categorised video tutorials, live classes, and mentoring according to their preference. The site gives students the power to learn independently, monitor progress, achieve badges, and interact with mentors depending on their dance style requirement and experience. It breaks geographical constraints through a virtual means by providing education in dance across the world.

2.Mentors and Dance Educators Professional dance mentors can post tutorials, plan live sessions, and track student interest through integrated analytics. The platform enables mentors to present their skills, engage with students in real-time, and help create a rich online dance community. Mentors can profile themselves, organize their content, and get feedback through likes, views, and student performance indicators.

3.Platform Administrators User and Content Management – Admins are responsible for running the operation of the platform, from approving mentor applications to content moderation and user management. Admins are critical in maintaining platform quality by keeping standards of content in check, managing dance categories, and monitoring system-wide analytics for performance measurement and platform scalability.

4.Performing Arts Academics and Institutions Extended Learning and Outreach –

Schools and performing arts schools can implement Move Bridge to supplement their curriculum with digital content. It offers a scalable solution for hosting online workshops, cross-cultural collaborations, and international dance exchanges, conserving and sharing various dance forms and making them more accessible.

5. Parents and Guardians Progress Monitoring and Involvement – For younger users, guardians and parents can also be considered secondary users who will ensure safe involvement of the child in live classes and track the child's learning progress, milestones, and involvement on the site.

4.2 Functional Requirements

- **Authentication System:** Move Bridge has an authentic authentication system where users sign up and log in according to their assigned roles—Student, Mentor, or Admin. Users create a unique profile with their name, bio, and dance specialties. Role-based access makes users view only features pertaining to their role, which adds security and usability. The system is also scalable for the future, separating permissions and functionalities by user type with transparency.

- **Student Dashboard:** The student dashboard has been developed to provide an engaging learning experience. Students are able to access dance tutorials by style like Hip-hop, Ballet, and Contemporary, monitor learning progress, and continue watching videos using the "Continue Watching" feature. Students are able to favorite videos for easy reference, achieve rewards and reward points, and get reminders through alerts. Moreover, students can find mentors, join live classes, interact with mentors in real-time, and organize their profiles and acquired rewards through the wallet feature.

- **Mentor Dashboard:**

  Mentors on Move Bridge get to access a special dashboard that allows them to effectively manage their educational materials and interactions with students. They can upload tutorials (such as integration with YouTube platforms), arrange their videos into categories, and schedule live classes without a problem. Mentors get to read and reply to messages from students, see individual student activity, and oversee their student list. Further, analytics built into the system yield important measurements like views on a video, likes, and engagement, which assist in measuring performance and developing better content delivery

- **Admin Panel:**

  Admin panel is the command center of the platform, where users, content, and categories are managed. Admins also get to approve or decline mentor applications to

maintain content quality and instructor credibility. They can see and administrate all the users on the site, moderate uploaded videos, and monitor real-time platform activity. Category management enables them to add or edit dance styles to support increasing content diversity. An in-depth analytics dashboard allows admins to see platform-level figures, which assist them in monitoring patterns of usage and taking data-driven decisions regarding system scalability and enhancement.

- **Skill Swap:**

  Move Bridge innovates the idea of collaborative learning with its Skill Swap feature. With this feature, users—both mentor and students—can swap their dance knowledge with each other. For example, a user with the skill for Hip-hop can provide customized classes in exchange for learning Contemporary dance from another user. Through this peer-to-peer sharing, not only is mutual learning created but also a lively, dynamic dance community that promotes stylistic and cultural diversity.

- **Search and Filter:**

  In order to increase user satisfaction and content accessibility, the site features robust search and filtering capabilities. Learners can search for dance tutorials or coaches based on criteria like dance style, skill level, category, instructor rating, or keywords. The filters guarantee that learners have access to content that pertains to their interests and current skill level within a very short time, enhancing navigation efficiency and satisfaction.

- **Reward and achievement:**

  The Reward Wallet records the points and rewards that a student earns along the learning process—like watching videos, participating in live classes, or achieving milestones. This gamification aspect acts as a motivation driver by acknowledging learner progress and commitment. Along the way, this wallet can be coupled with real-world incentives like certificates, premium content access, or mentorship feedback.

- **Notification System:** Move Bridge contains a real-time notification system that informs users of significant updates, for example, new mentor messages, scheduled live class calendars, mentor approvals, and new video uploads. This helps to keep users engaged, up to date, and punctual in their actions, which increases the responsiveness and interactivity of the site.

- **Real Time Chat System:**

  A pre-built real-time chat function enables students to message mentors individually for guidance, feedback, or discourse. This individual communication closes the gap be-

tween learners and educators, fostering prompt clarification, relationship development, and more tailored guidance.

- **Live Class Integration:**

  Mentors may arrange and have live dance lessons on platforms such as Google Meet, and session information—date, time, subject, and link—handled through Move Bridge. Students can access such sessions from their dashboards themselves, building a rich virtual classroom space for real-time learning and feedback on performance.

4.3 Non-Functional Requirements

- **Scalability:** Move Bridge needs scalability to expand with its growing user base. The system should be able to host a growing number of students, mentors, videos, and live sessions without degrading performance. It uses cloud-based technologies such as Firebase to automatically scale resources according to demand. With the platform hosting 100 or 10,000 users, backend operations including authentication, database read/writes, and storage remain reliable. Content delivery system hosts expanding media libraries, providing seamless access to new live sessions and tutorials. The architecture hosts these additions efficiently as the system introduces more categories and languages.

- **Reliability:**

  The Move Bridge platform is designed for high reliability so that services are available to users consistently. With an aim to achieve an uptime of at least 99.9 percent, core features such as video playback, user login, chat, and live sessions are always monitored. Redundant cloud infrastructure reduces the likelihood of outages or service outages. Backups of user progress, chat history, and uploaded material are regularly taken to safeguard against loss of data. Mechanisms for fail-safe recovery are implemented in case of unexpected system crashes or connectivity problems. When there is a minor failure, users are redirected automatically to fallback alternatives to prevent disruption.

- **Security:**

  Security comes first in Move Bridge, particularly as it deals with sensitive user information and real-time messaging.

  The platform employs Firebase Authentication with encrypted transfer of data via HTTPS to secure login credentials and session information. Role-based access provides users with only access to features that pertain to their profile (e.g., students cannot view admin tools). Firestore rules and server-side validations keep unauthorized access

or tampering of content from occurring. Chat interfaces and mentor messages are secured against usual attacks such as spam and injection.

- **Usability:**

  The usability of Move Bridge is a major component of its success. The interface is intuitive, easy to use, and user-friendly to all ages, both beginners and non-technical individuals. The interface employs clean layouts, consistent icons, and rational workflows to provide seamless interactions. Whether viewing videos, planning classes, or messaging mentors, the layout accommodates a natural workflow. Tooltips, onboarding, and explicit labels facilitate new users to start without perplexity. Role-based accessibility to features, that is, each type of user views only what they require, eliminates clutter. Usability testing guarantees the experience is delightful and frictionless everywhere. The platform is responsive to varying screen sizes and resolutions and remains usable on mobile phones, tablets, and desktops.

- **Maintainability**

  Maintainability is guaranteed through use of best practices in software architecture, such as modular design and clean code principles. The Move Bridge codebase is version-controlled and well-documented, making it possible for developers to update, enhance, or correct with low risk. Every module (e.g., authentication, video player, chat, notifications) is autonomous, making maintenance easy. The changes in one area of the system do not harm others. Automated testing suites are put into place to identify errors early in development. Continuous monitoring of logs and error reports is done for pre-emptive issue correction. The platform is constructed with popularly used technologies, allowing new developers to easily contribute or expand the team. This maintainability over the long haul provides stability for the system and lowers total cost of ownership.

- **Performance**

  Move Bridge is designed for peak performance to provide a seamless and responsive user experience. Sites load rapidly, even with high-definition media content, and users are able to stream video with minimal buffering pauses. Realtime features like chat, live class scheduling, and notifications are low-latency enabled to preserve interaction continuity. Frontend and backend performance tuning guarantees responsiveness under different network conditions. Server-side optimizations and cache strategies ensure repeat users minimize load times. The system is tested to support bursts of user traffic during peak class time or live events. Live sessions of the application ensure stable quality when multiple participants join at once. By providing consistent speed and responsiveness, the platform ensures user retention and satisfaction.

System Design

Chapter 5

System Design

5.1 Architecture Diagram

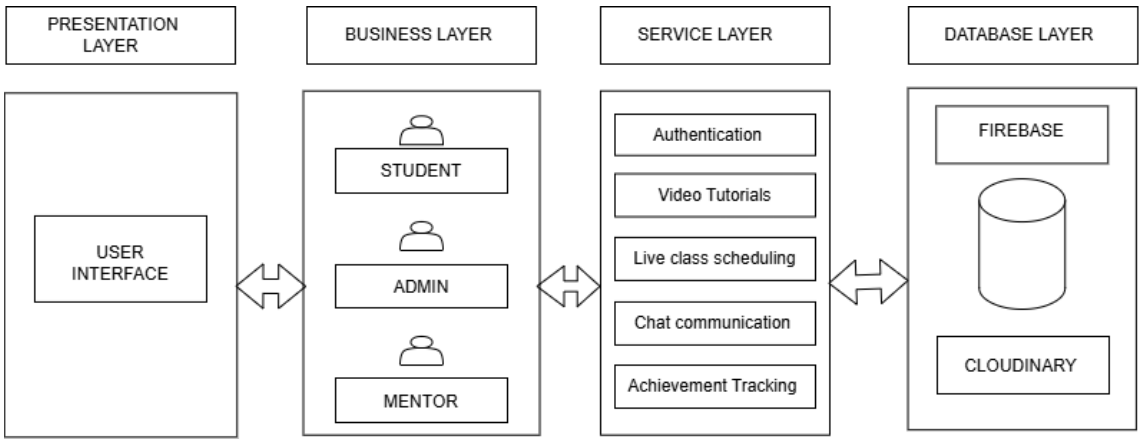

Figure 5.1: Architecture Diagram

The architecture diagram illustrates a layered representation of the Move Bridge.

Presentation Layer: The Presentation Layer is the user interface that the user directly accesses. It comprises the user dashboard, as well as interface components for students, mentors, and admins. This layer's main functions are to present information, receive user input, and offer navigation throughout the platform.

Business Layer: The Business Layer processes the core logic and user-role-dependent actions of the platform. It determines how students, mentors, and admins interact with system features. For example, students are able to view tutorials and monitor progression, mentors are able to control their content and schedule classes, while admins are able to approve users and monitor activity.

Service Layer: The Service Layer is the functional backbone of the application, processing all service-based actions. It comprises essential services such as authentication, video tutorial handling, scheduling for live classes, chat communication, and tracking of achievements. These services perform the actual processing involved for business logic as well as for data manipulation. This layer provides real-time responsiveness, predictable performance, and integration with third-party tools such as Google Meet. It handles close interaction

with the Database Layer to retrieve and update data when necessary. Database Layer: The Database Layer stores, retrieves, and maintains all data utilized in the platform. Firebase is employed for structured data such as user profiles, chat history, and progress tracking, while Cloudinary is employed for media storage, i.e., dance video tutorials and mentor profile pictures. It maintains data consistency, reliability, and quick access throughout the system. It caters to the dynamic content requirements of the platform while ensuring data security and scalability.

5.2 Data Flow Diagram

5.2.1 Context Flow Diagram

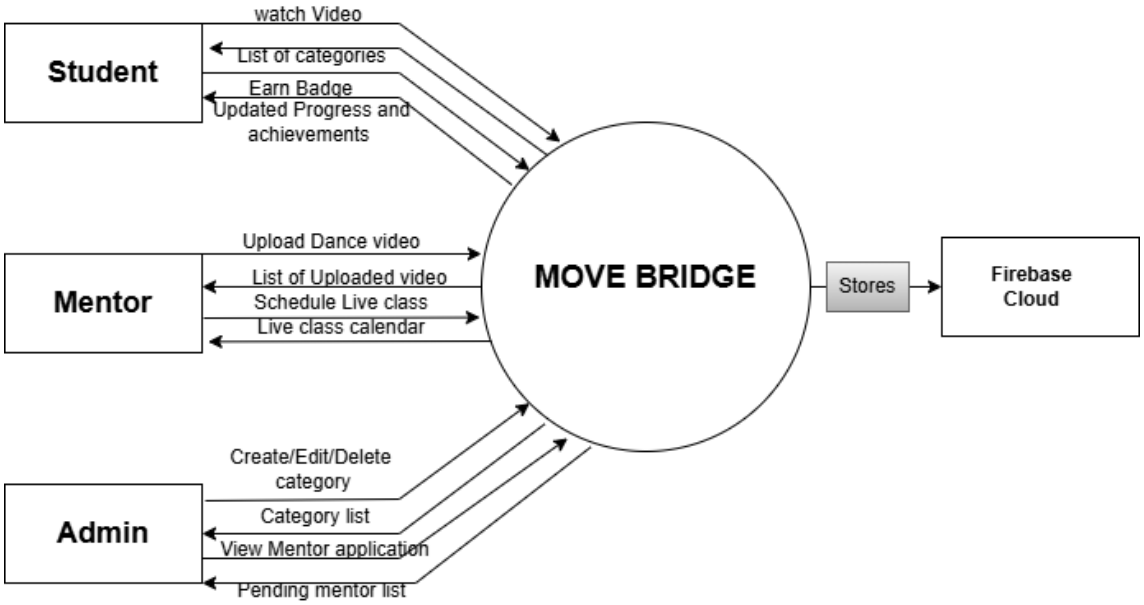

Figure 5.2: Context Diagram

The diagram depicts the functionality of the MOVE BRIDGE platform, which connects Students, Mentors, and Admins as the primary users. The Students are able to browse a list of dance genres, view videos, monitor their progress, collect badges, and see their achievements. The Mentors are able to upload dance videos, view their own uploaded videos, schedule live classes, and control their live class calendar. Admins take care of the backend administration, such as creating, editing, and removing dance categories, listing categories, and handling mentor applications. They also keep a list of pending mentor requests for approval. All the interactions between the users and the platform are stored and handled using Firebase Cloud, allowing for easy data handling and real-time updating.

Detailed Design

Chapter 6

Detailed Design

6.1 Use Case Diagram

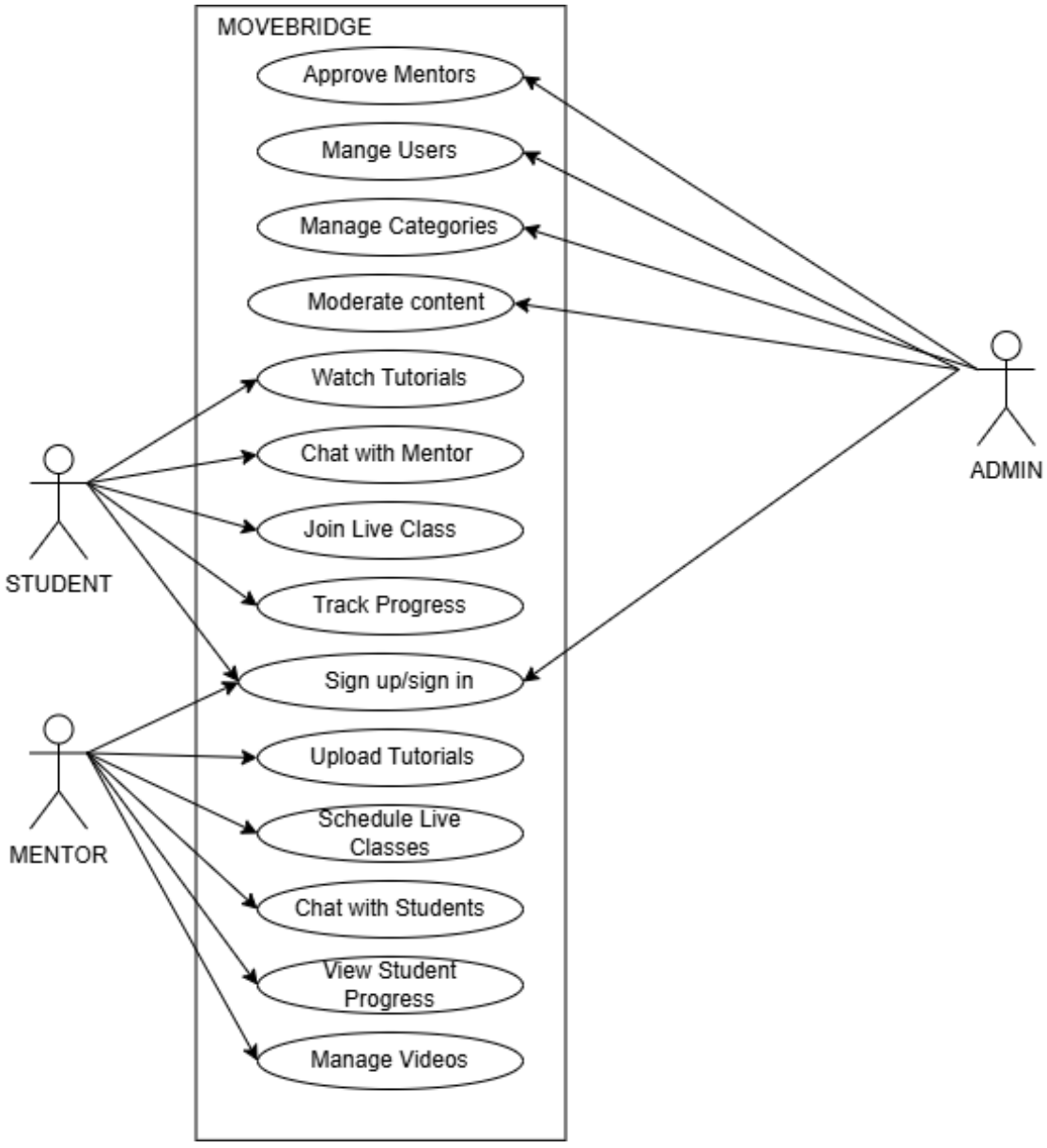

Figure 6.1: Use Case Diagram

The use case diagram depicts the various features of the MOVE BRIDGE platform and through which functionalities they are accessed by three main actors: Admin, Student, and Mentor. The core management aspects are controlled by Admins, including the approval of mentors, management of users, categories, and content moderation. Students may access functionalities such as signing up or logging in, viewing tutorial videos, messaging mentors, participating in live classes, and monitoring progress. Mentors, however, can register/login, upload tutorial videos, schedule live classes, interact with students, handle uploaded videos, and access student progress. This diagram demonstrates each user's role and his/her interactions with the system effectively, highlighting how MOVE BRIDGE is a centralized platform for learning dance, mentorship, and managing content.

6.2 Block Diagram

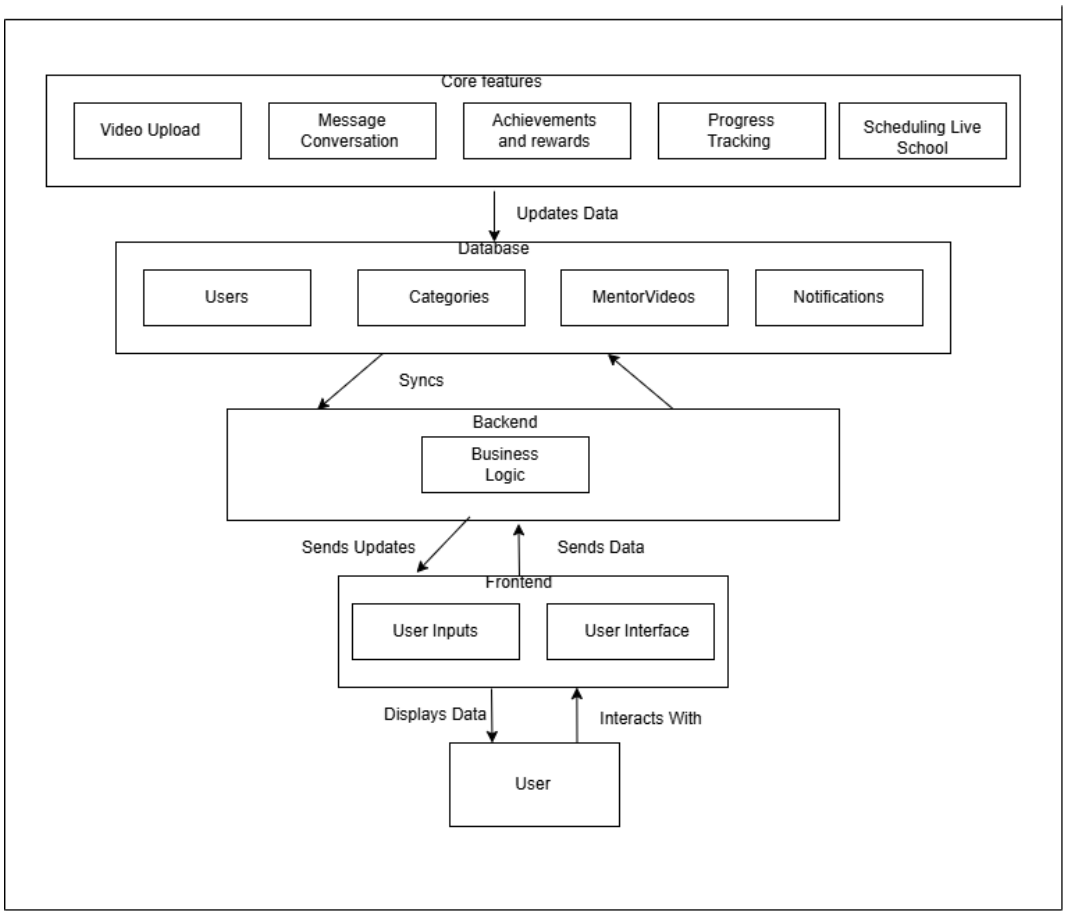

Figure 6.2: Block Diagram

Main Workflow The workflow starts with a Start node and proceeds to the User Login step.

Core Features: This block comprises the core functionalities offered by the platform: Video Upload, Messaging, Achievements and Rewards, Progress Tracking, and Scheduling Live Classes. These features outline the user interactions and system capabilities of prime importance.

Database: The database is where the important platform data is stored and kept organized, such as user profiles, category data, mentor videos, and notifications. All core feature updates are stored here.

Backend(Business Logic): The backend runs and handles the logic linking frontend and database. It manages how data moves, maintains proper rules, and synchronizes the database with frontend requests.

Frontend: Supports inserting messages The frontend is made up of two parts: User Inputs and User Interface. It serves to connect the user to the backend, transmitting user actions (inputs) and processing data (UI updates).

User Interaction: The end-user interfaces with the frontend directly. Depending on what they input, the frontend will send information to the backend and the backend will return updated information. This final output is then presented to the user through the interface.

This process of workflow guarantees seamless communication between the users and the system, with effective data handling, live updates, and easy-to-use interaction.

6.3 Activity Diagram

This diagram provides an end-to-end process of the Move Bridge, indicating how the users interact with the system:

The activity diagram illustrates the Sign-Up and Registration module of the MOVE BRIDGE platform, indicating how the users are onboarded as per their chosen roles—Student, Mentor, or Admin. The process starts when a user opens the sign-up page and inputs their basic information. Then, they have to decide on their role. If the chosen role is anything but "Mentor," the system automatically goes ahead and constructs a minimal user profile. But if the user chooses to be a Mentor, another level of validation comes into play. The mentor first applies, and the application is evaluated by the Admin. If the admin rejects the application, a notification is sent to the user, and the process ends there. Activity diagram depicts the flow-by-step procedure of how users register and establish profiles on the MOVE BRIDGE platform.

The process initiates when a user opens the sign-up page and provides their basic details. A significant step in this workflow is role selection, in which users have to decide whether they are signing up as a Student, a Mentor, or an Admin. For Admins and Students, the system goes ahead and creates a user profile immediately. But in case the role selected is Mentor, the site needs an extra layer of verification—mentors are required to provide a

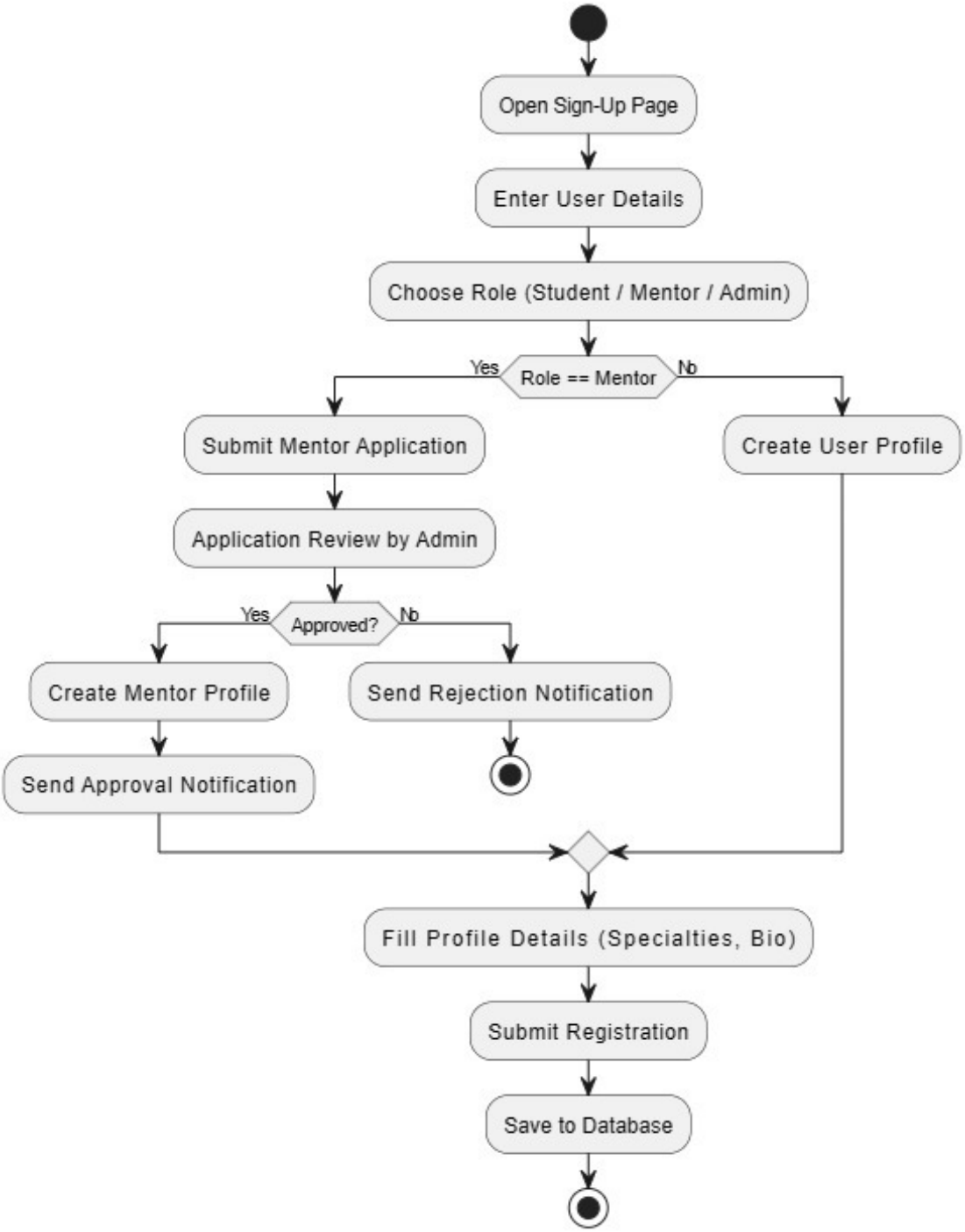

Figure 6.3: Activity Diagram

formal application that will then be vetted by an Admin. This makes it such that only authenticated users can reach the mentor-level functionality. Once the Admin has approved the mentor application, the system stores a mentor profile and sends an approval notification to the candidate.

If the application is declined, a decline message is sent, and the process for this user stops there. After the profile is established (for all permitted roles), the user is then asked to complete additional profile information like their specialties, bio, or qualifications. These provide additional personalization and make the user's role-specific features more pertinent.

Implementation

Chapter 7

Implementation

7.1 Pseudocode

7.1.1 i. Student /User Dashboard

```
BEGIN

  ON COMPONENT LOAD:
    FUNCTION fetchTutorials
      SEND request to '/videos' API
      RECEIVE response as JSON
      STORE result in tutorials list
    END FUNCTION

    CALL fetchTutorials

  END ON LOAD

  FUNCTION filterTutorialsByCategory(tutorials,selectedCategorry)
    CREATE empty list filteredTutorials

    FOR EACH tutorial IN tutorials
      IF tutorial.category EQUALS selectedCategory
        ADD tutorial TO filteredTutorials
      END IF
    END FOR

    RETURN filteredTutorials
  END FUNCTION

  SET displayedTutorials = filterTutorialsByCategory(tutorials, selectedCategory)
```

```
  DISPLAY displayedTutorials ON UI

END
```

7.1.2 Track Learning Progress

```
BEGIN

  // Fetch total available tutorials
  GET tutorialsList FROM server
  SET totalTutorials = LENGTH of tutorialsList

  // Fetch user's completed tutorials
  GET userCompletedList FROM userProgress data
  SET completedTutorials = LENGTH of userCompletedList

  // Calculate progress percentage
  IF totalTutorials > 0 THEN
    SET progressPercent = (completedTutorials / totalTutorials) * 100
  ELSE
    SET progressPercent = 0
  END IF

  // Display progress bar with calculated percentage
  CALL renderProgressBar WITH progressPercent

  // When a user completes a tutorial
  ON tutorialCompleted EVENT:
    ADD tutorial TO userCompletedList
    RECALCULATE progressPercent
    UPDATE progress bar display

END
```

7.1.3 MENTOR DASHBOARD - Upload and Manage Dance Tutorials

```
BEGIN
```

```
  // Step 1: Mentor fills the form
  ON Form Input:
    CAPTURE title
    CAPTURE description
    CAPTURE category
    CAPTURE video file
    STORE inputs temporarily

  // Step 2: On form submission
  ON Submit:
    CREATE new FormData object
    ADD video file to FormData

    // Step 2a: Upload video to cloud storage
    SEND POST request to video hosting API (e.g., Cloudinary)
      INCLUDE FormData in request
    RECEIVE response WITH video URL

    // Step 2b: Save metadata to backend
    CREATE tutorial object:
      - title
      - category
      - description
      - videoUrl (from upload response)
      - uploadedBy (mentor's user ID)
    SEND POST request to backend API (/videos/id) WITH tutorial object

  // Step 3: After upload, display tutorials
  FETCH uploaded tutorials FROM backend
  DISPLAY tutorials IN table format

END
```

7.1.4 View Student Progress

```
BEGIN


  ON COMPONENT LOAD:
```

```
    FUNCTION fetchProgressData
      SEND GET request to backend at /id/progress with mentorId
      RECEIVE progress data (list of students and their tutorial progress)
      STORE data in progressData
    END FUNCTION

    CALL fetchProgressData

  // Group progress by each student
  FOR EACH student IN progressData:
    GROUP watched tutorials under that student
    CALCULATE completionPercent = (watchedTutorials / totalTutorials) * 100

  // Display in table
  FOR EACH student:
    DISPLAY studentName
    DISPLAY completionPercent
    DISPLAY list of watched tutorials

END
```

7.1.5 ADMIN DASHBOARD – APPROVE MENTORS

```
BEGIN

  // Step 1: On component load, fetch pending mentors
  FUNCTION fetchPendingMentors
    SEND GET request to backend at /users/pending
    RECEIVE list of mentors awaiting approval
    STORE list in pendingMentors
  END FUNCTION

  CALL fetchPendingMentors ON PAGE LOAD

  // Step 2: Display each mentor with Approve / Reject buttons
  FOR EACH mentor IN pendingMentors
    DISPLAY mentor name and details
    DISPLAY "Approve" and "Reject" buttons
```

```
    ON CLICK "Approve":
      CALL approveMentor WITH mentor.id

    ON CLICK "Reject":
      CALL rejectMentor WITH mentor.id

  // Step 3: Approve mentor function
  FUNCTION approveMentor(mentorId)
    SEND PUT request to /users/{mentorId}/approve
    ON success:
      REMOVE mentor from pendingMentors list
  END FUNCTION

  // Step 4: (Optional) Reject mentor function
  FUNCTION rejectMentor(mentorId)
    SEND PUT or DELETE request to /users/{mentorId}/reject
    ON success:
      REMOVE mentor from pendingMentors list
  END FUNCTION

END
```

7.1.6 VIEW PLATFORM STATISTICS

```
BEGIN

  // Step 1: On component load, fetch platform statistics
  FUNCTION fetchPlatformStats
    SEND GET request to backend at /video/stats
    RECEIVE statistics data:
      - total users
      - total mentors
      - total tutorials
      - total sessions
    STORE data in stats variable
  END FUNCTION

  CALL fetchPlatformStats ON PAGE LOAD

  // Step 2: Display summary cards
```

```
  DISPLAY DashboardCard WITH:
    - Title: "Total Users", Value: stats.users
    - Title: "Total Mentors", Value: stats.mentors
    - Title: "Total Tutorials", Value: stats.tutorials
    - Title: "Total Sessions", Value: stats.sessions

  // (Optional) Step 3: Display charts for visual insights
  IF charts are enabled THEN
    GENERATE and DISPLAY bar/pie/line charts USING stats data

END
```

7.2 Implementation Screenshots

7.2.1 Landing Page

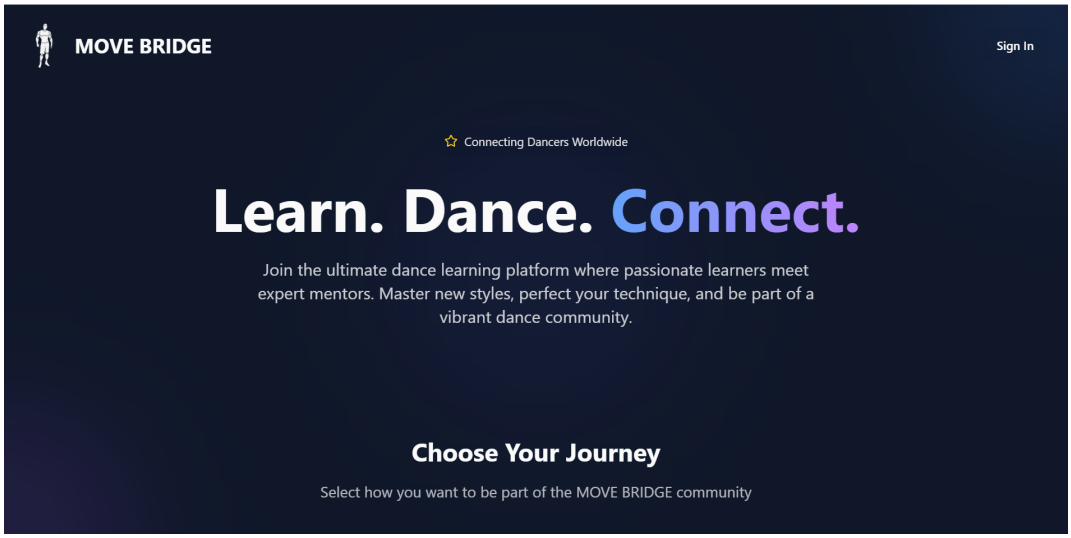

Figure 7.1: Landing Page

In Figure 7.1 The Move Bridge landing page presents the platform as a vibrant and interactive hub for dance learners and mentors. With the bold motto "Learn. Dance. Connect.," it vigorously indicates the central aim of facilitating enthusiastic learners to improve through professional mentorship. The page focuses on international unity with the declaration "Connecting Dancers Worldwide," establishing a feeling of belonging. Users are invited to select their role and start their journey in the lively dance community. The uncluttered design, clear typography, and prominent Sign In feature make the layout accessible and professional. Overall, the landing page establishes an energetic and friendly tone that reflects the innovative and communal nature of the site.

7.2.2 Login Page

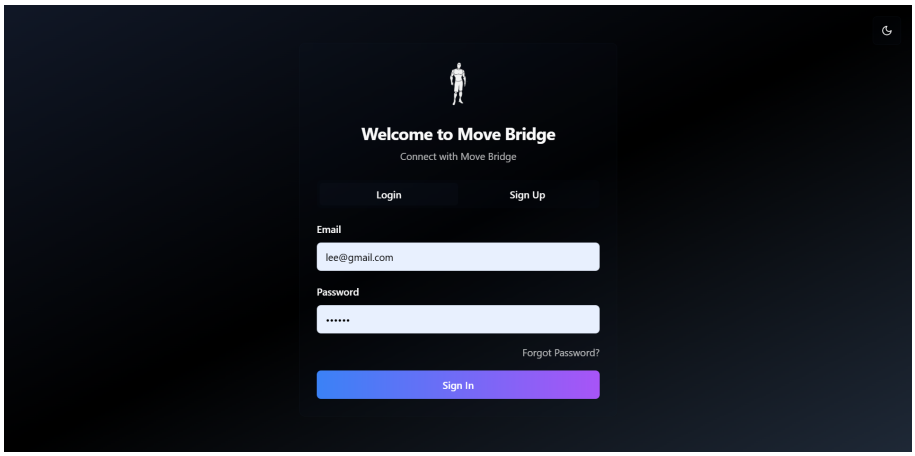

Figure 7.2: Login Page

In Figure 7.2 Login Page

Move Bridge login page offers a secure, user-friendly interface for accessing the platform. It has two well-defined tabs: Login and Sign Up, enabling both old users and new members to engage with the system. Users are required to input their email and password, with the "Forgot Password? " option visible in case of login problems. The dark, sleek theme, minimalistic design, and prominent call-to-action button (Sign In) provide a smooth user experience.

Placed centrally with a friendly greeting — "Welcome to Move Bridge – Connect with Move Bridge" — the page establishes trust and reliability, providing an easy gateway into the dance learning platform's ecosystem. This is the gateway to a broader ecosystem where users can connect, learn, and develop with a vibrant community of dancers. Its simplicity of design fits within the overall mission of the platform to offer a seamless, engaging experience for all users.

7.2.3 Signup Page

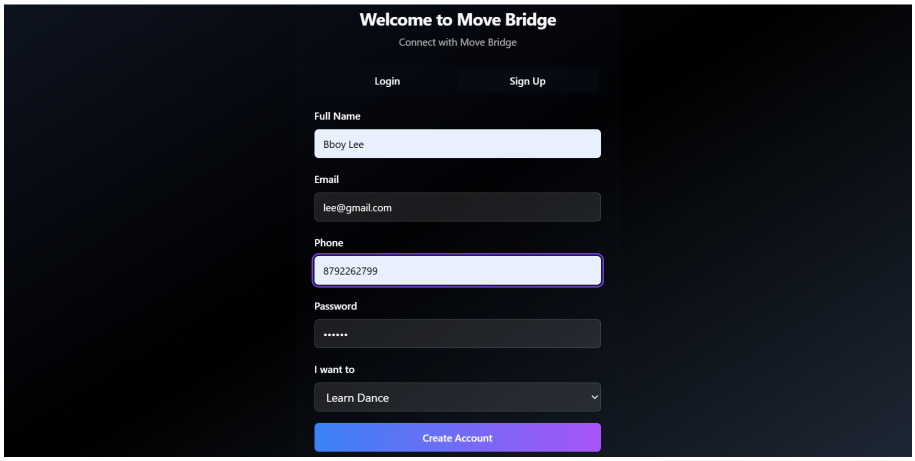

Figure 7.3: Signup Page

In Figure 7.3 Move Bridge sign-up screen is carefully crafted to induct new users quickly and effectively. It requests necessary user information like full name, email, phone number, and password, which makes it secure and personalized. The most prominent feature of this page is the dropdown menu that enables users to declare their purpose—learning dance or doing something else—thus facilitating role-based access. The sign-up call to action, "Create Account," shown in an attention-grabbing gradient color, is clear and makes the overall design more visually pleasing. The organized form allows people to easily join the community of dancings that the platform offers. By maintaining clean lines and user-centricity, the call to sign up has perfect harmony with Move Bridge's goals of access and inclusivity for everyone who loves dance. . .

7.2.4 Forgot Password

In Figure 7.4Move Bridge's password reset function increases account protection and user ease. In case users forgot their password, they can simply utilize this specific interface, which

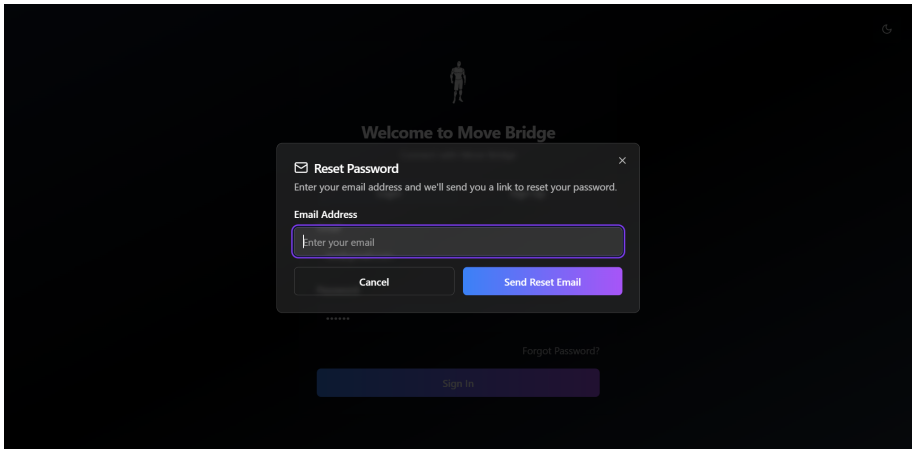

Figure 7.4: Forgot Password

asks them to input their registered email. After input, a link used for resetting is sent to the inputted email so that users can safely recover their account access. The design of the dialog box is modern and intuitive, with prominent and clear options for cancelling the action and sending the reset email. Minimalistic elements and colourful button highlights enhance visibility and ease of use. This feature upholds the platform's dedication to accessibility and account security, making it a safe online environment for users.

7.2.5 User Dashboard

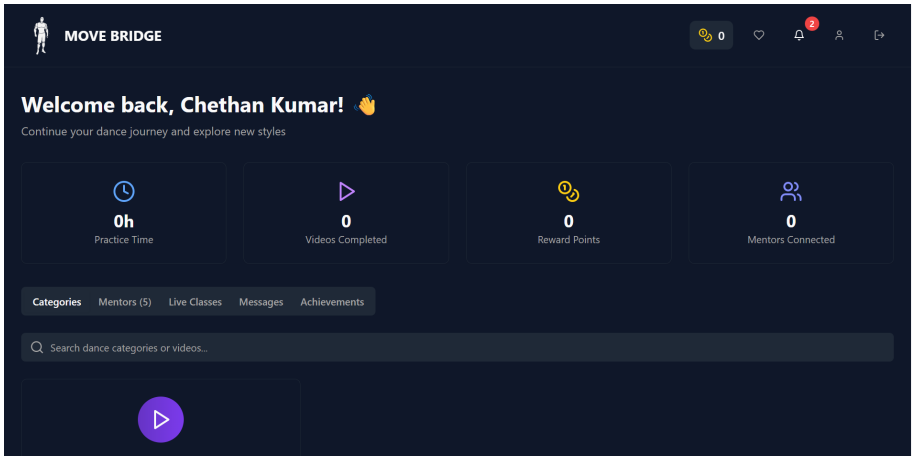

Figure 7.5: User Dashboard

In Figure 7.5 The dashboard features a welcome message and shows the progress and usage of the user on the site.

Practice Time: Indicates the sum of hours practiced dancing, assisting in monitoring commitment and consistency.

Videos Completed: Shows the number of tutorial videos the user has completed watching, showing improvement in learning.

Reward Points: Shows the points that have been accumulated as a result of activity, which can be utilized for rewards or feature unlocking.

Mentors connected: Displays the number of mentors one is currently connected with, encouraging individualized guidance and care.

Navigation Tabs : Features fast-access tabs such as Categories, Mentors, Live Classes, Messages, and Achievements, allowing for easy navigation across different sections.

7.2.6 User Categories

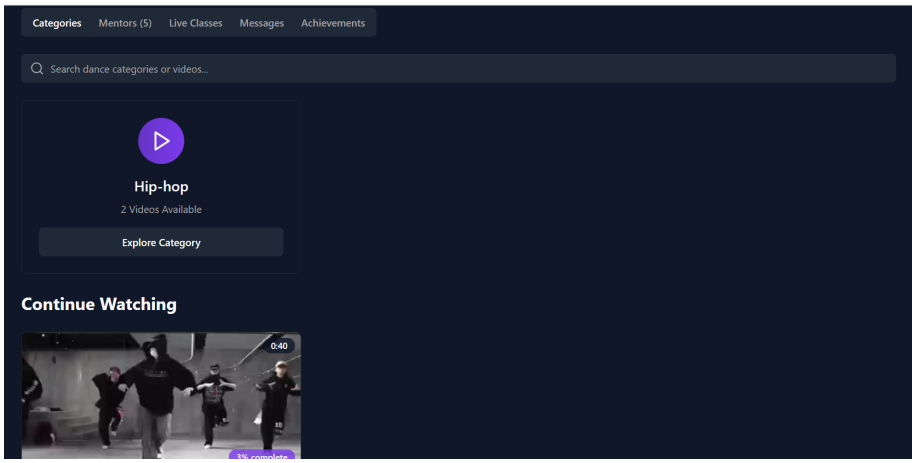

Figure 7.6: User Categories

In Figure 7.6

Users are able to browse different dance styles; "Hip-hop" is the one highlighted here with 2 learnable videos available.

Explore Category Button Gives users quick access to all videos and materials under a chosen dance category, facilitating ease of use and systematized learning.

Continue Watching Lists half-watched videos, allowing learners to continue without losing their progress records—here, one video indicates 3 percent completion.

7.2.7 User - Mentor

In Figure 7.7 This dashboard is an all-in-one location for users to find and connect with different mentors. Its main feature is the structured presentation of individual mentor profiles, every one of which displays key information like the name of the instructor, his/her specific role (e.g., "Dance Instructor," "Hip-hop"), and a brief summary of their experience or qualifications. To assist in user choice, profiles also include metrics of engagement such as

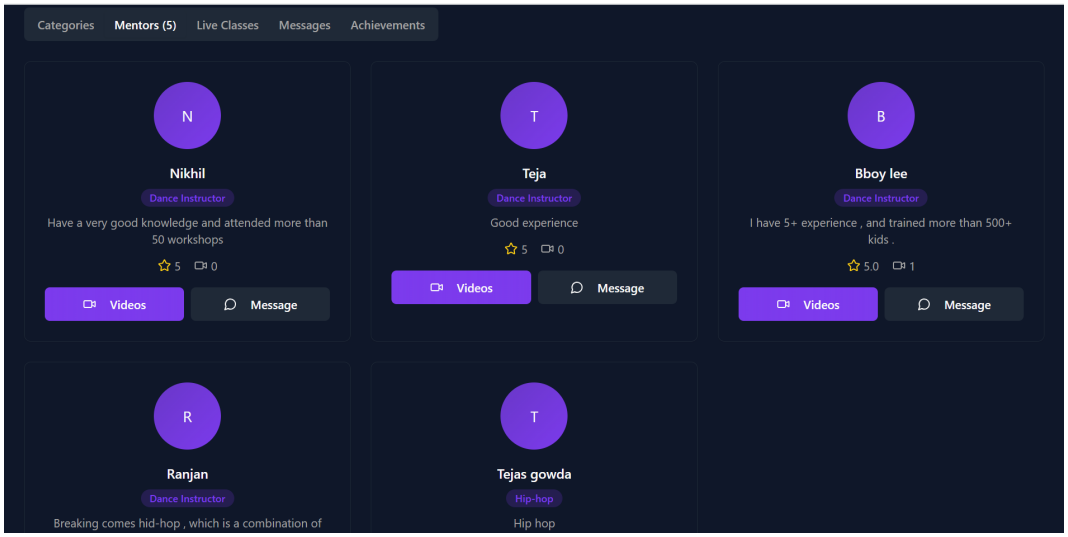

Figure 7.7: User - Mentor

star ratings, a quick visual gauge of mentor quality, and numbers for views of videos or messaging interactions. Most importantly, every profile contains call-to-action buttons directly on the page: a "Videos" button to allow users to view a preview of a mentor's teaching style and content, and a "Message" button for immediate, direct communication for questions or scheduling. The navigation bar at the top also enhances the usefulness of the platform by providing tabs for "Categories" to sift mentors by various skills, "Live Classes" for live teaching, a "Messages" tab for handling communications, and "Achievements," presumably for monitoring user progress or mentor achievements, thus cumulatively providing a total and interactive user interface for reaching out to and learning from expert teachers.

7.2.8 User - LiveClasses

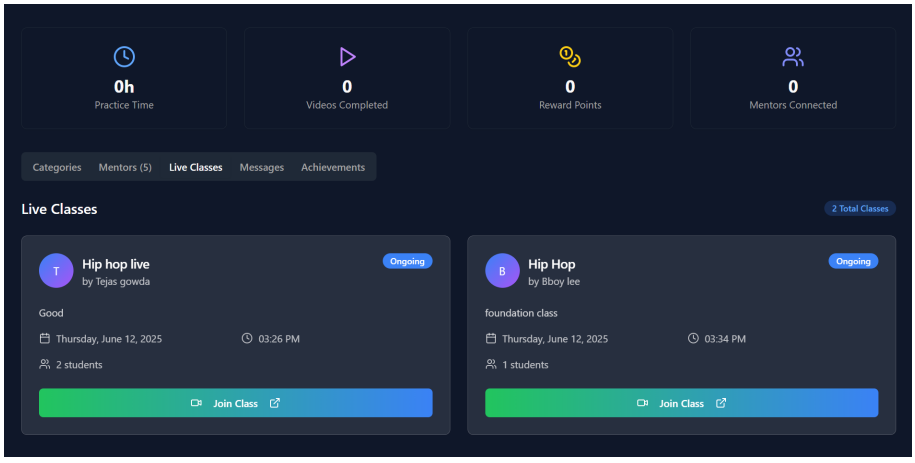

Figure 7.8: User - LiveClasses

In Figure 7.8The part of the Live Class outlines the features introduced in the "Live Classes" dashboard, as seen in the given screenshot. The dashboard is a dynamic portal on the online learning site that provides users with both a clean sight of their individual involvement and direct access to actual-time interactive lessons. At the very top, important performance indicators like "Practice Time," "Videos Completed," "Reward Points," and

"Mentors Connected" give a brief overview of the user's activity and engagement in the ecosystem of the platform. Beneath these statistics, ease-of-use navigation tabs like "Categories," "Mentors," "Messages," and "Achievements" facilitate easy transition from one section to another, making the user experience richer.

7.2.9 User-Messages

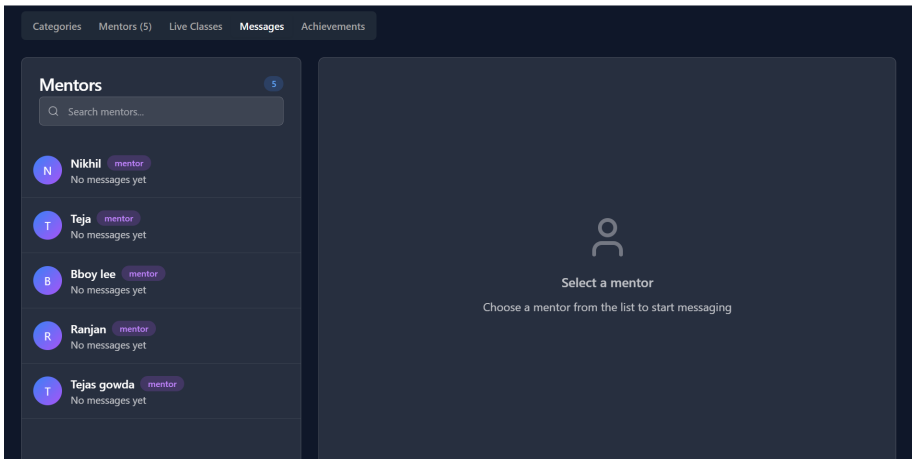

Figure 7.9: User-Messages

In Figure 7.9 The "Messages" dashboard is the communication center of the platform, allowing users to directly communicate with mentors. In the left pane, it shows a list of "Mentors" to whom the user can send or read message threads. This list reflects the mentors shown in the "Mentors (5)" tab, assuring that the user is able to talk to the five available teachers (Nikhil, Teja, Bboy lee, Ranjan, and Tejas gowda). Every mentor entry within this list consists of their name and a status displaying "No messages yet," implying an open slate for new messages. A "Search mentors." bar is also available, enabling the user to rapidly find a specific mentor for sending messages, which is especially helpful as the number of linked mentors increases. The space on the right side of the dashboard is blank at this moment, showing a prompt "Select a mentor" and "Choose a mentor from the list to start messaging." This means that once a mentor has been chosen from the left panellike area, their messaging history will fill up this big area to allow for an easy-to-use chat interface.

7.2.10 User-Achievements

In Figure 7.10The core content of the "Achievements" dashboard is split into two primary areas of functionality:

•History: This area enables users to "Track your earned reward points." As of now, it displays "No rewards earned yet. Complete videos to start earning points!" This indicates that reward points are gained by finishing certain learning activities, mostly videos, and this is consistent with the "Videos Completed" metric at the top. This feature encourages ongoing engagement and accomplishment throughout the site. •Badges: This area, titled "Your learning milestones and goals," lists specific badges that can be earned by users. Two

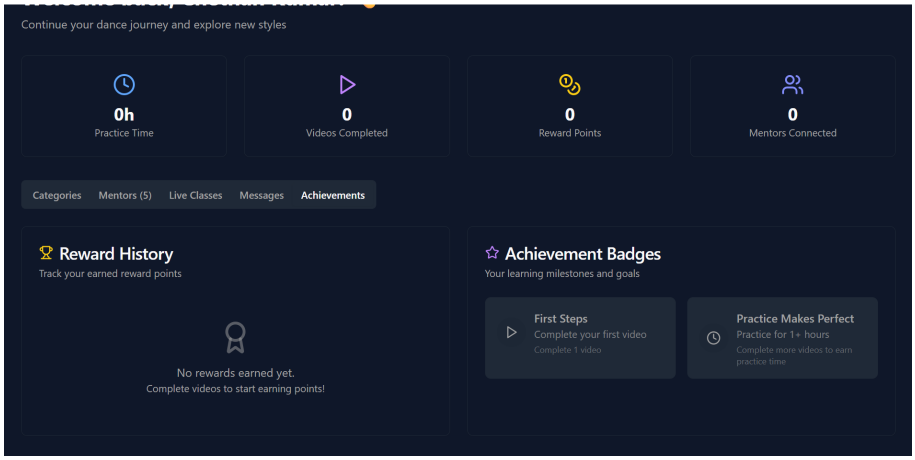

Figure 7.10: User-Achievements

of them are visible: o"First Steps": Defined as "Complete your first video" and "Complete 1 video." This badge acts as a beginning motivation for new users to explore the video content. o"Practice Makes Perfect": "Practice for 1+ hours" and "Complete more videos to earn practice time." This badge rewards regular practice and extended engagement with the learning content over time, mapping directly onto the "Practice Time" metric.

7.2.11 User-Profile

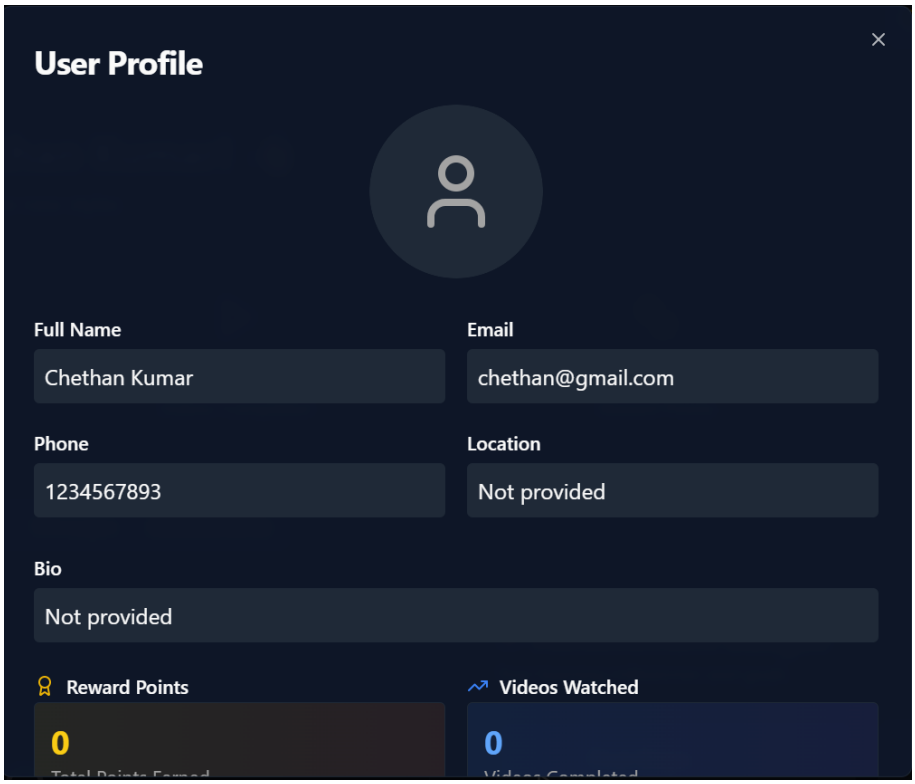

Figure 7.11: User-Profile

In Figure 7.11The following section of the report explains the features of the "User Profile" modal, as shown in the given screenshot, which is an important part for managing user accounts on the platform. The modal can be accessed from possibly multiple points and provides functionality for users to see their individual details as well as manage it. Im-

portant fields are "Full Name" (Chethan Kumar), "Email" (chethan@gmail.com), "Phone" (1234567893), and "Location" and "Bio," both now set at "Not provided," which are areas for input by the user. Under the personal information, the profile neatly summarizes the user's activity measures: "Reward Points" and "Videos Watched," which are a direct reflection of the measures found on other dashboards such as "Achievements" and "Live Classes." The focussed display of personal information and progress highlights the platform's focus on user personalization and monitoring, enabling users to control their information and keep track of their learning process efficiently.

7.2.12 Mentor-Dashboard

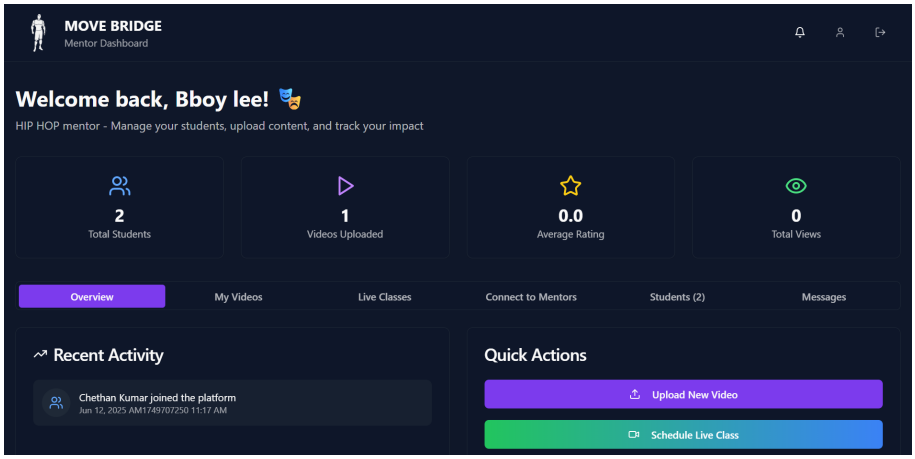

Figure 7.12: Mentor-Dashboard

In Figure 7.12Meticulously, this report describes the features of the "Mentor Dashboard," as visualized from the given screenshot, in contrast to the already examined student-oriented interfaces. Designed exclusively for instructors such as "Bboy lee," the dashboard is an all-round control panel for overseeing their teaching work, content contribution, and overall impact on the platform. On login, mentors are presented with a customized welcome and a brief overview of their function, along with key performance indicators (KPIs) like "Total Students (2)," "Videos Uploaded (1)," "Average Rating (0.0)," and "Total Views (0)," providing instant insight into their activity and audience. A dedicated navigation menu, separate from the student edition, has direct links to pages such as "Overview," "My Videos," "Live Classes," "Connect to Mentors," "Students," and "Messages," making administrative duties easier. Additionally, the dashboard proactively keeps mentors updated with a "Recent Activity" stream that records activity such as "Chethan Kumar joined the platform," keeping them aware of student activity.

7.2.13 Mentor-My Videos

In Figure 7.13This area gives valuable content management features: • "Upload New Video" Button: Strategically located at the top right corner, this button allows mentors to quickly add new instructional videos to the library, enabling ongoing content generation. • "Edit" Button: Linked to each video entry, this lets mentors edit video details, descriptions, or

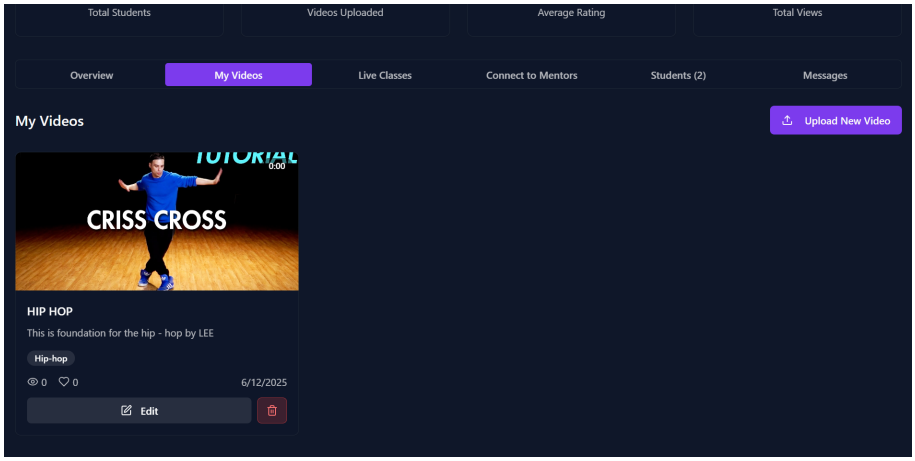

Figure 7.13: Mentor-My Videos

other information once uploaded. •"Delete" Button: Also linked to each video, this offers the capability of deleting videos from their collection, which allows for curation of content. The "My Videos" feature is essentially essential for mentors to effectively manage their library of learning videos. It gives them the ability to upload, categorize, and track the performance of their content, directly assisting their teaching function and guaranteeing a bountiful source of learning content for their learners.

7.2.14 Mentor-Live Videos

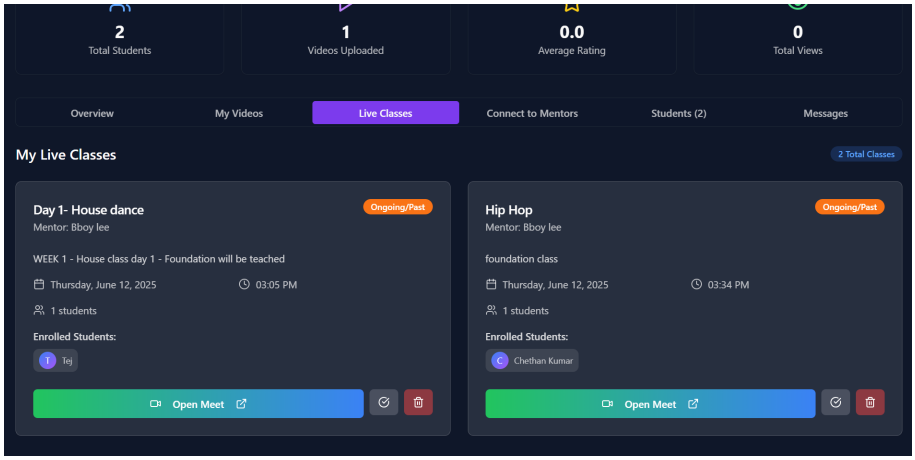

Figure 7.14: Mentor-Live Videos

In Figure 7.14This part of the report carefully outlines the "Live Classes" feature in the Mentor Dashboard, as seen in the screenshot given. Found through the mentor-specific navigation bar, this essential view allows instructors to effectively oversee their live teaching obligations. True to other parts of the mentor dashboard, the top area contains important performance metrics like "Total Students," "Videos Uploaded," and "Average Rating," providing a dynamic overview of the overall engagement of the mentor. The main section of this interface displays "My Live Classes," giving complete details for each of the planned sessions, such as the title of the class, the mentor's name, its "Ongoing/Past" status, a brief description, the precise date and time, and the number of enrolled pupils. Importantly,

it also clearly enumerates the "Enrolled Students," making it easy for mentors to monitor participants. In addition, embedded action buttons such as "Open Meet" make it easier to directly start live sessions, while checkmark and trashcan icons provide status update or class cancellation options, all thereby simplifying the entire process of providing interactive and efficient live instruction for an online learning platform.

7.2.15 Mentor-Connect To Mentors

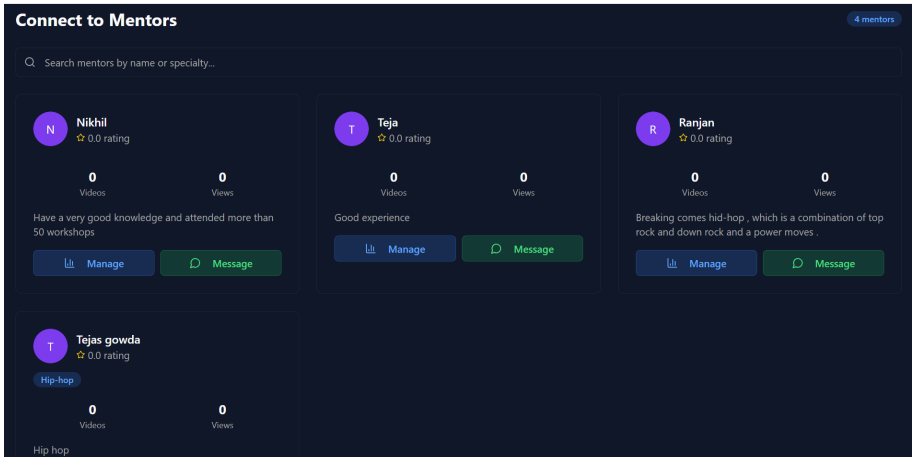

Figure 7.15: Mentor-Connect To Mentors

In Figure 7.15The "Connect to Mentors" page, accessible through the navigation bar for mentors, is intended for teachers to find and possibly team up with other mentors within the platform. The screenshot shows a grid of mentor profiles, similar in structure to the student "Mentors" dashboard but with varied action buttons. Here, every mentor profile (e.g., Nikhil, Teja, Ranjan, Tejas gowda) displays their name, a "0.0 rating," and statistics for "Videos" and "Views." Most importantly, rather than "Videos" and "Message" buttons, this dashboard displays "Manage" and "Message" options. The "Manage" button would probably enable one to view the profile of another mentor in greater detail or perhaps manage a collaborative relationship. The "Message" button allows for one-to-one communication between mentors for networking purposes or to discuss possible partnerships.

7.2.16 Mentor-Students

In Figure 7.16This part of the report carefully outlines the "Students" feature in the Mentor Dashboard, as seen in the accompanying screenshot, focusing on how teachers oversee and engage with their registered students. It can be accessed via the mentor-centric navigation bar, which offers features such as "Overview" and "Live Classes," and the special view offers a wide-angle perspective of the mentor's student cohort. The dashboard also clearly displays important mentor-focused metrics at the top, providing an ongoing picture of the instructor's total platform activity. The central section of this "Students" dashboard reads out individual student profiles, including their names, emails, skill levels (e.g., "Beginner"), and important engagement statistics like "Videos" viewed and "Hours" spent in practice, so

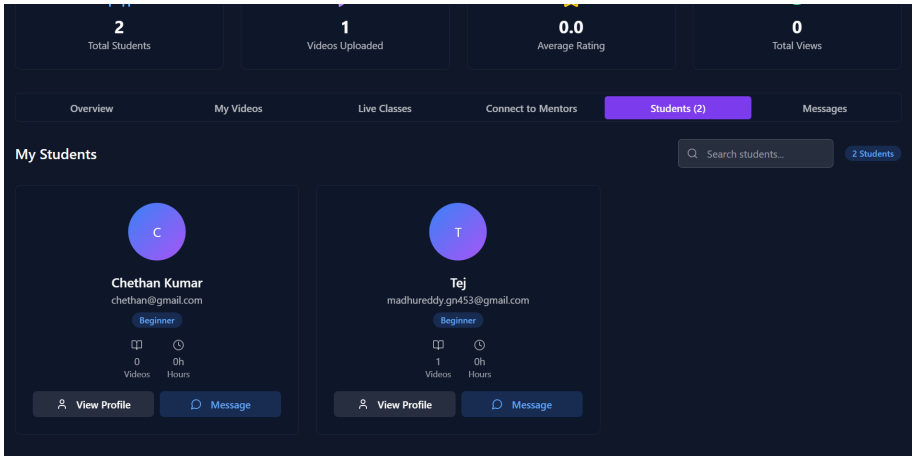

Figure 7.16: Mentor-Students

mentors can track individual progress. Core action buttons such as "View Profile" give more in-depth views into student history, whereas the "Message" link allows for direct, one-on-one communication.

7.2.17 Mentor-Messages

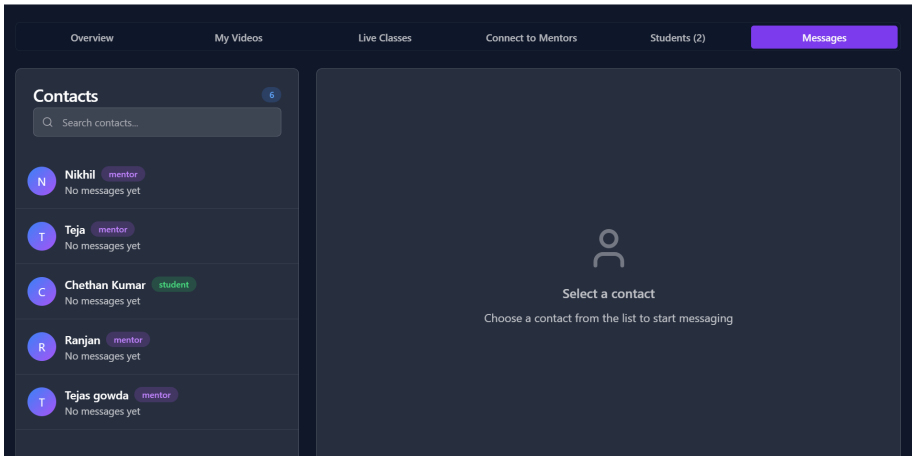

Figure 7.17: Mentor-Messages

In Figure 7.17This dedicated communications platform is where mentors can connect directly with their students as well as other instructors on the site. The left pane of this dashboard explicitly shows a "Contacts" list, how many total users are available to message. This list fully incorporates both student and mentor contacts, both of which are identified clearly (e.g., "Chethan Kumar - student," "Nikhil - mentor"), giving a well-organized overview of the communication network of the mentor. Every contact has their name and a "No messages yet" status, marking a potential to start new conversations. There is also a widely visible "Search contacts." bar that enables speedy browsing through a potentially long list of connections. The larger right-hand section of the dashboard is the dynamic chat window, which first asks the mentor to "Select a contact" to "start messaging." Once chosen, this section will fill with the history of conversation and an interface for real-time conversation.

7.2.18 Mentor-Profile

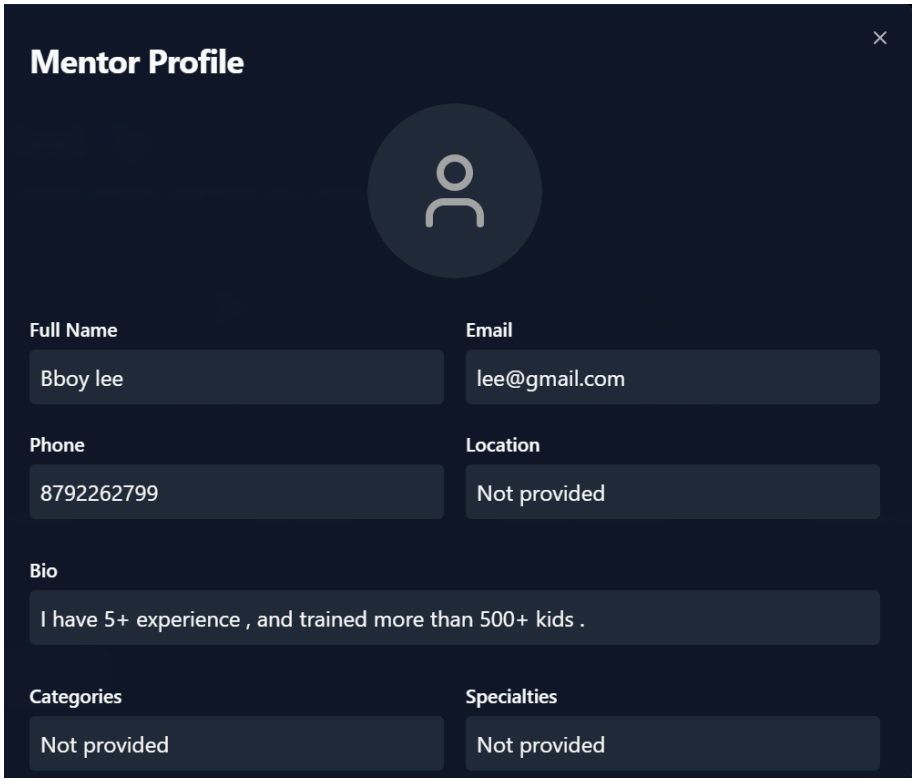

Figure 7.18: Mentor-Profile

In Figure 7.18This report section carefully describes the "Mentor Profile" modal, such as that of "Bboy lee's" profile in the sample screenshot, as a thorough public display for personal teachers on the platform. The modal clearly highlights necessary contact details, such as "Full Name," "Email," and "Phone," with placeholder input fields for "Location," "Categories," and "Specialties," inviting mentors to fill out their profiles. An essential element is the "Bio," giving a written overview of the mentor's professional background, e.g., "I have 5+ experience, and trained more than 500+ kids," giving essential information to prospective students. This comprehensive profile, when reached from a summarized view like the top-level "Mentors" dashboard, enables users to research more deeply into an educator's qualifications and teaching history, promoting openness and facilitating knowledge-based decision-making. In essence, the "Mentor Profile" is vital for mentors to provide visibility into their experience and establish credibility with potential learners, serving as a gateway for consumers to learn about and engage with teachers beyond their first brief synopsis on the platform.

7.2.19 Admin-Dashboard

In Figure 7.19Here in this report, this part thoroughly describes the features of the "Admin Dashboard," as illustrated in the given screenshot, that acts as the master control panel for operating the whole online learning platform. In contrast to user and mentor-specific interfaces, this dashboard is meant for platform managers to monitor and operate all aspects of users, contents, and system operations. When logged in, the dashboard immediately displays

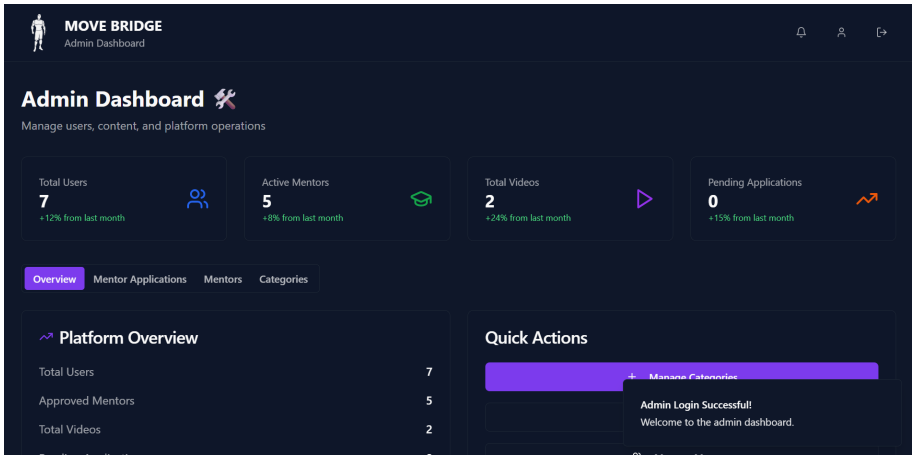

Figure 7.19: Admin-Dashboard

important system-wide statistics like "Total Users (7)," "Active Mentors (5)," "Total Videos (2)," and "Pending Applications (0)" each with the added monthly increase percentages (i.e., "+12 percent from last month"), providing important information on platform activity and growth. A focused navigation bar, consisting of "Overview" (the present view), "Mentor Applications," "Mentors," and "Categories," allows administrators to explore particular areas of management, ranging from handling new mentor enrollments and handling existing instructor profiles to content category organization. Additionally, the "Quick Actions" space offers immediate access to fundamental administrative functions such as "Manage Categories," optimizing functional efficiency.

7.2.20 Admin-Mentor Application

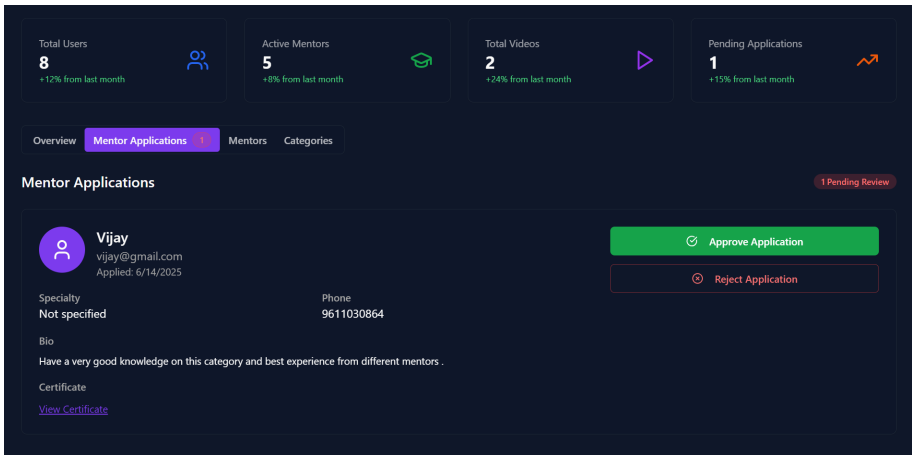

Figure 7.20: Admin-Mentor Application

In Figure 7.20The "Mentor Applications" tab, highly emphasized within the admin navigation, is the top-level processing point for new instructor requests. The dashboard always shows top-level metrics, specifically "1 Pending Application," giving administrators an immediate sense of new submissions. The essence of this feature is in showing complete applicant data like name ("Vijay"), contact, specialty, and a full "Bio" describing their experience ("Have a very good knowledge on this category and best experience from different

mentors"). Perhaps most importantly, adding a "View Certificate" link emphasizes the site's focus on quality assurance by allowing credentials verification. The availability of distinct "Approve Application" and "Reject Application" buttons also helps simplify administrative processes, making decision-making when onboarding new talent or upholding platform standards efficient.

7.2.21 Admin-Mentors

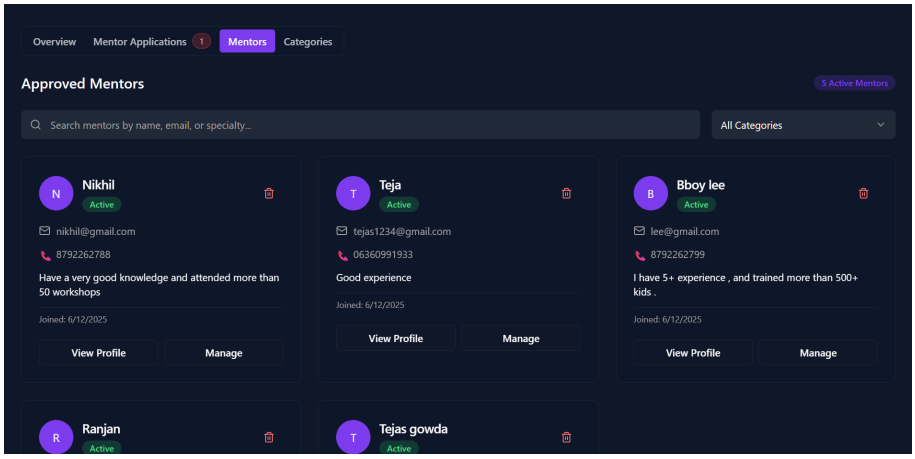

Figure 7.21: Admin-Mentors

In Figure 7.21This portion of the report carefully outlines the "Mentors" functionality in the Admin Dashboard, as accurately represented in the included screenshot. This key feature enables platform administrators with a thorough overview and management tools for all approved teachers on the platform. Accessible through the admin-specific navigation bar, this view always shows high-level platform metrics, providing a continuous overview of overall activity. At the heart of this feature is that it shows a grid of "Approved Mentors," each row containing detailed administrative information such as their name, "Active" status, contact information (email and phone), a brief bio detailing their experience, and their "Joined" date. Most importantly, in this administrative perspective each mentor's profile contains "View Profile" to see their publicly displayed information, "Manage" for more in-depth administrative options, and a delete icon for deleting mentors as needed. In addition, there are integrated search and filtering capabilities which enable administrators to conveniently search and sort the pool of mentors.

7.2.22 Admin-Categories

In Figure 7.22This report section carefully explains the "Categories" feature within the Admin Dashboard, as accurately represented in the submitted screenshot. This milestone feature is crucial in that it is meant to fully equip platform administrators with control over the organizational layout of content and mentor specialization. Available through the admin-specific navigation menu, this view always shows high-level platform statistics, providing a continuous overview of aggregate activity. The crux of this feature is the display of a grid of available dance categories, e.g., "Hip-hop," "HOUSE," "KRUMP," and "BOLLYBEATS."

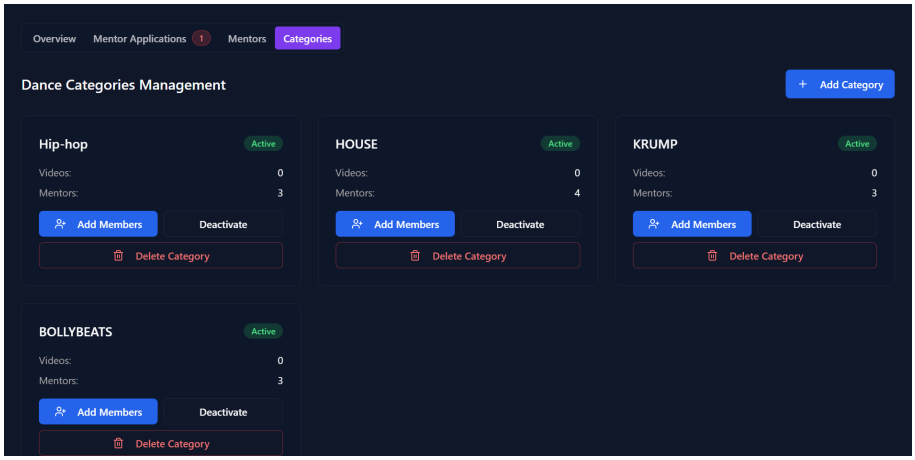

Figure 7.22: Admin-Categories

The entry for each category includes important information, like its "Active" status, the number of linked "Videos" (though these are zero for those displayed currently), and importantly, the number of "Mentors" who specialize in that specific style. An "Add Category" button available facilitates administrators to easily add to the scope of content on the platform. In addition, each category provides certain management options: "Add Members" to add mentors, "Deactivate" for a temporary move, and "Delete Category" for deletion.

Chapter 8

Test Cases

8.1 Test Case Table

Test Case Table

TC_ID	Test Scenario	Test Steps	Expected Result	Actual Result	Status
TC_01	Student Signup	Fill signup form with student details and submit	Student account created successfully	Redirected to user dashboard	Pass
TC_02	Mentor Signup	Fill signup form with mentor details and submit	Mentor account created and pending admin approval	Mentor account created and pending admin approval	Pass
TC_03	Admin Login	Login with hardcoded admin credentials	Admin logged in and redirected to dashboard	Admin logged in and redirected to dashboard	Pass

TC_ID	Test Scenario	Test Steps	Expected Result	Actual Result	Status
TC_04	Role-Based Redirect	Login as student, mentor, admin respectively	Redirect to their respective dashboards	Redirect to their respective dashboards	Pass
TC_05	Profile Creation	Student/mentor fills bio and specialties	Profile saved and displayed correctly	Profile saved and displayed correctly	Pass
TC_06	Video Browsing	Student browses video tutorial section	Videos listed by category	Videos listed by category	Pass
TC_07	Progress Tracking	Student watches and completes a video	Video marked as completed in progress tracker	Video marked as completed in progress tracker	Pass
TC_08	Mentor Discovery	Student searches and filters mentors	Filtered mentors displayed with specialties and ratings	Filtered mentors displayed with specialties and ratings	Pass
TC_09	Favorites System	Student marks a video as favorite	Video appears in the Favorites section	Video appears in the Favorites section	Pass
TC_10	Continue Watching	Student stops a video midway and revisits	Video resumes from last watched position	Video resumes from last watched position	Pass

TC_ID	Test Scenario	Test Steps	Expected Result	Actual Result	Status
TC_11	Achievement System	Student completes milestones (e.g. 5 videos)	Badge and reward points earned and displayed	Badge and reward points earned and displayed	Pass
TC_12	Real-time Chat	Student sends a message to a mentor	Mentor receives and replies instantly	Message exchange works in real-time	Pass
TC_13	Notifications	Mentor sends message or schedules live class	Student receives notification	Student receives notification	Pass
TC_14	Live Class Join	Student joins a scheduled live class	Video session starts successfully	Video session starts successfully	Pass
TC_15	Mentor Video Upload	Mentor uploads a video with category	Video saved, categorized and viewable	Video saved, categorized and viewable	Pass
TC_16	Video Statistics	Mentor views stats for uploaded video	Views, likes, and engagement shown	Views, likes, and engagement shown	Pass

TC_ID	Test Scenario	Test Steps	Expected Result	Actual Result	Status
TC_17	Student Progress Monitoring	Mentor checks a specific student's progress	Progress with watched videos and practice shown	Progress with watched videos and practice shown	Pass
TC_18	Admin Mentor Approval	Admin reviews and approves mentor	Mentor status changes to approved	Mentor status changes to approved	Pass
TC_19	Content Moderation	Admin views uploaded video flagged as inappropriate	Admin can delete or disable content	Admin can delete or disable content	Pass
TC_20	Analytics Dashboard	Admin opens analytics section	Platform-wide stats load and display correctly	Platform-wide stats load and display correctly	Pass

Conclusion

Chapter 9

Conclusion

¡Conclusion here¿ Move Bridge is a trailblazing project that closes the distance between dance learning and contemporary technology. By implementing role-based access for students, mentors, and admins, it creates a streamlined and accessible digital space specific to the needs of each user category. The platform's extensive array of features—ranging from classified video lessons, live sessions, instant messaging, individual progress, and reward schemes—foster an interactive and self-supported learning experience for future dancers irrespective of their geographical location or financial status.

The platform enables mentors with features to manage content effectively, engage with students, and track performance through data insights. This mutual dialogue between students and mentors not only improves learning outcomes but also makes the dance ecosystem more integrated and communal. Admin features provide quality assurance, effective content moderation, and scalability of the platform through sound user and category management.

With solutions for challenges such as limited access, funding issues, a lack of mentorship, and geographical disparities, Move Bridge is a comprehensive digital solution within the performing arts education industry. The platform does not only support individual skill enhancement but also enables cultural exchange, creativity, and community-based learning.

In summary, Move Bridge can revitalize dance education in the digital age. There is room for AI feedback integration in the future, as well as AR/VR experiences and cross-platform apps. It has the potential to become a widely used and internationally known platform. As it grows, Move Bridge is not merely a project—it's a movement towards democratizing and modernizing dance education.

Future Work

Chapter 10

Future Work

As digital learning environments continue to develop, Move Bridge can potentially disrupt not only how individuals learn dance, but how they interact, work together, and produce in the performing arts community. Though the site already features organized video lessons, mentorship, live class opportunities, and live chat, there is enormous room for growth, innovation, and increased personalization.

Future key developments include:

Augmented and Virtual Reality Integration: Allow AR/VR dance rooms in which students can copy mentors movement in virtual 3D spaces. Virtual dance rooms will support real-time interaction, movement adjustment, and more embodied, kinesthetic learning.

Gamification and Virtual Competitions: Implement dance challenges, leaderboards, daily streaks, and reward-based exercises to foster greater engagement. Virtual competitions and monthly competitions can unite dancers worldwide and create a lively, competitive community.

Blockchain-Based Certification: Use blockchain to provide verified digital certificates for course completion, mentorship milestones, and competition victories making them tamper-evident and international standards.

Bridge Move is not merely a tool it's the future of learning dance. As dance goes digital, the platform has the potential to empower artists everywhere, democratize access, and redefine how dance instruction is delivered, experienced, and celebrated.

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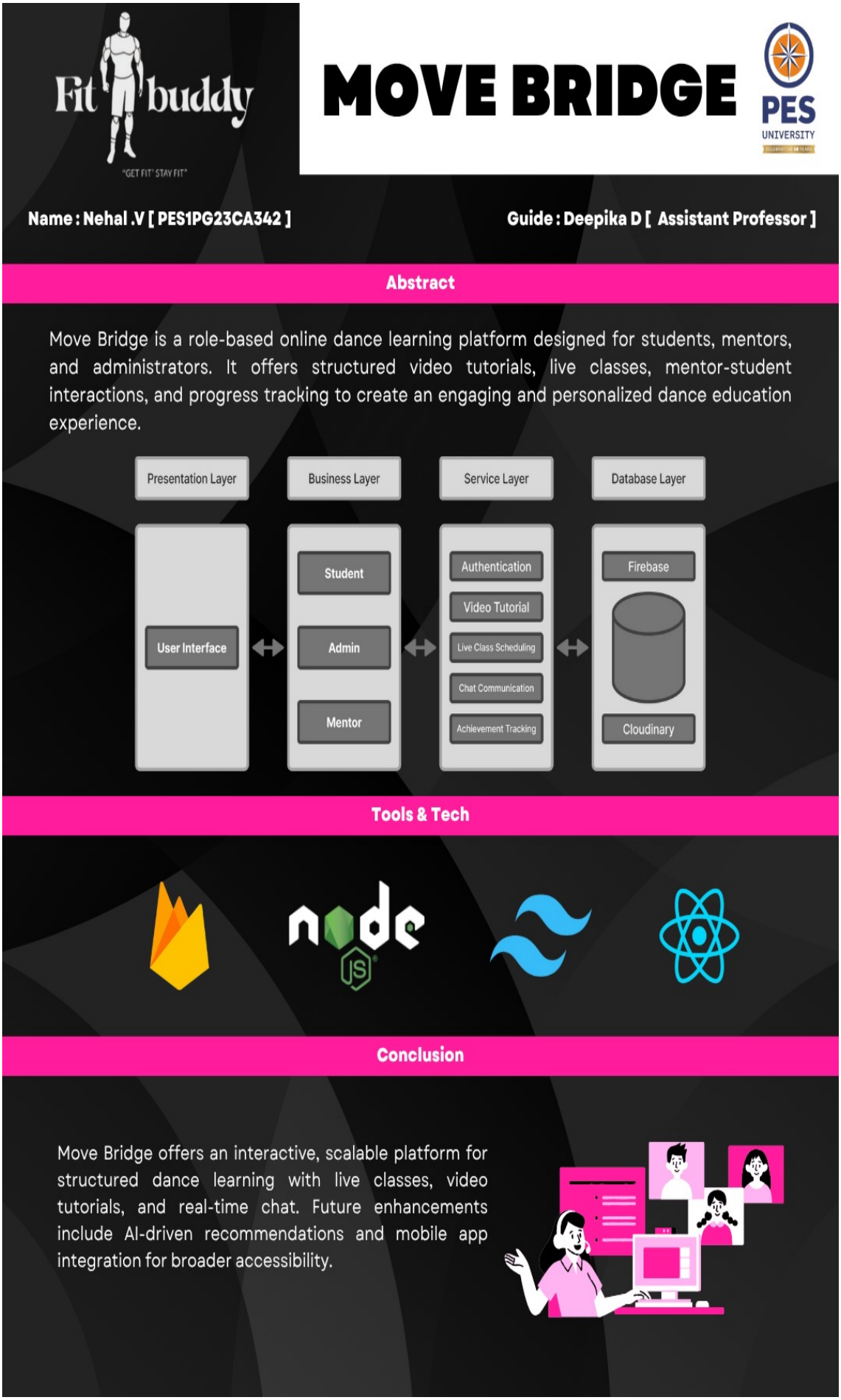
Poster


Fit buddy
"GET FIT" STAY FIT"
MOVE BRIDGE
PES UNIVERSITY
Name : Nehal .V [PES1PG23CA342]
Guide : Deepika D [Assistant Professor]
Abstract
Move Bridge is a role-based online dance learning platform designed for students, mentors, and administrators. It offers structured video tutorials, live classes, mentor-student interactions, and progress tracking to create an engaging and personalized dance education experience.
Presentation Layer
Business Layer
Service Layer
Database Layer
User Interface
Student
Admin
Mentor
Authentication
Video Tutorial
Live Class Scheduling
Chat Communication
Achievement Tracking
Firebase
Cloudinary
Tools & Tech
node
JS
Conclusion
Move Bridge offers an interactive, scalable platform for structured dance learning with live classes, video tutorials, and real-time chat. Future enhancements include AI-driven recommendations and mobile app integration for broader accessibility.