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## A Study of LMS-Based Applications on Play Store: Free vs. Paid

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### ABSTRACT:

This project is a huge team effort. We extend our deepest gratitude and thanks to the following people who have helped us to achieve our work.

Special thanks to our project guide Prof. Vaishali Malkar for guiding us and helping in time when we needed most. We got to learn many things from her, and it was our pleasure to work with her. My team and I extend thanks to the faculties of our college whom we have approached for academic help with regards to our project. We also would like to thank our HOD Prof. Vijay Patil and Principal Dr. Ashish Ukidve for their support and guidance.

### INDEX TERMS –

- Course Access Module
- Progress Tracking Module
- Upcoming Courses Module
- Profile Management Module

## 1. INTRODUCTION

Learning is a fundamental aspect of human growth and development. With the rise of digital technology, education has moved beyond traditional classrooms into the online domain. Online Learning Management Systems (LMS) have gained immense popularity, offering learners access to quality education anytime, anywhere. These platforms cater to diverse learning needs, from academic subjects to professional skills, making education more flexible and accessible. LMS-based applications available on the Play Store come in both free and paid versions, each with distinct advantages and limitations. This study aims to analyse and compare these applications based on various parameters, helping users make informed choices.

Several learning platforms on the Play Store offer courses in Artificial Intelligence (AI), Machine Learning (ML), and Deep Learning (DL). Coursera provides specialized courses from top universities, allowing users to access video lectures, readings, and peer-reviewed assignments. edX offers AI and ML courses from renowned institutions like MIT and Harvard, featuring video tutorials, quizzes, and discussion forums. Udacity stands out with its Nanodegree programs, focusing on hands-on projects and industry-relevant skills through mentorship. LinkedIn Learning provides AI and ML courses with video content and quizzes, integrating with LinkedIn profiles to showcase completed courses. Khan Academy, though more foundational, offers computer science and programming courses that build essential AI and ML concepts through instructional videos and practice exercises.

These platforms cater to different learning preferences, offering structured university-level courses, self-paced tutorials, and hands-on projects. Whether a learner is a beginner or an advanced professional, these resources provide valuable opportunities to gain expertise in AI, ML, and DL. The availability of both free and paid versions ensures that education remains accessible to a wider audience, empowering individuals to stay updated with the latest advancements in these fields.

## 2. METHODOLOGY

### 1. Platform Selection

- We have selected a mix of popular LMS-based applications available on the Google Play Store, ensuring a balance between free and paid apps.
- The selection was based on user popularity, content variety, and learning features. Some of the apps reviewed include: Coursera, Udemy, edX, Khan Academy, LinkedIn Learning, Duolingo, Skillshare

### 2. Study Parameters

- User Base & Downloads – Number of users who have installed the app.
- User Ratings & Reviews – Average rating and feedback provided by learners.

- Content Quality & Course Variety – Range of courses offered and depth of content.
- Features & User Experience – Interactive elements, AI-driven learning, gamification, etc.
- Pricing Model – Free vs. paid features, affordability, and subscription plans.

### 3. Learning Outcome Measurement

- Investigate how effectively the courses help learners achieve their goals (e.g., skill acquisition, certifications, job placements).
- Compare completion rates and learner engagement metrics across different platforms.

### 4. Comparative Analysis Approach

- Benchmark LMS apps against industry standards and best practices in e-learning.
- Compare AI-driven learning features such as personalized recommendations, adaptive learning paths, and chatbot assistance.
- Assess the effectiveness of gamification elements, such as quizzes, badges, and progress tracking, in enhancing learner engagement.

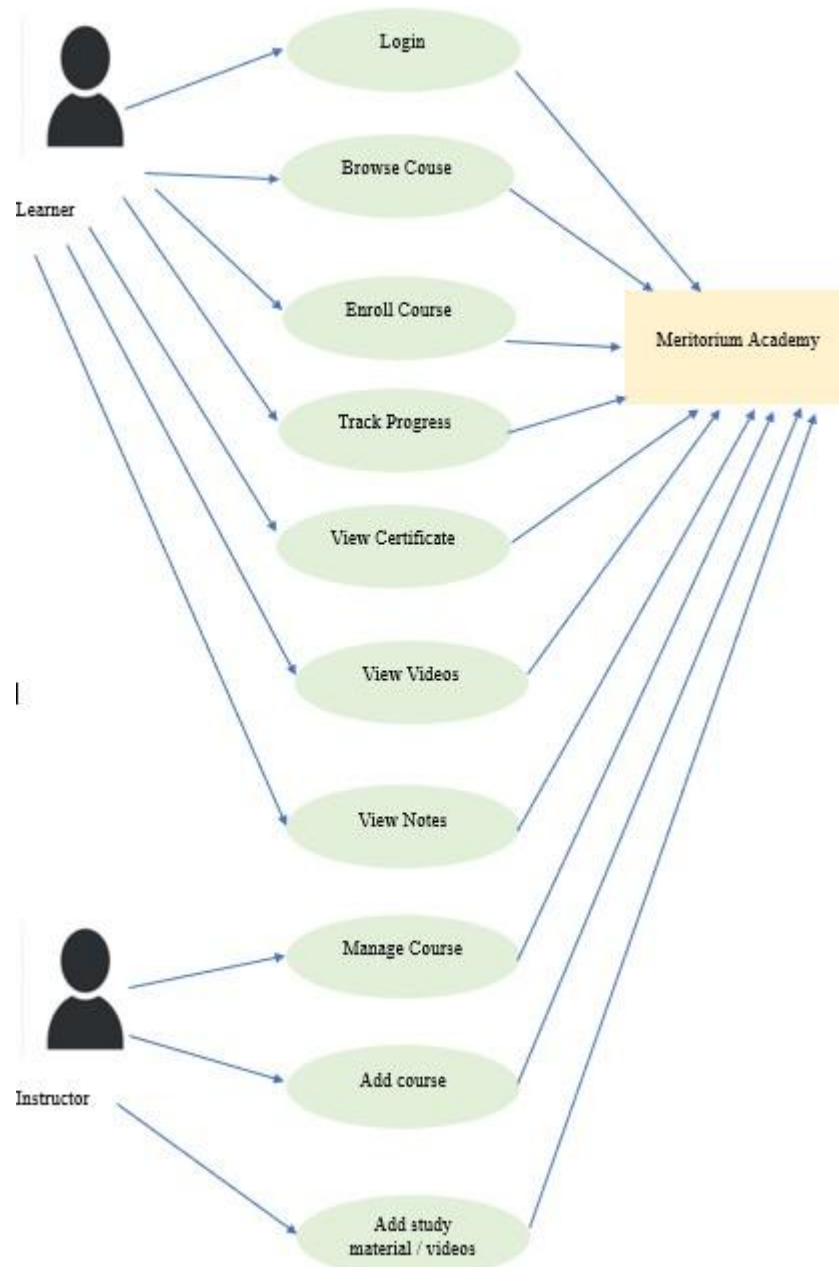
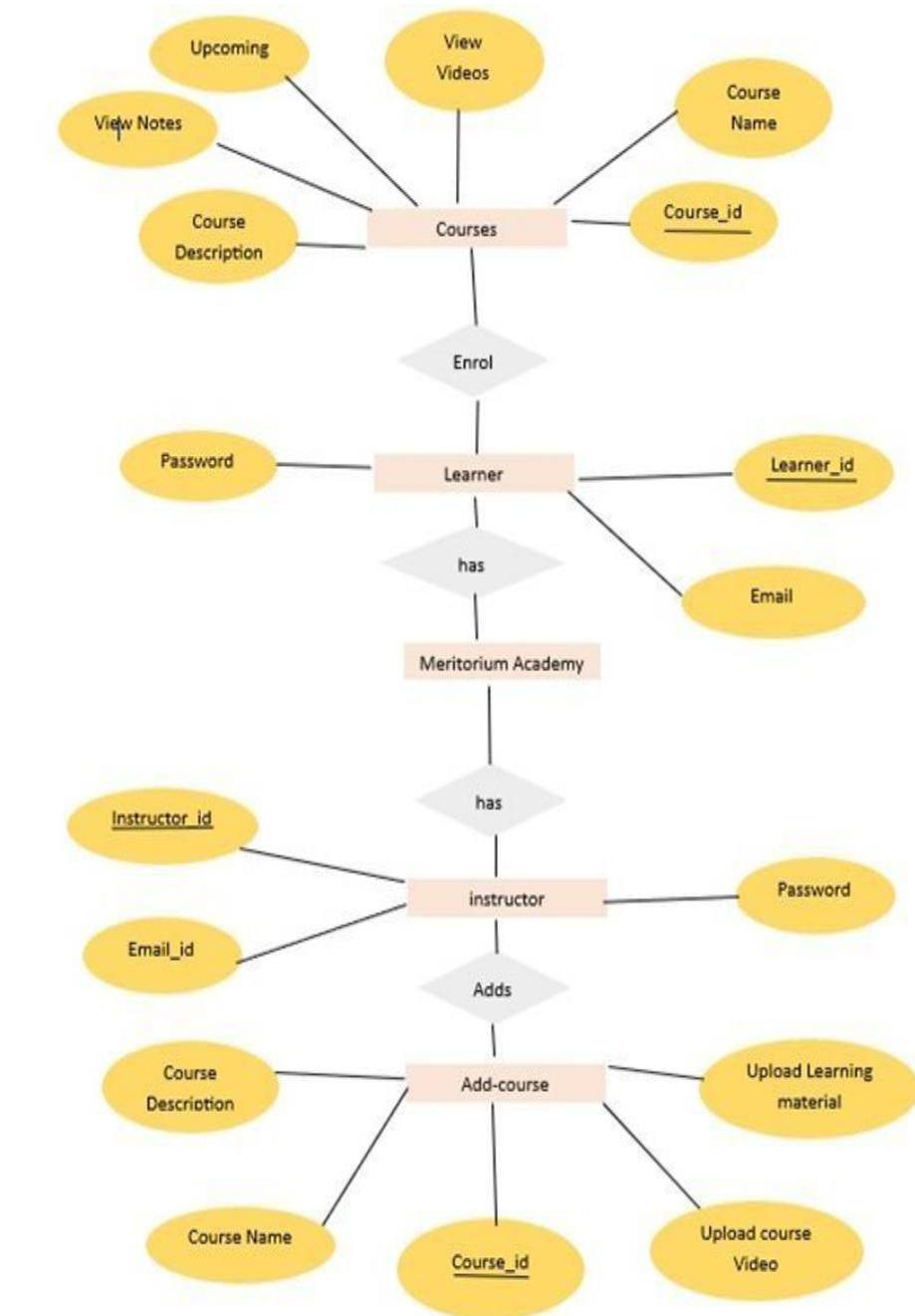


Fig 1: Use Case Diagram Meritorium Knowledge Academy



**Fig 2: E-R Diagram**  
Meritorium Knowledge Academy

#### 4. OBSERVATIONS

A comparative study was conducted based on Play Store data. The table below summarizes the key observations:

Application	Downloads	User Rating	Pricing Model	Number of Courses	Primary Focus	Offline Access
Coursera	10M+	4.7/5	Freemium	7,000+	University courses, degrees	Yes
Udemy	50M+	4.5/5	Paid	210,000+	Skill-based learning	Yes
edX	5M+	4.6/5	Freemium	3,000+	University courses, degrees	Yes

<b>Khan Academy</b>	10M+	4.8/5	Free	10,000+	K-12, academic subjects	Yes
<b>LinkedIn Learning</b>	5M+	4.5/5	Subscription- based	16,000+	Professional development	Yes
<b>Duolingo</b>	100M+	4.6/5	Freemium	40+ languages	Language learning	Yes
<b>Skillshare</b>	1M+	4.3/5	Subscription- based	35,000+	Creative & business skills	Yes

### Key Insights:

#### 1. Free vs. Paid Apps

Free applications like Khan Academy and Duolingo offer extensive learning material, while paid apps like Udemy and Skillshare provide specialized courses with certifications.

#### 2. AI and Personalization

AI-driven features such as adaptive learning and personalized recommendations enhance the learning experience in apps like Duolingo and LinkedIn Learning.

#### 3. User Engagement

Interactive elements like gamification in Duolingo and community-driven learning in Coursera significantly impact user retention.

## 5. CONCLUSION

The study reveals that both free and paid LMS applications have their own strengths. While free apps democratize education and provide access to essential knowledge, paid applications offer structured, in-depth courses with certifications that enhance career prospects. The increasing integration of AI in learning platforms is revolutionizing education by providing personalized learning experiences, adaptive assessments, and real-time feedback.

Ultimately, the choice between free and paid LMS applications depends on the learner's needs, financial considerations, and career aspirations. By understanding the strengths of each platform, users can make informed decisions that align with their educational and professional growth. As digital learning continues to evolve, LMS applications will play a crucial role in shaping the future of education, ensuring that quality learning remains accessible to all.

## 6. Future Scope: AI in LMS

AI-driven learning is set to be the future of online education. Some key advancements to watch out for include:

- Personalized Learning Paths – AI algorithms will tailor content based on learners' progress and preferences.
- AI Tutors & Chatbots – Intelligent assistants will provide real-time doubt resolution and guidance.
- Automated Assessments – AI will enable smarter evaluations and instant grading.
- Immersive Learning (AR/VR) – Future LMS apps will integrate augmented and virtual reality for practical learning experiences.
- As technology evolves, LMS-based applications will continue to shape the future of education, making learning more accessible, engaging, and efficient for students and professionals alike.

## OUTPUT