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EDUNEPTECH: AN INNOVATIVE EDUCATIONAL PLATFORM

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Abstract : Eduneptech is an advanced educational technology platform developed to support learners in the fields of Computer Science and Information Technology by providing a structured, interactive, and career-oriented learning environment. The platform is designed in alignment with the National Education Policy (NEP) 2020, emphasizing competency-based learning, digital literacy, continuous assessment, and holistic skill development.Eduneptech integrates multiple learning components, including programming test series, career roadmap modules, daily streak-based progress tracking, and an AI-powered chatbot that offers real-time academic guidance and doubt resolution. The programming test series enables students to strengthen problem-solving abilities through structured assessments in languages such as C, C++, Java, and Python. Career roadmaps help learners understand industry trends, required skills, and step-by-step pathways toward roles in software development, cybersecurity, artificial intelligence, and other emerging technology domains.To promote consistency and discipline in learning, the platform incorporates a daily streak tracking system that motivates students to maintain regular study habits through gamification and performance rewards. The findings demonstrate the potential of Eduneptech as a scalable and impactful digital learning solution for modern higher education institutions.

Index Terms – EdTech, NEP 2020, E-learning, AI Chatbot, Career Roadmaps, Streak Learning

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I. INTRODUCTION

The rapid advancement of digital education and online learning technologies has significantly transformed the way students acquire knowledge and develop professional skills. With the increasing demand for industry-ready graduates, there is a growing need for integrated learning platforms that effectively combine technical skill development, academic support, and structured career planning within a single digital ecosystem. While numerous e-learning platforms exist today, many of them focus on isolated learning aspects such as video-based courses, coding practice, or exam preparation, resulting in fragmented learning experiences.Traditional learning systems and conventional classroom environments often lack structured progress monitoring, personalized learning pathways, and motivational engagement mechanisms that encourage consistent study habits. Moreover, students frequently face challenges such as limited access to real-time mentorship, inadequate feedback on performance, and insufficient guidance regarding career opportunities in emerging technology fields. These gaps can hinder both academic success and career preparedness, especially for students pursuing Information Technology and Computer Science disciplines.Eduneptech has been developed to address these limitations by providing a centralized, intelligent, and student-centric educational platform tailored specifically for IT and Computer Science learners. The platform not only enhances technical competence but also fosters self-directed learning, critical thinking, and career readiness. As a result, Eduneptech serves as a scalable and innovative solution to support modern digital education and empower students to achieve both academic excellence and professional success.

II. LITERATURE REVIEW

Existing e-learning platforms such as online coding practice portals, digital course providers, and career guidance systems have significantly improved access to education and skill development. These platforms offer valuable features including programming exercises, recorded lectures, certification courses, and job-oriented learning paths. However, most of these systems function as standalone solutions, focusing on limited aspects of the learning process rather than providing a fully integrated educational ecosystem. As a result, learners often need to rely on multiple platforms to meet their academic, skill-building, and career-planning needs, leading to fragmented learning experiences and reduced engagement.A major limitation of traditional e-learning systems is the lack of personalization and sustained learner motivation. Many platforms follow a one-size-fits-all approach, offering static content without adapting to individual learning pace, performance, or career goals.Eduneptech builds upon these research findings by integrating gamified learning models, habit-tracking features, and AI-powered tutoring tools into a single unified learning platform. By combining academic resources, programming assessments, career guidance, and intelligent support systems, Eduneptech overcomes the limitations of fragmented e-learning solutions. The platform aims to deliver a holistic, personalized, and motivating learning environment that enhances learner engagement, improves knowledge retention, and supports long-term career development.

III. RESEARCH METHODOLOGY

Figure 1: the High-level architecture

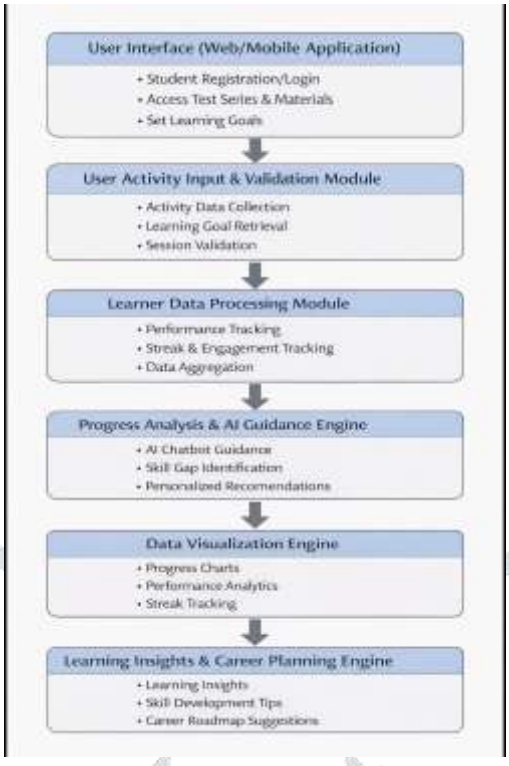

Figure 1 illustrates the high-level architecture of the Eduneptech system, showing the flow of data from user interaction to learning insights and performance analytics. The system is designed using a modular architecture to ensure scalability, flexibility, and efficient data processing. The process begins when a user registers or logs into the platform and accesses features such as test series, study materials, and career roadmaps. User activity data, including test scores, study progress, and streak records, is collected in real time. The data processing module organizes and categorizes learner information into structured formats. Performance metrics are analyzed to identify learning patterns, strengths, and skill gaps. User-defined learning goals are incorporated to personalize recommendations. The AI-powered chatbot module provides instant academic assistance and concept clarification. Adaptive learning suggestions are generated based on individual performance trends. The system aggregates academic data to produce meaningful insights. The visualization module displays results through dashboards, charts, and progress reports. Learners can track their academic growth and consistency through these insights. Career roadmap analytics help align skills with industry requirements. The architecture ensures secure data handling and smooth system operations. Overall, Eduneptech transforms raw learner data into actionable academic and career intelligence.

IV. RESULTS AND DISCUSSION

The implementation of Eduneptech demonstrates the effectiveness of visualization-driven learning analytics in improving user understanding of academic performance and learning progress. The system successfully transforms raw learner activity data into structured visual summaries that highlight study patterns, skill development, and progress toward learning goals.

Figure 2: Learning Overview screen

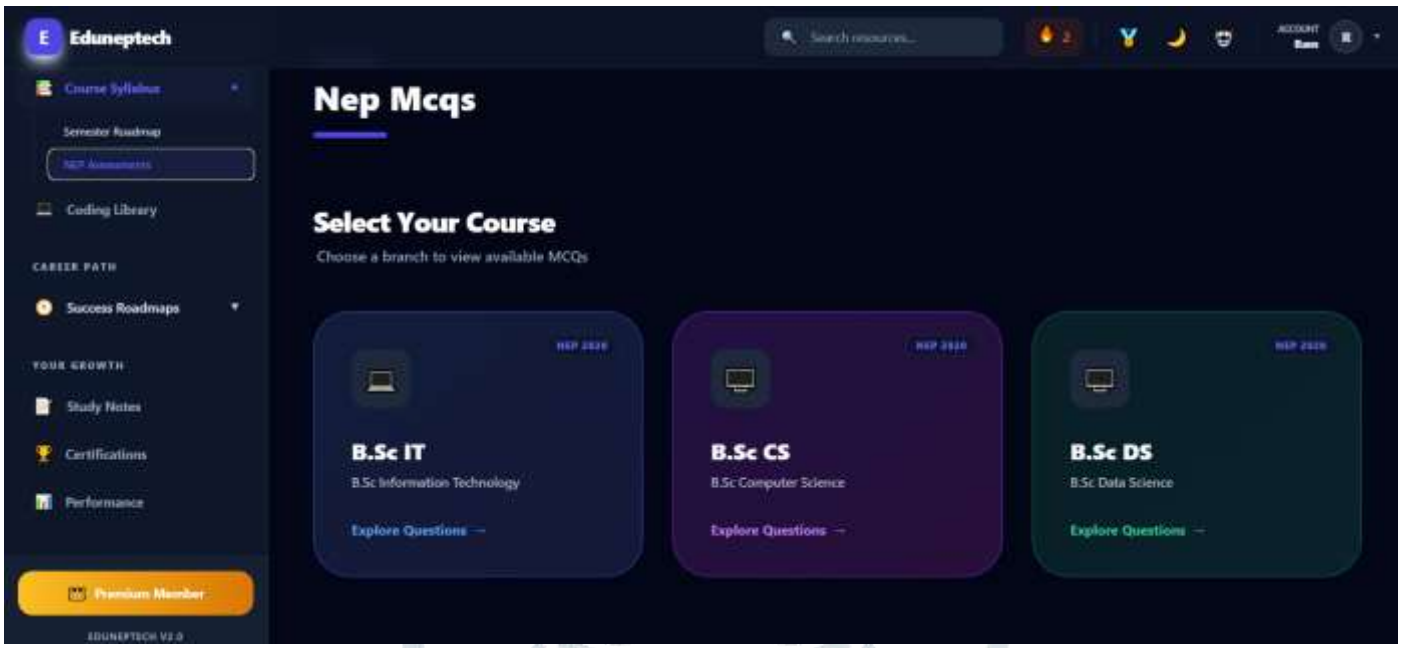

Figure 2 illustrates the Learning Overview screen of Eduneptech, highlighting how aggregated academic data is visually represented for quick comprehension.
The Learning Overview dashboard provides a high-level summary of overall academic progress and performance across different subjects and modules, enabling learners to quickly identify strengths, weaknesses, and areas requiring improvement.

Figure 3: Detailed performance Overview

Figure 3 The Detailed Charts screen supports deeper performance analysis through comparative graphs and progress charts, while the Get Suggestions screen presents personalized academic recommendations and improvement tips in clear and concise language. Additionally, Eduneptech includes a convenient profile and user account screen, allowing users to manage personal details, track learning history, and monitor achievements.

Figure 4: Dashboard Screen of Eduneptech

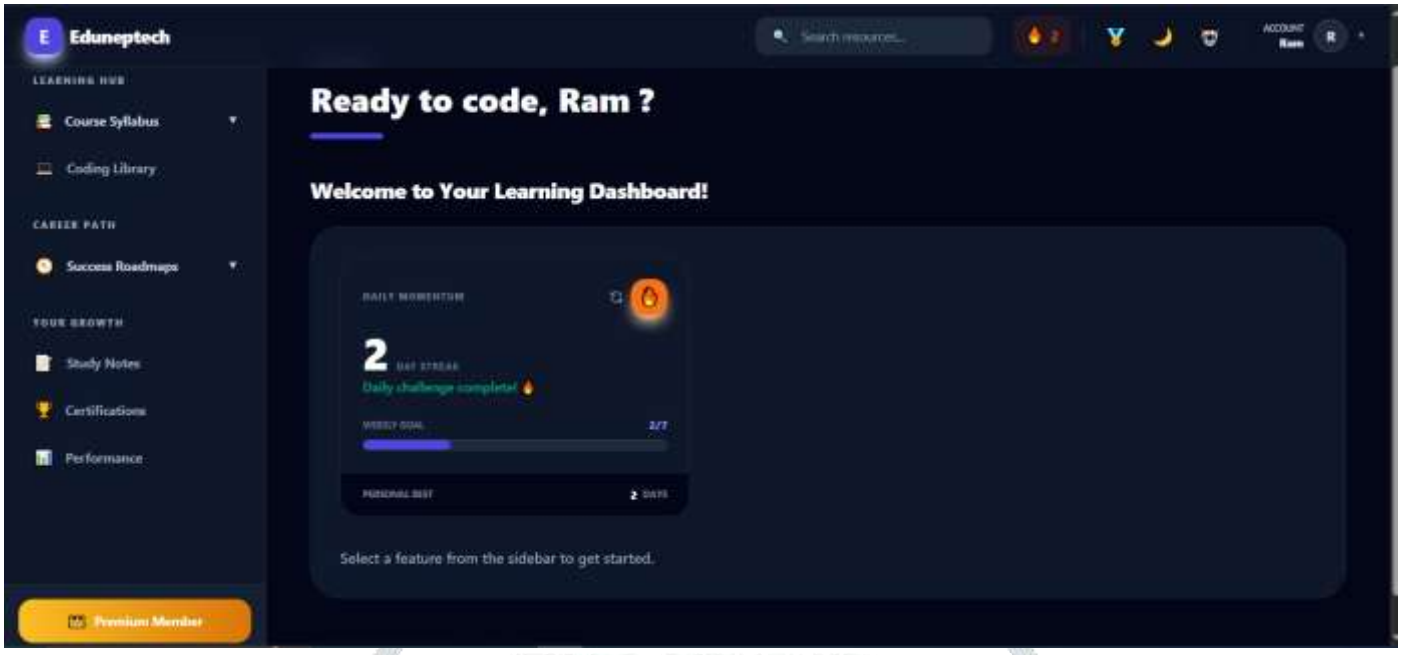

Figure 4 Illustrates the Dashboard Screen of Eduneptech serves as the main interface of the Eduneptech platform. It provides users with a centralized view of syllabus content, learning modules, and platform features. Students can easily access programming languages, career roadmaps, and uploaded study materials. The dashboard supports semester-wise navigation for structured academic learning. It helps users track learning progress and academic activities efficiently. The interface is designed to be user-friendly and visually organized. Quick navigation options improve accessibility and learning productivity. The dashboard enhances personalized learning experiences. It enables students to manage their academic resources effectively. Overall, the dashboard improves learning engagement and usability within the Eduneptech platform.

Figure 5: Illustrates Secure User Authentication and Data Access

Figure 5: Illustrates Secure User Authentication and Data Access
Eduneptech supports secure access to user accounts and protected learning data. When a user logs into the platform, the system verifies credentials through secure authentication mechanisms before granting access to personalized learning resources, test records, and progress analytics. This ensures that academic data is accessed only by authorized users.

The authentication and verification process is handled securely, and sensitive user information is not stored beyond necessary session usage, preserving data privacy and security. This mechanism enables Eduneptech to maintain high standards of user trust, data protection, and secure learning environment, while supporting personalized and confidential academic progress tracking.

V. CONCLUSION

This paper presented Eduneptech, a user-centric educational technology platform designed to simplify and enhance the learning experience for Computer Science and Information Technology students. By emphasizing learning analytics, visualization, usability, and personalization, Eduneptech enables learners to better understand their academic progress, skill development, and career readiness without relying on complex manual evaluation methods.

The findings demonstrate that meaningful academic insights can be derived from learner activity data, highlighting the value of visualization-driven learning analytics and AI-supported guidance in modern digital education. The platform effectively bridges the gap between academic learning and industry requirements by promoting structured practice, consistency, and career-oriented growth.

VI. FUTURE SCOPE

Future enhancements to Eduneptech may include support for advanced AI-based personalization, machine learning–driven performance prediction, and adaptive content recommendation systems to further improve learning outcomes. Additional improvements may involve mobile application development, integration with institutional Learning Management Systems (LMS), and real-time mentoring features to provide more interactive and scalable educational support.

VII. ACKNOWLEDGMENT

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