

An online educational system created to present training materials and courses in a way that actively engages users is known as an interactive e-learning platform. Interactive content enables dynamic engagement, in contrast to typical e-learning systems that may mostly rely on static information (such as text-based lessons or pre-recorded lectures). This comprises functionalities that facilitate bidirectional communication, instantaneous feedback, cooperative exercises, and flexible educational opportunities. The goal of this project is to create an e-learning platform that incorporates cutting-edge features to improve the online learning environment. Exam monitoring tools, a communication system for student alerts, a face emotion detection subsystem, and content integration through the YouTube Data API make up the entire system. By offering interactive and adaptable learning features, encouraging efficient monitoring, and guaranteeing individualised communication, this platform seeks to enhance the online learning environment.

The system's main goal is to establish a safe, interactive online learning environment that allows for real-time participation and performance and behaviour monitoring of students throughout courses and tests. A feasibility study demonstrated the platform's potential for broad adoption in educational institutions across the globe and validated its technological, marketing, and financial sustainability. The method uses a Random Forest classifier to recognise emotions and MediaPipe to detect face landmarks. Python, PHP, and SQL are used to construct additional functionality for data integration and management. Comprehensive local simulations utilising XAMPP will be used for testing, and performance data and real-time user interactions will be used to assess each subsystem's effectiveness.