

An Abstract
On
Codenest : Unified Coding Platform

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Codenest : Unified Coding Platform

ABSTRACT

This project introduces **CodeNest**, a comprehensive platform designed to unify coding practice, performance tracking, and guided learning assistance, addressing the inefficiencies of fragmented tools currently used by students and educators in technical education. The research focuses on the problem of disjointed coding environments and limited pedagogical oversight, posing the question of how technology can consolidate coding resources, provide real-time error support, and deliver actionable analytics for both learners and faculty. The objective is to create a scalable web-based system that integrates competitive programming platforms, an embedded coding environment, and an intelligent chatbot assistant, resulting in improved transparency, personalized guidance, and enhanced engagement. To achieve this, we utilized structured workflow design, role-based authentication, and analytic reporting methodologies to build and evaluate a fully functioning platform.

The results demonstrate that centralizing coding activities significantly improves student self-assessment, accelerates skill acquisition, and enables educators to monitor progress with greater efficiency. These findings indicate that the proposed system successfully bridges the gap between coding practice and intelligent tutoring, enhancing both learning outcomes and instructional effectiveness. The implications of this research suggest that such a platform can be widely adopted in academic institutions and training environments, ultimately fostering stronger collaboration, systematic skill development, and a more impactful coding education ecosystem.

PROJECT GUIDE

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