CodeWave Coding Platform

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Abstract: *The rapid evolution of technology necessitates robust coding education platforms tailored to modern learners. This paper presents **CodeWave**, an innovative coding platform designed to address gaps in traditional coding education by fostering engagement, collaboration, and skill development among college students. CodeWave integrates gamification, community-driven learning, and adaptive technologies to create an immersive educational environment. Key features include streak monitoring, real-time code submission, solution videos, leaderboards, and monthly coding contests. The platform's development followed a user-centered design methodology, incorporating literature reviews, user surveys, prototype testing, and expert consultations. Results indicate enhanced student engagement, improved learning outcomes, and the formation of a supportive coding community. The paper concludes with actionable recommendations for future enhancements, emphasizing personalization, accessibility, and industry collaboration. This research underscores the potential of technology-driven platforms to democratize coding education and prepare students for careers in the digital age.*

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