

Research on some database security and safety solutions applied for the Department of Education and Training of Quang Ninh Province

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Abstract: This study investigates security and safety solutions for database systems, specifically applied to the Department of Education and Training of Quang Ninh Province. As educational institutions increasingly digitize administrative and academic data, the protection of sensitive information against unauthorized access, data breaches, and system failures becomes critical. The research analyzes current security vulnerabilities within the department's database infrastructure, including risks related to user authentication, data integrity, and access control. It proposes a comprehensive framework integrating encryption techniques, role-based access control, backup and recovery strategies, and intrusion detection mechanisms tailored to the organizational context. The proposed solutions aim to ensure data confidentiality, availability, and integrity while complying with Vietnamese regulatory standards. Practical implementation guidelines are provided to enhance the department's resilience against both internal and external threats. The findings contribute to the broader field of database security in public sector education management, offering a replicable model for similar provincial departments.

Keywords: Database security, data security, security solutions, Quang Ninh Department of Education