

**G. Narayanamma Institute of Technology & Science (For Women) (Autonomous)**

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Accredited by NBA & NAAC, an ISO 9001:2015 Certified Institution
Shaikpet, Hyderabad-500104

Department of Information Technology

GNR- 22 , (2025 - 2026) IV B.Tech II Sem Minor Degree Mini project
on **“Secure File Vault with Encryption & Access Logs”**

Abstract

Secure storage of digital information is a key requirement in modern cybersecurity due to the growing number of sensitive data being stored and saved. Traditional file storage systems often keep data in plain form making them vulnerable to unauthorized access and data breaches. Cryptography offers an effective solution by ensuring the confidentiality and integrity of stored data. This project focuses on the design and implementation of a cryptography based secure file vault system to protect user files. The system uses the Advanced Encryption Standard (AES) Algorithm to encrypt files before storage and secure hashing techniques to safeguard user credentials and verify data integrity.

The proposed system is a lightweight, user friendly web application that demonstrated practical aspects of information retrieval of files, highlighting the real world application of cryptographic techniques for protecting sensitive data. User authentication and access control mechanisms are implemented to ensure that only authorized users can access stored files. The system also maintains basic access logs to monitor file operations and enhance accountability. This project serves as a simple yet effective model for understanding secure data at rest mechanisms used in modern applications.

Software Requirements: Python, Flask, Cryptography / pycryptodome, hashlib, SQLite.

Software Requirements: Intel i3, 4GB RAM, 64-bit machine, Internet connection.

*Dept R&D: Yes / No

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Internal Guide

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