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Mini project

Idea Abstracts

**TITLE: Secure File Sharing System with Encryption**

**AREA: CYBERSECURITY AND CRYPTOGRAPHY**

**and Decryption**

**Abstract:** The Secure File Sharing System is designed to provide a robust and confidential platform for sharing sensitive digital files over a network. This project implements **advanced encryption and decryption** techniques to ensure data security and privacy. The core focus is on protecting files from unauthorized access by utilizing symmetric encryption algorithms like **AES** and asymmetric encryption techniques such as **RSA** for key exchange.

The system incorporates secure key management practices, ensuring the secure generation, distribution, and storage of **cryptographic keys**. To enhance security, **multi-factor authentication** (MFA) is integrated for user identity verification, preventing unauthorized access. **Secure transmission channels, such as TLS**, are used to safeguard data during transit.

**Key features:** include **role-based access control (RBAC)** to restrict file access, **real-time encryption and decryption**, and **a comprehensive audit logging** mechanism to monitor file-sharing activities. The project emphasizes usability with a user-friendly interface for file uploads, encryption, decryption, and access management.

This secure file sharing system is suitable for organizations and individuals requiring a reliable solution for transmitting sensitive information while ensuring **data integrity and confidentiality**. The implementation aims to balance high security with performance efficiency, making it an ideal choice for secure digital collaboration.

**AREA: WEB SCRAPING**

**TITLE: The Automated Internship Discovery and Engagement Platform**

The **Automated Internship Discovery and Engagement Platform** streamlines the internship search process using advanced web scraping technologies like **BeautifulSoup and Scrapy**. It automates the retrieval of real-time internship listings from multiple job portals, ensuring users have access to the latest opportunities. With **search and filter options**, users can customize their search based on job title, location, or industry. The collected data is organized into user-friendly formats such as CSV files or databases, making it easy to analyse or reference.

To boost user engagement, the platform incorporates a **gamified experience** where users earn points, unlock badges, progress through levels, and compete on leaderboards. These elements motivate users to engage continuously with the platform, turning the job search into an interactive experience. Additionally, its **modular and scalable design** allows for future expansions, including new job boards, features, and tools to enhance user engagement.

Designed for students and job seekers, the platform combines automation and gamification to simplify internship discovery while fostering professional growth. By offering an efficient and engaging approach, it empowers users to navigate the competitive internship market and improve their chances of securing ideal positions.

**AREA: CYBERSECURITY AND BLOCKCHAIN**

**TITLE: Blockchain-Based Certificate Verification and Generation**

**Abstract:** In today’s world, fake and tampered certificates have become a growing concern for educational institutions, companies, and other organizations. To tackle this issue, we propose a blockchain-based system for generating and verifying certificates securely. Using blockchain technology, we can ensure **that certificates are tamper-proof, transparent, and easy to verify**.

When a certificate is issued, its key details are **hashed and stored on the blockchain, creating an immutable record**. Verification becomes simple—anyone can check the certificate’s authenticity by comparing its details with the blockchain. The system is designed with a user-friendly interface for easy certificate creation, storage, and verification. We also integrate features like **QR codes** for quick access and use an environmentally friendly blockchain to reduce costs and energy usage. This project aims to make certificate management secure, reliable, and efficient for institutions and organizations.

The system hashes these details and stores them on the blockchain, making them immutable. A simple verification portal allows users to validate certificates by entering the unique ID or scanning a QR code embedded in the certificate.

Features like **certificate revocation, customizable templates, multi-language support, and mobile compatibility** add flexibility. Advanced security tools such as **encryption, tamper alerts, and multi-factor authentication** ensure data integrity. Additionally, analytics dashboards provide issuers with valuable insights into certificate use and verification trends, making the system powerful and practical.