Minor Project Submission

"3ncrypt"

Our project, "3ncrypt" is a simple file encryption tool with a graphical interface built using Python's Tkinter and the standard Python Cryptography library. It lets users easily encrypt and decrypt files on their computer to keep their data secure.

Key Features:

1. The application has a straightforward GUI built with Tkinter, allowing users to select files to encrypt or decrypt them with a few clicks.
2. Using the Cryptography library, the tool provides strong encryption (AES) to protect files. Users can secure files with a secret key that is required for decryption.
3. Users can input a key during the encryption process, and later use it during the decryption process. The same key is used for both encryption, and decryption, since the encryption algorithm used is symmetric in nature.
4. The app includes basic error handling, so it guides users through issues like incorrect keys, file permissions, or unsupported file formats.
5. Since it's written in Python, the tool can potentially run on Windows, macOS, and Linux, if the dependencies for the tool's installation are met. The usage of our tool is easiest on Debian based Linux distributions, where we can just proceed with installing the `python-cryptography` and `python-tk` packages for the dependencies of execution to be met.

How It Works:

- The Tkinter GUI allows users to browse and select files.
- With the Cryptography library, users can encrypt and decrypt a given file.

Use Cases:

- **Personal Data Protection**: Users can encrypt private files, keeping them secure on their computer or in the cloud.
- **Backup Security**: Encrypting files before backing them up adds an extra layer of protection in case of data breaches.

This tool provides a quick and easy way for anyone to secure their files, with the added convenience of a simple, user-friendly interface.

Future Scope (To be considered for integration in Major Project):

- **File Sharing Integration**: A method to integrate file sharing with our current tool would make it more feature rich for use case scenarios like transferring data in an encrypted format.