Project title: Encryption & Decryption

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Introduction

Encryption and Decryption are techniques used to keep information safe from unauthorized users. **Encryption** changes normal, readable text into a secret coded form so that no one can understand it without permission. **Decryption** is the opposite process, which converts the secret coded text back into its original readable form.

This project is a **beginner-level, web-based application** designed to help users easily encrypt and decrypt text. It provides a **simple and user-friendly interface**, allowing users to protect their data and understand the basic concepts of data security in a practical way.

Problem Statement

In today's digital world, data security is very important. Normal text can be easily read or misused by others. There is a need for a simple system that can secure data by converting it into an unreadable format.

Objectives

The main objectives of this project are:

- To understand and implement basic authentication using signup and login pages.
- To demonstrate encryption and decryption of text using a free API.
- To create a single-page web interface that is user-friendly and secure.
- To teach practical cyber security concepts such as secure data handling, API integration, and client-server communication.

Methodology

- First, the problem of data security was identified.
- A simple web interface was designed using HTML and CSS.
- JavaScript was used to take input text from the user.
- A free API was integrated to encrypt and decrypt the text.
- The output is displayed on the web page.
- The project was tested using different inputs.
- Allow users to securely create an account and log in.

Tools and Technologies Used

- **HTML** – for structure of the web page
- **CSS** – for designing the user interface
- **JavaScript** – for encryption and decryption logic
- **Free API** – for encryption/decryption process
- **Web Browser** – to run the project

Output

The project successfully encrypts plain text into encrypted form and decrypts encrypted text back into readable form. It works smoothly in a web browser and provides quick results.

Conclusion

This project helped in understanding the basic concept of encryption and decryption. It also improved practical knowledge of web technologies like HTML, CSS, and JavaScript. The project is simple, user-friendly, and useful for beginners.