CRYPTORAMA

A MAD6135 FINAL PROJECT

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Course : MAD6135
Schedule : B230AM

Overview

Cryptorama is a simple website where a user can encrypt his/her text file and can decrypt the encrypted text file without registration. This website is implemented using JavaScript programming language developed in Visual Studio Code.

Purpose

To develop a web application that covers JavaScript Fundamentals discussed in course MAD 6135 to validate what the students have understood in the course.

To develop a web application not only for the purpose of MADT 6135 course completion but as well as to produce an awesome project where team members not only does the development but as well as appreciate each project stories and take benefit of every functionality.

Repository

All documents and code for ***Cryptorama*** are centralized and are uploaded for easy tracking and revisioning.

Document Sharepoint Link:
https://mylambton.sharepoint.com/:w:/r/sites/crypto/Shared%20Documents/CRYPTO.MAD6135PROJECT_SPECIFICATIONS.docx?d=wa426b5452bc745168c39f3e869f03afd&csf=1&web=1&e=OxkoC9
Note: Documents are also committed in GitHub

Github Link: *https://github.com/otetLopez/crypto.git*

Functionality and Features

A. Home
Displays Cryptorama home page and application overview.

B. Upload
The user will upload a text file he wishes to encrypt or decrypt via browser. User will be asked for a custom password that will be used for encryption and decryption for every file upload.

C. Encryption
The uploaded text file will be encrypted via browser and its algorithm is based on the custom password that has been inputted by the user.

D. Decryption
The decryption is done via browser and its algorithm is based on the password that the user has inputted. If the password is incorrect, the file that a user will be downloading will still not be human-readable. Decryption will only be successful if the encrypted file is generated using ***Cryptorama***.

E. Download
User can download the file that has been uploaded and processed via browser.

F. Security
The user will be asked for custom password whenever he/she uploads a file, and the uploaded file will be encrypted, or the encrypted file will be decrypted.

Tools

The following are the tools used for the completion of this project

1. IDE: VS Code
2. Node JS
3. Browser: Chrome/Mozilla
4. Ajax

Implementation

This application is implemented using HTML, CSS and JavaScript. Codes are implemented in GitHub as indicated in this document, under **Repository**.

All files are organized into different folders for clean development, easy maintenance, and easy debugging.

JAVASCRIPT IMPLEMENTATION

The JavaScript Implementation is modularized into separate files for easy tracking. There are 4 total JS files in this project namely

- file.js
  This file contains the class declaration of the file. It is being imported by the rest of the JS files in order for it to create instances if this class.

- script.js
  This file serves as the main file and contains the main function of the application. It is triggered by the web's events and does the handling of the process. Error trapping on file uploaded is also being handled in this file. It converts the uploaded file first into text before encrypting or decrypting. Downloading file is also being handled in this file.

- decryption.js
  This implements the functionality of decrypting an encrypted file

- encryption.js
  This implements the functionality of encrypting an encrypted file

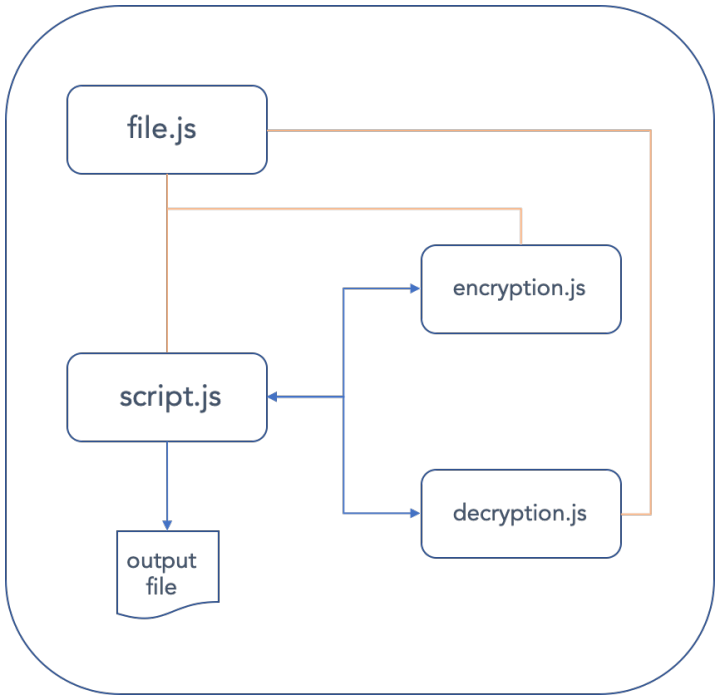

Figure 1 JavaScript Implementation

HTML/CSS IMPLEMENTATION

In order for this project to be complete and functional, the user interfaces with the program via Web Browser. There are 4 pages in this application and are implemented in separate HTML files. All of these HTML files are displayed in style by using CSS.

- Home Page
  A Home Page is implemented as a standard web design. This will have links to other pages; Encryption, Decryption, and About.
- Encryption Page
  This is the page where a user can upload a file and do encryption. Once a file is encrypted, the user has the option to download the encrypted file.
- Decryption Page
  This is the page where a user can upload a decrypted file and encrypt it. Once a file is decrypted, the user has the option to download the decrypted file.
- About Page
  This page gives a little information what the application is about.

Testing and Debugging

The application is tested using Chrome Browser, and logging consoles.

	Test Case	Expectation	Result
1	Upload a file	File is uploaded	PASS
2	Encrypt File	File will be successfully encrypted	PASS
3	Download Encrypted File	Encrypted data will be downloaded. When file is opened, data is encrypted.	PASS
4	Decrypt encrypted File	File will be successfully decrypted	PASS
5	Download Decrypted File	Decrypted data will be downloaded. When file is opened, data is decrypted and is readable.	PASS

Table 1 Normal Flow Test Case

	Test Case	Expectation	Result
1	Upload empty file and encrypt	Cryptorama notifies user that file is empty	PASS
2	Upload empty file and decrypt	Cryptorama notifies user that file is empty	PASS
3	Encrypt/Decrypt with no uploaded file	Cryptorama notifies user that there is no file being uploaded	PASS
4	Encrypt a file that is already encrypted	Cryptorama notifies user that the file he/she wishes to encrypt is already encrypted	PASS
5	Decrypt a file that is not encrypted or encrypted but not via Cryptorama	Cryptorama notifies user that the file is not encrypted or encrypted but not via Cryptorama	PASS
6	Decrypt using an incorrect encryption code	Cryptorama notifies user that the inputte code does not match with the code used during encryption	PASS

Table 2 Negative Testing Cases

The Application

Note:
These views are zoomed out 50% for the purpose of displaying the page contents without scrolling.

HOME PAGE

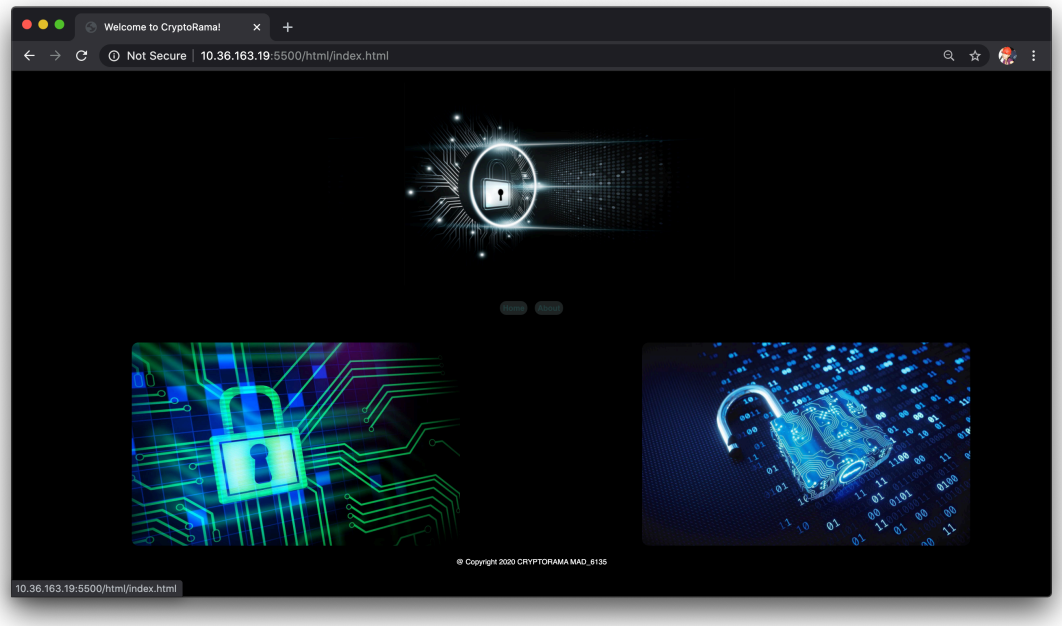

Figure 2 Zoomed Out By 50% Home Page

ENCRYPTION PAGE

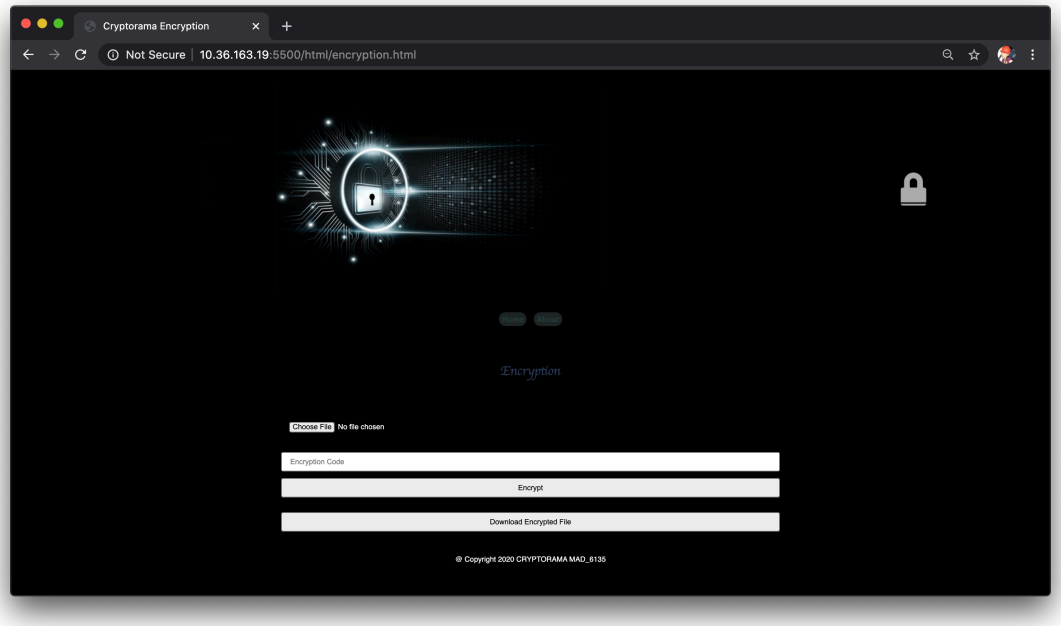

Figure 3 Zoomed Out By 50% Encryption Page

DECRYPTION PAGE

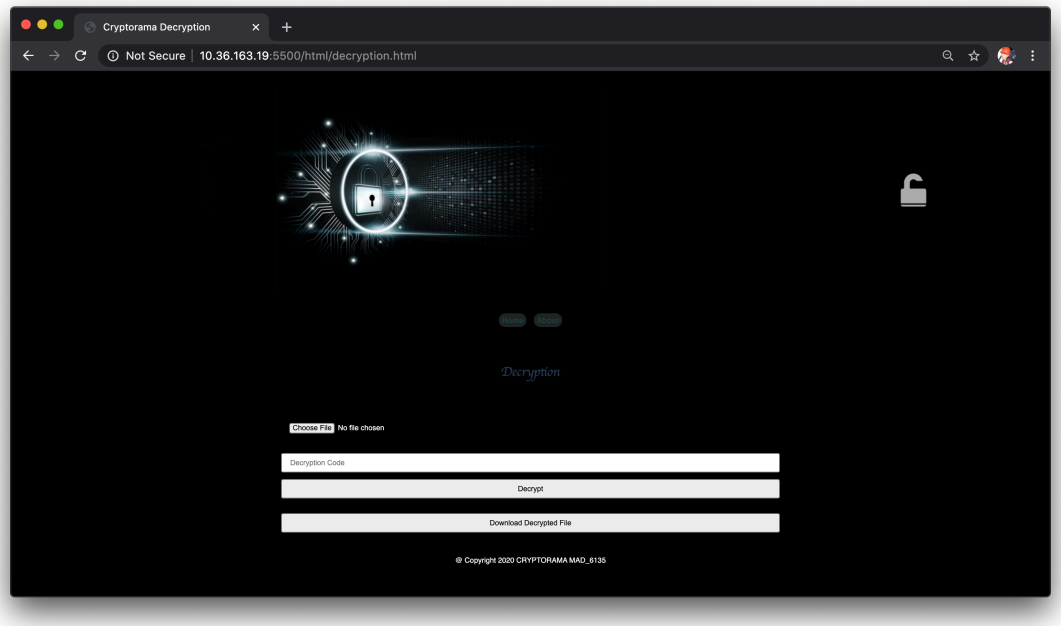

Figure 4 Figure 3 Zoomed Out By 50% Decryption Page

ABOUT PAGE

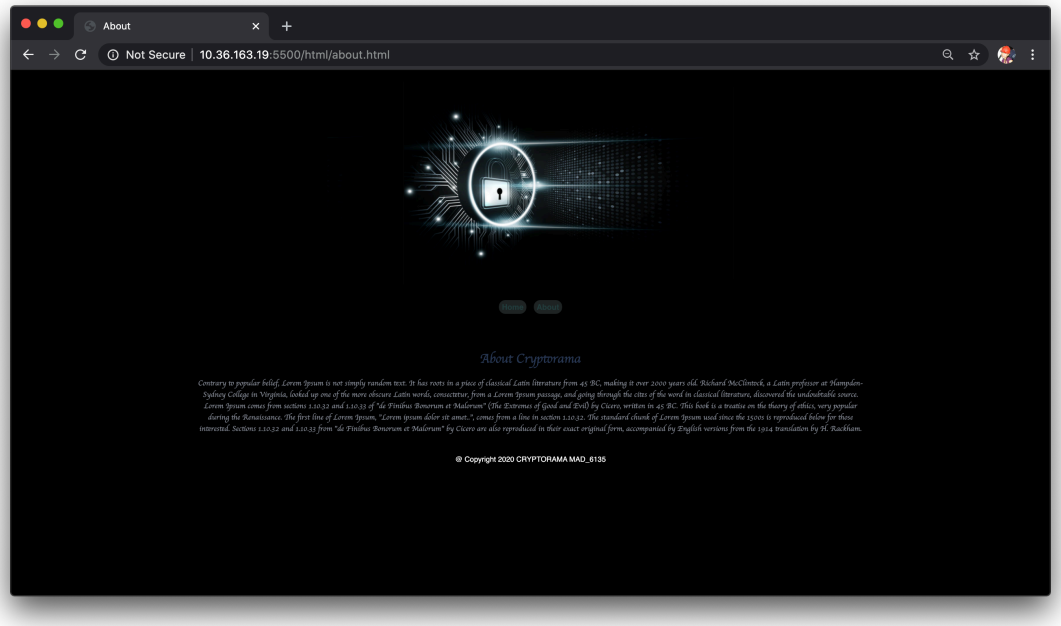

Figure 5 Figure 3 Zoomed Out By 50% About Page

Demonstration

A video demonstration is attached along the submission with this project.

Conclusion

There may be sites that does file sharing privately, and safely but this project's objectives are for the benefit of the team members to:

- Understand and enhance JavaScript as well as HTML and CSS skills of the team members
- Learn how to upload file into Web
- Learn how to download a file from Web
- Learn how to decrypt/encrypt files

-------- Live Long & Prosper --------

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