

# Coursework Report

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## 1 Introduction

By examining a range of websites on the topic of cryptography I have decided to implement Caesar cipher, Atbash cipher and Vigenere cipher as they are fairly easy to understand and easy to implement, however they have been one of the most widely used scripts in the past. The website is consistent of four separate pages - each cipher has its own page where you can cipher and/or decipher text, and an index page, from where you can navigate through the website.

## 2 Software design

I have decided to use hierarchical design for the website, where you can access any page from anywhere on the website. I found that this was going to be the best practice as I have only planned to use three different ciphers. I have put the formatting in a single .css file which I use on each page. The actual ciphering is in separate .js files.

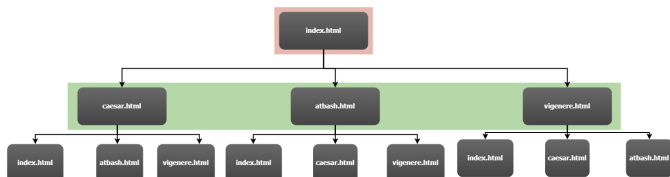
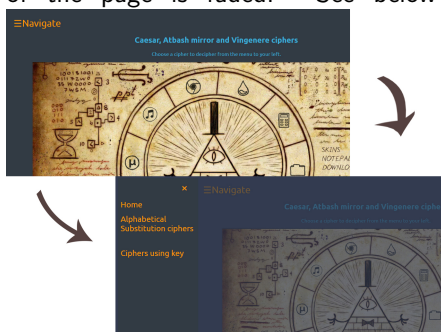


Figure 1: **Navigation** - Sketch of navigation of the website

## 3 Implementation

I have used side navigation in the website as it is pleasing to the eye as well as it is functional as well. When navigation is opened the main focus is put on the navigation and the options you have while the main part of the page is faded. See below in the illustration.



### 3.1 Submenus

Also I have used submenus in the main menu - they are expanding as the user hovers over them with the mouse.

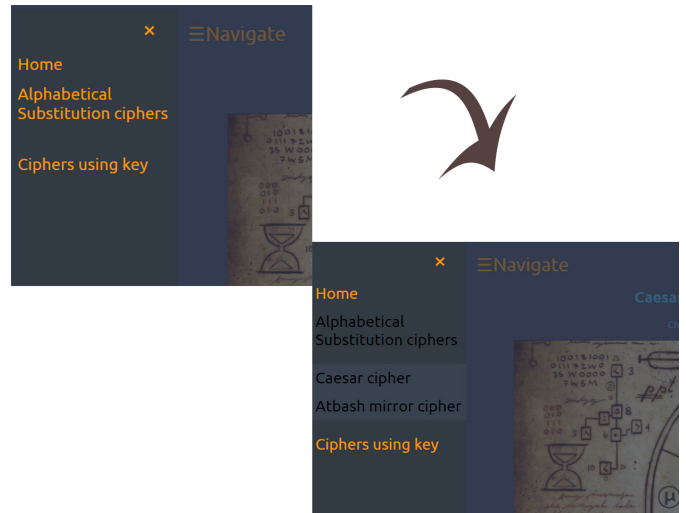


Figure 2: **Navigation-** Submenu

### 3.2 Pages

On each page you have the option to cipher and/or decipher text, also you can choose how many letter the shift would be for certain ciphers.

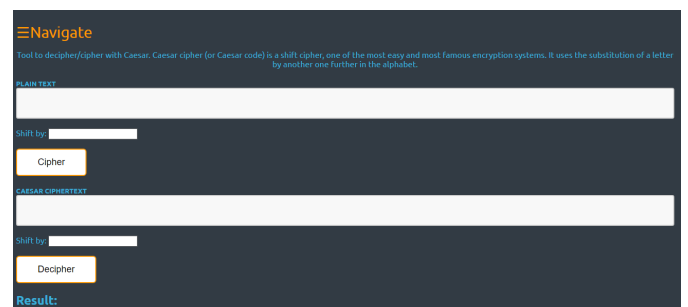


Figure 3: **Caesar cipher-** Cipher/Decipher

## 4 Critical evaluation

The assignment has been fulfilled as per specification, however, due to time constraints I wasn't able to implement deciphering part for the Vigenere cipher. The interface could

be improved as well, adding a bit more functionality and a bit more of a background to the ciphers.

## 5 Personal evaluation

I have learned a lot about CSS, and how powerful it can be when designing web pages. Having to use JavaScript as language for building the ciphering/deciphering parts of the assignment I really enjoyed learning more than just the basics of the JavaScript language. Learning the syntax of a new language is always a challenge, however I found JavaScript's syntax really close to some other languages which helped me.

## References

Image used in the website -  
[https://pre00.deviantart.net/098e/th/pre/f/2013/208/3/d/cipher\\_by\\_tickdudeseven-d6fhz2p.jpg](https://pre00.deviantart.net/098e/th/pre/f/2013/208/3/d/cipher_by_tickdudeseven-d6fhz2p.jpg)