

Coursework Report

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1 – Introduction

This report will detail the work that I completed in the development of designing and implementing a website which would allow users to use two cypher encoding methods. The website should allow the user to select between the different ciphers such as a dropdown box or another page and for a way for the cypher to be compiled. For my website I have decided to include three different ciphers for the user to navigate interact with, these are: Caesar Cipher, Base64 and ROT-13. The first page will be the main page, explaining the purpose of the website and what they can expect on it, the second, third and fourth page will be for the cypher encoding methods which will be implemented into my website. To allow a seamless transition for the user when using the website, a navigation bar will be fixed to the top of the website which will allow a free flow navigation from each of the pages allowing them to go back or to another page from any part of the website they're on. I have learnt briefly about these ciphers during my time at university and feel happy with implementing them to my website.

2 – Software Design

Before beginning the implementation of my website, I spent some time thinking about how I would want my website to be presented. My main goal was to develop a website that was well presented, easy to use and navigate through. I wanted the website to look modern and the information the user is requesting easy to find and read. To help with designing the sketches of the website I used a free online diagram tool to develop what I had thought about.

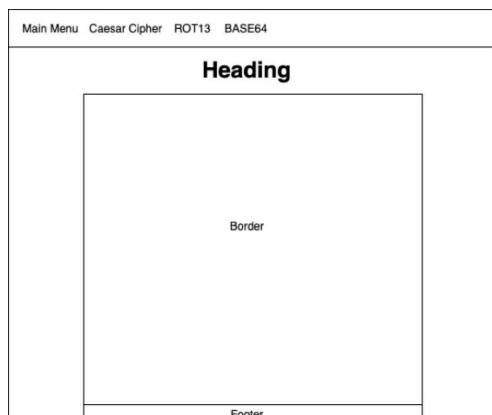


Figure 1: Website Design

From the figure above I went with a simplistic design. A navigation bar at the top of the website, with clickable links for the user to navigate to another page of the website. Below the navigation bar I have placed the header, for whichever page that the user is currently on such as the ROT-13 page of the website the heading will be set to "ROT-13". Below the heading I then decided to include the use of borders on my website. I chose to implement borders as I want the contents of my website to be in the centre of the page, directly in front of the user's attention. There is also a footer at the very bottom of the webpage which will contain my details. Each of my web pages will be implemented with the sketch that I had made, but on the cypher sections of the website they will contain text boxes, buttons, information about the specified cypher and a YouTube video which will give some more explanation about that cypher. The text boxes and buttons will allow the user to interact with the cypher. HTML and JavaScript files would be split from each other, so I would call in the specific JavaScript into the specified HTML page. A CSS file would also be implemented, so I could design how I wanted my website to look and just like the JavaScript call it into each of the HTML pages without having to constantly rewrite the same code repeatedly.

Figure 2 below displays how the navigation of the website should be, I should have the ability to navigate from any page I want without having to go through a middle page.

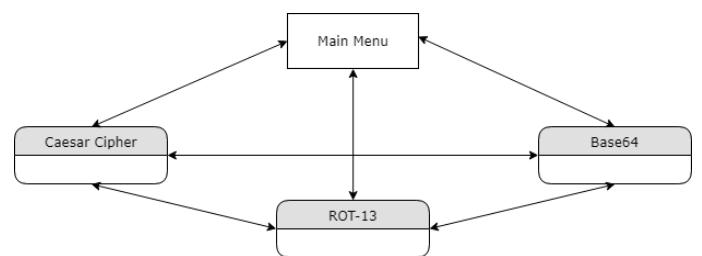


Figure 2: Flow Diagram

3 – Implementation

For the implementation process I used a program called Brackets to write my HTML and JavaScript files required for the website. With the sketch I had made of my initial design of the website I had created what I wanted. I set the colours of the nav bar to black and when you are on a page e.g. the Main Menu a pink bar will be hovering over the current page link to

let the user know what page they were on. I set the colour of the border to black but added some transparency to it so you can also see the background through the border. The font of the text is set to white, the font used is Sans-Serif and finally with the background of the website an image of the night sky, giving a warm vibe to the website. All the pages on my website will stick to the same design choice. Each cypher page has an explanation of what this cypher is and how it works, there is also a clickable link to an external page for the user should they wish to learn more about the cypher. There is also some images and a YouTube video on said cypher for the user to engage with.

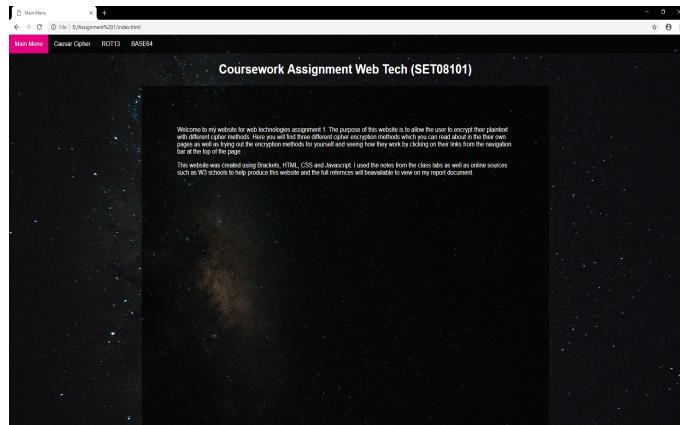


Figure 3: Main Menu

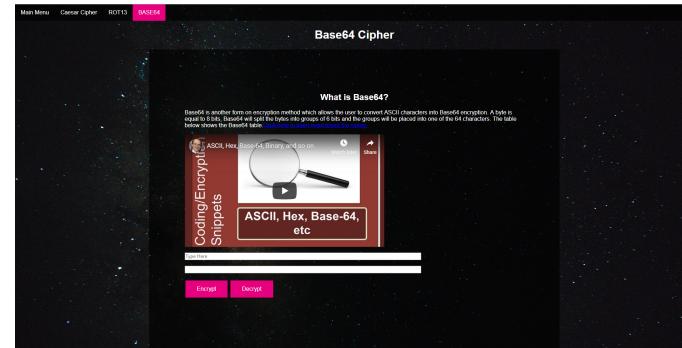


Figure: 6 – Base64

4 – Critical Evaluation

The requirements of the project were to create a website with two or more cyphers to interact with as well as a way for the user to navigate through. With my website completed I feel satisfied that I have achieved the requirements that were set for me. My website is easy to navigate through, is organised properly and looks professional. There are other non-required features that I have included in my website such as images and YouTube videos as I believe that this enhances the usability and overall presentation of the website. I was able to implement the cyphers that I had wanted, this was a good challenge for me as I haven't used JavaScript in a very long time.

Some improvements I would have liked to have added to my website would features like Night mode, allowing the user to switch from a dark themed website or a lighter themed website.

5 – Personal Evaluation

From this coursework I feel very confident that I can now produce a good quality website in the future. I would have liked to have spent more time researching more about HTML/JavaScript and how I could improve my HTML/JavaScript skills for future projects. I will aim to learn more about JavaScript and hopefully improve my overall skills.

6 – References

- <https://asecuritysite.com/cryptobook/crypto01>
- https://wallpaperscraft.com/download/starry_sky_galaxy_universe_sky_night_118591/1920x1080
- <http://practicalcryptography.com/ciphers/caesar-cipher/>
- https://www.youtube.com/watch?v=o6TPx1Co_wg
- <https://www.youtube.com/watch?v=JxYrf1tJ9GE>
- <https://www.youtube.com/watch?v=VbbOF0OPegc>

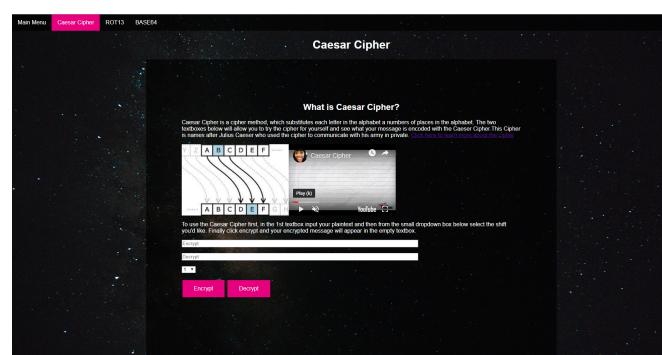


Figure 4: Caesar Cipher page

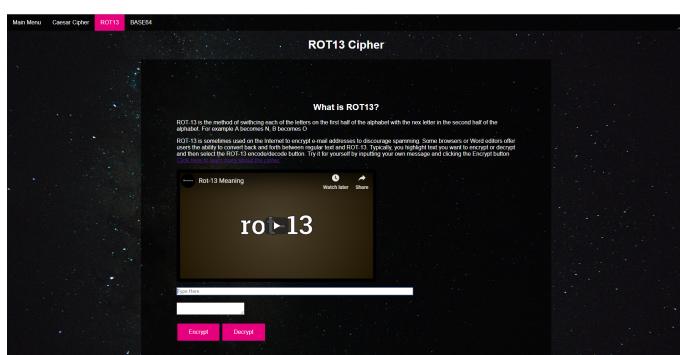


Figure 5: ROT-13

<https://en.wikipedia.org/wiki/Base64>

<https://en.wikipedia.org/wiki/ROT13>

https://en.wikipedia.org/wiki/Caesar_cipher

https://www.w3schools.com/tags/tag_select.asp

https://www.w3schools.com/css/css_border.asp