

Coursework Report

Hristos Petrov

40326477@napier.ac.uk

Edinburgh Napier University - Web Technologies (SET08101)

Abstract

This report is going to cover a brief overview of a website which enciphers and deciphers messages. It will evaluate the choice of code and ciphers. In addition it will describe a planned approach and it's associated artefacts prior to the creation of the website. The report will also include a short description of the website's implementation as well as it's critical evaluation. Lastly, it will include a personal evaluation reflection on the gained knowledge, challenges and the overcoming of these challenges.

Keywords – web, development, website, report, ciphers, html, css, javascript, code

1 Introduction

The aim of the assignment is to plan, design and create a website consisting of a set pages about classical ciphers. The website should be implemented using HTML, CSS and JavaScript. Use of additional libraries, templates or frameworks is not allowed. The website should consist of a home page and an additional page for each cipher, which is implemented in JavaScript. Each cipher page must include a text area for text input and another text area for outputting the enciphered or deciphered text. The created website consists of a home page and three additional cipher pages, which include - Atbash cipher, Caesar cipher and Morse code. All three pages can be accessed through the main page, and once redirected to them, the user can go back to the home page. The cipher pages are similar in design, all consisting of two text fields and two buttons. The text fields are for inputting text and outputting text. The buttons call JavaScript functions, which encode or decode the text respectively. Background reading was present, and for the most part it consisted in learning about JavaScript, due to the lack of experience with the particular language prior to the start of the coursework. Reading was mostly one on W3Schools.

2 Software design

It was planned that the website will maintain a clean and simple design, which would not serve confuse users. Only the most important and appropriate information would be present, as well as elements which would help the user to encipher or decipher code on the cipher pages. The home page would consist of a paragraph explaining what ciphers

are, and then at the bottom of the page, the names and descriptions of the three implemented ciphers would be present in the form of horizontally aligned paragraphs. Each having a link below it, which would lead to the page of the particular cipher or code. The cipher pages would have a title of the cipher in the top part of the page, followed by a text area where text can be typed or pasted, below the text area two buttons are present, an encoding and a decoding button, after one of them is pressed text is displayed in a text area below them, in an enciphered or deciphered form, depending on the input. The first text area is highlighted when the user loads the page and the second is read only. A common thing between all the pages is that all of them have parallaxes, a simple yet intriguing way of displaying images. Also, effort was made to stick to contrasting colours, for example black and white ones. All of the cipher pages have a link that redirects them to the home page. All hyperlinks are in the form of simple text. The JavaScript code mainly uses key value maps for successfully running its functions. It stores the user input, replaces the characters, and outputs them in their new value.

3 Implementation

The implementation of the website was an ongoing process. The initial plans were gradually implemented and the results were monitored, altering was made where necessary. Effort was made to stick to the main plan, but some minor subtle changes had to be made, seeing that they were not pleasing. This action itself didn't influence the website's functionality or design to a great degree.

4 Critical evaluation of implementation

Possible improvements could be made to the JavaScript code, due to the fact that decode function of the morse code is not fully operational, it is believed that if the string is split in single characters and then replaced with the ones in the morse code decode map, and after that being joined again it will produce the right output. Another thing to consider is that the descriptions of the ciphers is on the home page, rather than their individual pages.

5 Personal evaluation

Aside from learning how ciphers work, their brief history and origins, while doing this coursework knowledge was obtained in other areas as well. One of the more broad ones is about the programming language JavaScript, and particularly, its place within a website implementation. While building the website new and interesting things were also discovered in CSS. The challenges faced were mainly in creating the JavaScript codes for the ciphers. Initially a plan had to be designed on how coding would be approached, due to the fact that a single cipher may be coded in many different ways. Other challenges were present in HTML and CSS too, when an element or new code caused misalignment in regards to other elements from the website, or when something would disappear or not show up the way it is required. The methods used to overcome these challenges were simply based on trial and error, mainly adding or removing code that doesn't seem logically correct, and trying new or simpler ways of coding. In regards to performance, the coursework took more time to complete than it was expected to. This is why it is believed that the coursework did not reach its full potential, and that more subtle, but major changes could have been implemented, which could have led to more satisfying results.

6 References

All images in the website were downloaded from Unsplash.com (website hosting free images for personal and commercial use).