Web Application-Technical Report

Submission		
Student ID	20011299	
Word Count	1162	
Login (Teacher/Admin)	Username: adam123	Password: secret1
Login (2 - Student/User)	Username: james123	Password: secret2
	Username: fiazan123	Password: secret2
URL to Server	https://www.teach.scam.keele.ac.uk/prin/x3f17/WebTech_CourseWork/ Homepage.html	

Task	Comments
Homepage / User Interface	**Completed** The website is built with standards-compliant HTML5 and CSS3, JavaScript, AJAX, JQuery, and PHP for a variety of jobs. User interface design for the layout and structure of the webpages was done using an HTML and a CSS file that used columns and rows for responsiveness. Homepage/user interface includes buttons and a navbar to navigate through the website.
Portfolio	**a) CV: Completed** This page includes a variety of styling for the aesthetics of the page and provides responsiveness.

	b) Rendering Weather Data: Completed
	  (i) **Task 1**- Rendered the daily weather information to display the data for Stoke-On-Trent and London.
	  (ii) **Task 2** – Visualised the weather forecast information using 'Chart.js' and 'JavaScript' libraries for Stoke-On-Trent temperature, wind speed and humidity. Also included the option to change the types of the graph e.g line, bar and scatter.
	  (iii) **Task 3** - Visualised and compared the temperature data for Stoke-On-Trent withing a single canvas object.
	  (iv) **Task 4** - Provided the user with customisation options such as changing the colour and the type of graph and altering the type of data shown e.g. temperature, wind speed.

	c) Login system: Completed Checks information entered against the 'user.csv' file containing the system's users and redirects them based on their authority level (admin or basic user), the authority level is also kept using the PHP session. Teacher/admin can create new accounts giving these new accounts either admin authority (teacher access) or basic user access (student). New account stored in the csv. User can also log out of the system at any point. **Issue -** An issue that I did not have enough time to expand on is that a teacher can create a user with the same username multiple times which could become an issue when displaying attendance.
	submit.php - Complete

Attendance System	Access is given only to student accounts and allows them to submit a new attendance record which is saved in the 'attendance.csv' file using 'saveAttendance.php'.
	List.php - Complete Web page to list attendance records for the logged-in user. If the user is a teacher/admin, then attendance records for all students will be listed. If the user is a student then only their attendance details are displayed. This is implemented using AJAX and JQuery to asynchronously retrieve details, enabling the teacher to press the 'Reload Page' button to check for any new entries. If the teacher would like to view the attendance records of a specific student they must click the 'view' button. **Issue -** A problem that I experienced was when displaying the data in the table it would duplicate so to fix this, I implemented a row ID in the 'attendance.csv' file.
	display.php - Complete Access granted only to teacher. If teacher would like to view specific user details, then clicking the 'view' field in 'list.php' they will be directed to this page to view all attendance records of the specific student who was clicked.

Aims and Objectives:

1. <u>No "dead-end" pages (Navigation)</u> - Ensure that all pages on the site have at least one link back to the home page to avoid the user from being locked out of the site. The key to retaining visitors is to keep the navigation clear, logical, and consistent across all pages (Caplan, 2021).
2. <u>Direct access</u> - Users desire information in as few steps as feasible. Design the site hierarchy so that real material is only a few clicks away from the site's major menu pages (Caplan, 2021).
3. <u>Responsiveness</u> – Pages and content within should respond to different screen sizes rearranging when required to provide a clean interface for the user.
4. <u>Aesthetic and minimalist design</u> - ensuring that information and visual design are focused on the most important aspects. 2021) (Nielsen).
5. Simplicity – Limit the colour palette to no more than 5 high-contrast colours to guarantee that people with colour blindness may still utilise the app (Marianne, 2021).
6. Security – The website should not allow invalid data to be stored and some sort of error prevention should be included.

Aims Achieved:

When designing the website I created a clean menu bar that is easy to use and allows the user to navigate through the site. The use of this simple navbar provides for a consistent and straightforward design, which benefits the user as they navigate the website and avoid reaching any dead-end sections.

Also included responsiveness in my design by creating classes for columns and rows in my CSS file, these classes were then used to implement a responsive design based on the size of the window which provides usability for mobiles as well as desktop users. The website has a minimalist design as I have implemented well-optimised visuals to help the user focus on important aspects of the site.

In order to improve usability, the website's design incorporates a variety of heuristic guidelines. The website uses colours like royal blue, purple, and white to make the material stand out, and the high contrast in colours ensures that colour blind people may use the programme without a problem. Another design heuristic I've incorporated is error prevention using input field validation, which prevents difficulties by displaying error messages and informing the user of the problem and which data entered was incorrect.
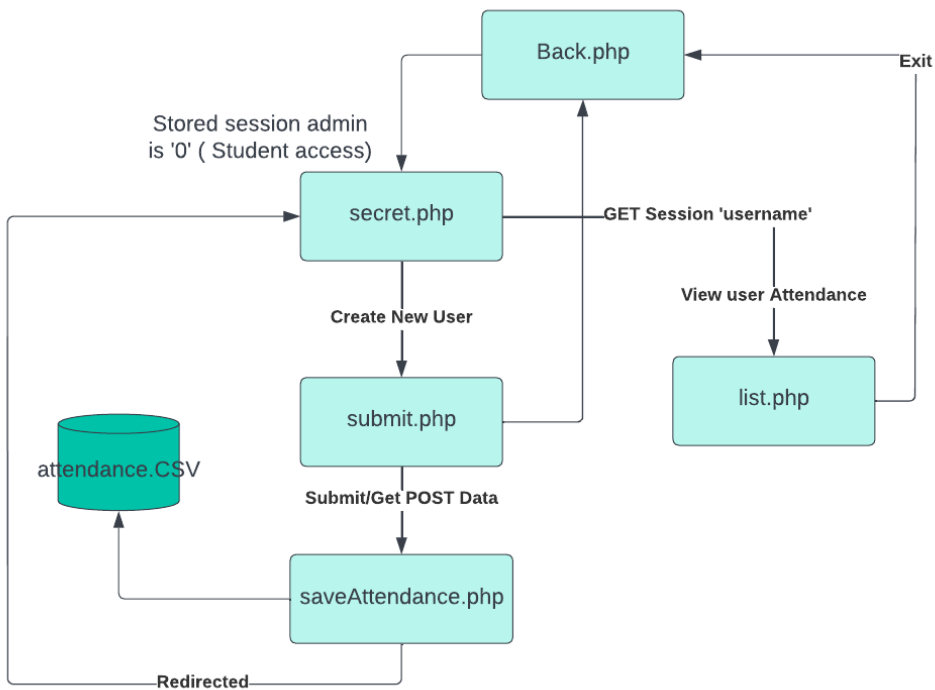
State Diagrams:

    1) Overview Of Whole website
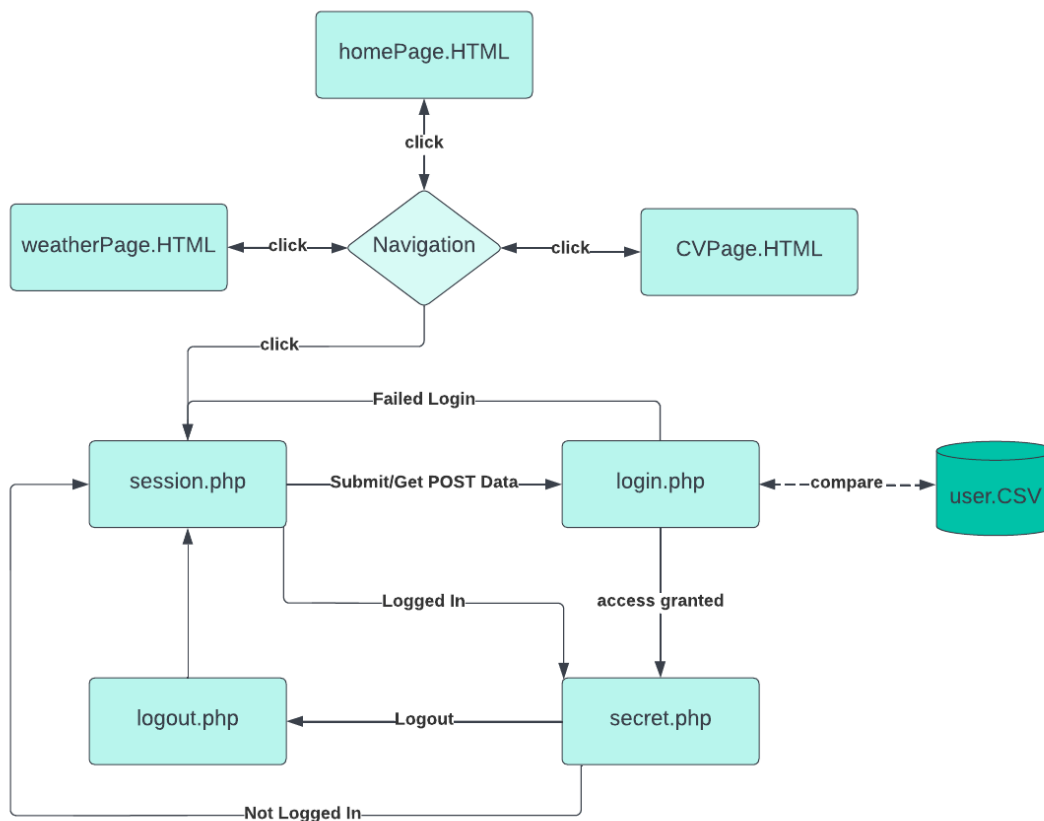
    2) Overview Of The Teacher Access Of The Attendance System
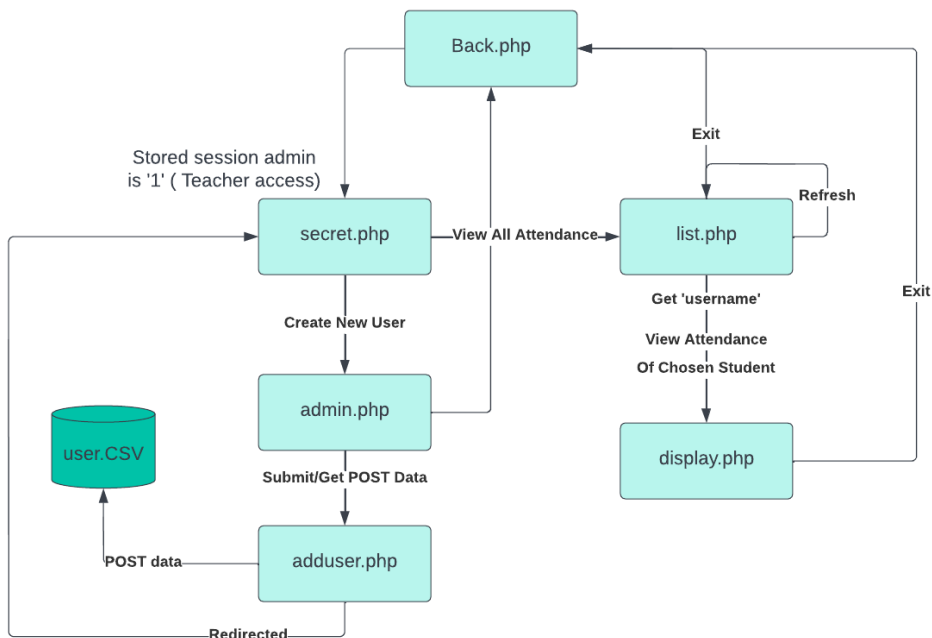
3) Student View of Attendance System

Conclusion:

In conclusion, I managed to complete most of the tasks set and provided an aesthetically clean and concise design throughout the website and met a lot of the objectives that were established. For example use of a consistent navbar allows for easy navigation through the website. Resizing is used to allow for a responsive design to enable the website to be used on both mobile and web browsers. Meaningful images were also used on the pages to allow users to easily understand. Moreover, validation was added so users are informed of any mistakes made when entering data through error messages. Furthermore, a secure attendance system that does not allow access to certain pages if a user is not logged in has also been established.

However, some limitations do exist such as not verifying usernames to stop any duplications which can result in the attendance system not working correctly, so to increase the effectiveness for reuse you could add this verification. Also, the comparison graph in task '2b iv' could use more customisation options.

References:

Feelingpeaky - Creative design agency, London. 2021. *9 Principles of Good Web Design - read our guidelines to consider*. [online] Available at: <https://www.feelingpeaky.com/9-principles-of-good-web-design/>

Caplan, R., 2021. *Chapter 7: Interface Design | Web Style Guide*. [online] Webstyleguide.com. Available at: <https://www.webstyleguide.com/7-interface-design.html>

Nielsen, J., 2021. *10 Usability Heuristics for User Interface Design*. [online] Nielsen Norman Group. Available at: <https://www.nngroup.com/articles/ten-usability-heuristics/>