

IT5039 Client-side Development

Practical Task 1: Responsive Web Development (LO1, 5, 6)

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Website name: Top 5 Largest Forests in the World

For this assessment I decided to create a whole new site for the sake of learning purposes. I designed a site that lists the top 5 largest forests in the world. I have created 3 responsive webpages, all that contain the complete range of elements required for this assessment including Flexbox and CSS Grid. The images, HTML and CSS files are in the same folder this document is in (A URL could not be given as discussed with the lecturer), to view the site open the index.html file. Below is a breakdown of the assessment tasks.

Design/Build:

Firstly, I had to decide the layout style of the website. As this assessment is based on responsiveness and the use of layout techniques, I decided to create a Split Screen style website. I decided to create the site desktop first as most of the use of Flexbox and Grid would be in desktop width and would use media queries max-width to make the site responsive at different screen widths. I created a quick framework sketch on paper of the layout of the main page and then coded the HTML content.

Content:

I used a combination of images, svgs, icons from Awesome fonts for multimedia, and lists for navigation. In terms of layout techniques, I used a combination of both Flexbox and CSS grid in different sections of all the pages. The main layout of the home page was made with CSS grid, making two template grid columns in the main section for the split screen style page and auto rows for the different forests. Flexbox was used when the layout was quite simple and needed to be one dimensional. For example, Flexbox was used to for the layout of the header and footer navigation bars and the blocks of content for each forest and main content of the other pages. I also used Flexbox to align single divs as I found this is the easiest way with minimal code.

Site responsiveness:

Media queries were used to change the display of the HTML content at different screen widths. As the site was created Desktop-First, the following media queries were used:

max-width: 480px – for mobile device

max-width: 768px – for tablets and small screens

max-width: 1024px – for desktop

max-width: 1920px – for large monitors

Using these media queries, the layouts and orders of CSS Grid and Flexbox were changed to best suit the screen width and device. Font sizes and images were also changed, and I was able to arrange or eliminate content using the display and order attributes for smaller screen widths to avoid clutter and make the site more aesthetically pleasing.

Image optimisation:

For image optimisation I created different image sizes for each image to optimise their file size for different device screen width sizes and reduce load time of unnecessary high KB images. I resized and compressed all images, so they fitted well onto the page and were the smallest KB possible without compromising on image quality. For images coded in HTML I used the srcset and sizes attributes, so the right sized image was displayed at the screen width given. For the background image, I created three different sizes of the image, one for mobile and tablet, one for desktop and one for large desktop monitors. Media queries max-width was used to select the right image size. This way, an image with a bigger KB would only be loaded if needed to maintain image quality.

By doing this I was able to reduce the site size to the following:

Mobile file size: 540KB

Tablet file size: 1.7MB

Desktop file size: 2.0MB

Large Desktop Size: 2.7MB

Browser compatibility:

To ensure that the site looks consistent on different browsers I created a CSS file and copied it in a CSS file sheet template from HTML5 Doctor to reset all the styling attributes of the different browsers. I then linked this file into each of the page's HTML just above their custom CSS file. Also, in order to make sure the top of the main page was 100vh for all browsers I added CSS formatted for each browser in the custom CSS file.

Testing:

I spent many hours testing the site to make sure all images displayed nicely, that all links worked, and that the site was displaying correctly at different screen widths, and browsers. I tested the site on Chrome, Safari and Firefox browsers as these are the most popular browsers with Chrome taking over 50% of the market share. Below is a breakdown of testing.

Testing on mobile and tablet devices:

I used Chrome's inspector tool to view the site in any screen width and in the mobile and tablet screen widths using the responsive settings in the inspector. The mobile screen sizes tested on was the Samsung Galaxy S8+, iPhone XR and the Galaxy Fold. I chose these three device widths as they give a large px range. The Galaxy Fold screen width is 280px and the iPhone XR is 414px wide. The tablet screen sizes tested on were the iPad Air (820px), the Nest Hub (1024px) and the Nest Hub Max (1280px). Small adjustments were made to make the content fit well in all widths.

Testing on Browsers:

Chrome Browser - Version 99.0.4844.51 (Official Build) (x86_64) - Latest version:

As I had been using Chrome's Inspector as a reference in the design of the site, everything looked good and fitted well as expected.

Safari - Version 15.3 (17612.4.9.1.8) – Latest version:

On testing Safari's browser, I noticed that the font size was much larger. This caused the h1, h2 and nav to not fit into the screen properly from 768px wide onwards. This problem was for the main page only as all other pages tested fine. I did not want to change the font size type to px as this would limit user accessibility. To fix the

problem I reduced the font size of the headings, added a little padding, and changed a few attributes from rem to % so that the content fitted nicely. For the navigation bar, I changed the Flexbox settings of the nav from justify-content to space-evenly which allowed the nav fitted fit inside the screen. Everything looks good in retest.

Firefox - Version 98.0 - Latest version:

Firefox had the same issues as Safari, but with the changes made above these were resolved in the Firefox browser. Another issue was a gap between the forest preview images and their headings. With some adjustments with the padding and margin attributes it was fixed. The down arrow icons also looked different. I preferred Firefox's style; no changes needed to be made.

Everything looks good in retest.

Conclusion:

I spent many hours creating and testing this site and am proud of the result given the time constraints. If I had more time, I could have paid more attention to the details and design.

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