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Proposal for

FESC Website Redesign

I. Objective/Summary

The objective of this proposal is to improve the user experience of the FESC website by reorganizing its content and implementing a responsive design. There are three main sections in this proposal to discuss how to achieve this goal. First, the current state of the website is accessed in various aspects, and the underlying problems are discussed. Then, before jumping into the recommendation section, a proposed list of devices that support this responsive redesign is presented. Lastly, detailed recommendations are discussed based on the problems identified in the assessment section.

In the assessment section, five aspects are considered, including accessibility, mobile friendliness, performance, functionality, and ease of use. The first three aspects of the website are accessed using online tools. Each of the result is presented in this proposal. The last two aspects are assessed by the author's user experience.

In the supported devices section, a list of supported devices along with their screen sizes is included. This will serve as one of the important guidelines in implementing a responsive design.

In the recommendations section, each of the problems found in the assessment section is provided with a solution that meets the goal of this proposal.

II. Needs/Problems

To access the current state of the FESC website, tests of various aspects are carried out, including accessibility, mobile friendliness, performance, functionality, and ease of use. The assessment results of these aspects are discussed in this section.

A. Accessibility Audit

The accessibility audit is performed using an online accessibility checker called *Cynthia Says* [1]. The noncompliance result is shown below based on the compliance mode of section 508.

1. A text equivalent for every non-text element shall be provided (e.g., via "alt", "longdesc", or in element content).

2. Frames shall be titled with text that facilitates frame identification and navigation.

3. When a web page requires that an applet, plug-in or other application be present on the client system to interpret page content, the page must provide a link to a plug-in or applet.

4. When electronic forms are designed to be completed on-line, the form shall allow people using assistive technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues. For instance, all visible INPUT elements must have a label, either by using a linked or containing LABEL element, or by using the ALT or TITLE attribute.

B. Mobile Friendliness

Mobile friendliness of the FESC website is performed using the Google Mobile-Friendly Test Tool [2]. This test accesses how easily the website can be used on a mobile device. The list below shows the found issues of the site.

1. Clickable elements are too close together. For instance, on a mobile device, the user might struggle clicking a button without accidentally clicking another neighboring button.

2. Viewport of the site is not set. Without setting the viewport, the site will not be able to respond to the different size devices that are viewing the website, and adjust its content layout for better viewing experience.

3. Texts are too small to read. This requires the user to zoom in on mobile devices for the texts to be legible.

4. Some contents are wider than the screen. This requires mobile device users to scroll horizontally to be able to view the full content of the website.

C. Performance

Performance of the FESC website is tested using the Google PageSpeed Insights [3]. In this test, the server responded in 0.51 seconds. Below are the factors that slow down the server response time.

1. Large size images

2. Browser caching

3. Non-compacting CSS code

4. Non-compacting JavaScript code

D. Functionality

Functionality wise, the found issues are listed below.

1. The *Site Map* link at the bottom of the website takes the user to a page with empty content instead of with a map.

2. Clicking the *Download Brochure* at the home page takes the user to a page that reports not-found error.

3. At the bottom of the home page, there is an input box for signing up for newsletters, but there is no submit button.

4. In the *Contact Us* page, the label on the left aside navigation is incorrectly written as *About Us*.

E. Ease of Use

The FESC website is also accessed the experience it provides for the users. The issues that currently exist are listed below.

1. The visual styling of the website is not consistent. For instance, the left vertical navigation menu has a different color on the home page from any other pages.

2. The structure of the FESC website is not organized, which leads to difficulty in locating specific information. Having more than one navigation menu is one obvious result from this issue. Besides that, the vertical navigation menu contains way too much information and does not categorize correctly. For example, the FAQ page emerges at the very bottom of the navigation menu on the contact page, which is unexpected and non-intuitive.

3. The new information to the FESC website is not updated systematically. While the *Site Map* page contains no site map information, there is a *Visit Us* link buried towards the bottom of the contact page, which takes the user to a page that does contain site map information. The fact that duplicate information is not merged misleads the users to getting different information on the same topic.

III. Supported Devices

In this proposal, a responsive design with various layouts adjusting to different screen sizes is considered. Table 1 shows the proposed devices and their corresponding screen sizes [4].

Table 1. Proposed Devices and Screen Sizes

Device	Minimum Size
Desktop	992px
Laptop	768px
Tablet	576px
Phone	<576px

IV. Recommendations for Improvement

Based on the problems identified in section II, corresponding redesign recommendations are proposed in Table 2.

Table 2. Recommendations By Category

Category	Recommendation
Accessibility	All images on the site should have an "alt" attribute to accommodate users using screen readers.
	All the frames on the site should have titles, which makes each frame more descriptive to the users using screen readers.
	In places where applets and plug-ins require additional software to be downloaded, a link to download should be provided.
	Ensure all input elements in a form is linked to a label, so that clear information is presented to screen reader users.
Mobile Friendliness	Implement various layouts so that font size and spacing between elements are reasonable on a smaller screen.
	Implement the viewport setting so that the website scale can respond to different screen sizes.
	Style elements with relative width and position so that they fit within the width of the current screen.
Performance	Optimize the images by reducing the data size.
	Set expiry date in HTTP headers to instruct browsers to load previously downloaded resources from local disc instead of from the Internet.
	Minify the CSS and JavaScript files to reduce the size.
	Update and redirect the *Site Map* link to the *Visit Us* page.
	Ensure the software that enables the download on the homepage is working and is compatible with

Functionality	popular browsers.
	Clearly label input boxes and add submit buttons where it's missing.
	Correctly label the page path of the current page in view.
Ease of Use	Make styling and structures in all pages have a consistent theme.
	Remove the vertical navigation menu which contains excessive information. Reorganize the content structure to only contain up to date information.
	Document content update mechanism for systematic updates and to prevent duplicate contradicting information.

Appendix

1. http://www.cynthiasays.com/

2. https://support.google.com/webmasters/answer/6352293?utm_source=search_console&utm_campaign=sc-mft-test

3. https://developers.google.com/speed/pagespeed/insights/

4. https://getbootstrap.com/docs/4.0/layout/grid/