The University of the West Indies
Cave Hill Campus
Faculty of Science and Technology Department of Computer Science, Mathematics and Physics

SWEN1005: Mobile Web Programming

Laboratory Exercise Three

Employing CSS3 `touch-action`

INSTRUCTIONS

1. This lab presents three examples of using the CSS3 Touch events to facilitate panning and zooming behaviours. Each example comes with a code base that you can copy and examine to give you some insight into how to get these behaviours to occur in supported browsers.
2. You need to use a device that supports touch, i.e., have a touchscreen, to get these demos to work. A touchpad on your laptop does not produce the correct events and the pan & zoom features will not function properly. The easiest way to achieve this if you do not have a laptop with a touch screen is to:
    a. Set up a shared folder on your laptop/desktop using Google Drive, One Drive, Dropbox etc.
    b. Store the lab exercises in the shared folder, that is the HTML files and any associated style files or JavaScript files.
    c. Go to the shared folder on your touch-enabled device (smartphone, tablet etc.) and view the HTML file using the devices browser. You should be able to interact with the site using the pan & zoom features as expected.

Example 1

This is a very simple example of the different behaviours that available with the CSS touch-action property. The code is available at: https://github.com/GoogleChrome/samples/blob/gh-pages/touch-action/index.html

Copy this code base into your shared folder and save as a file called pan_zoom_example1.html. Once it is saved to the shared folder, view it using your browser on the touch-enabled device. Note the following about the code:

1. It's a responsive site that uses flex-box. Identify where and how flexbox is used and ensure you understand how it's being employed.
2. Once you have the site working. Place all the style rules found between the <style> tags (lines 13-55) into an external style sheet called ***style.css*** and link it to the HTML page.
3. Observe the style attribute used for each section tag to demonstrate the different touch behaviours. Once you understand the rules, remove the style attributes from the sections and attempt to create the rules in the external ***style.css*** file you created in the step above. Ensure the page keeps working as before.

Example 2

This example is more complicated because it uses JavaScript event listeners – a basic/intermediate concept in the JavaScript programming language. The best thing about this example is it shows you how to calculate the scale needed to enlarge or reduce the photo you are viewing using pinch-and-zoom. The tutorial is found here. Follow it and once you have it working, see how you can apply it to your own design.

Example 3

The final example of Pinch and Zoom from the Mozilla Developer Network (MDN Web Docs) also uses JavaScript to create a simpler example than the one given in Example 2. However, this tutorial provides less explanation on the JavaScript so it would be slightly more difficult to understand by those without JavaScript knowledge. The tutorial is found here. This simply changes borders and background colours, so it will be easier to separate the behaviours you need once you understand the code.