

Getting Started with HTML5 using BlackBerry WebWorks

Lab # 3: *Surveying Capabilities and Adding Media Options*

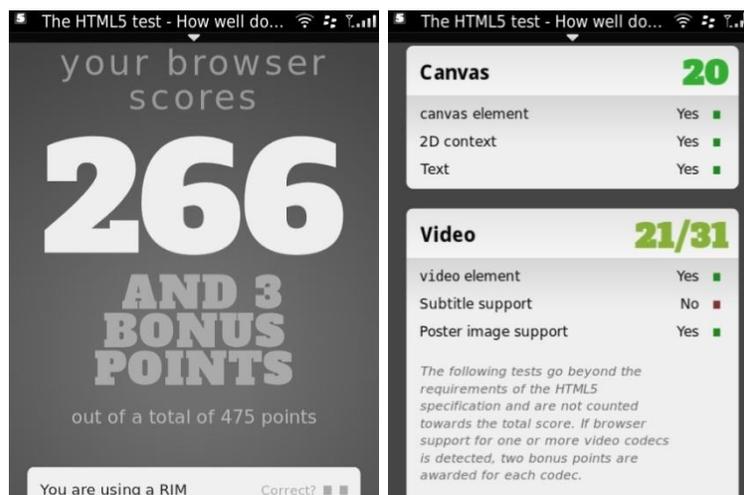
In this, the final lab of this series, we continue the work on building the to-do list application. In this lab, we focus on adding media options and surveying other HTML5 possibilities.

As shown in Lab 1, the Ripple emulator and WebWorks SDK should be installed on your development machine. You are additionally requested to download the BlackBerry Simulator for the Bold 9900 for testing the application if you do not have access to a device. This can be obtained from the Blackberry.com website at

<http://us.blackberry.com/developers/resources/simulators.jsp>

HTML5 Feature Audit

- An important consideration for developers is what your platform supports. We are working with BlackBerry OS7 and would like to know what capabilities it has.
- Open the BlackBerry Bold 9900 simulator and in the browser go to the website <http://www.html5test.com/> to run an audit of your device capabilities. Look through each of the categories and see what is available to you and what is not. You may want to download an OS6 and OS5 simulator to run the same test and compare results.
- The capabilities vary greatly even on the same platform, different versions may not have the same features implemented. This application is geared toward OS7 only but if you are looking to support users on older software in your applications, ensure you have fallback methods for unsupported features.
- At the end of this lab, use your audit results to discover how you can enhance your application. Add any additional features you choose to improve the usability.



Example Results for HTML5 Test on BlackBerry OS 7

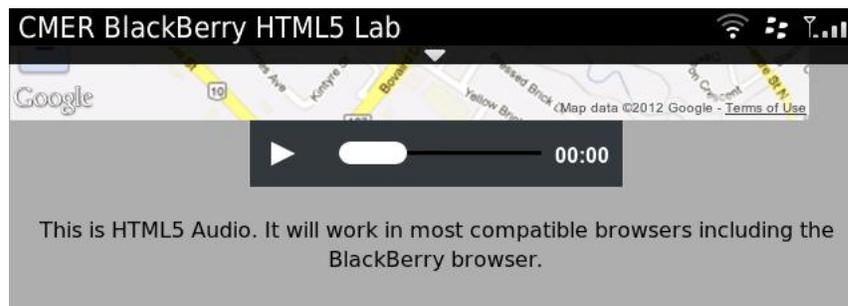
Adding HTML5 Audio support

- Open the startup file archive Lab3.zip and extract it to a folder of your choice, or use your code from Lab 2 if you have completed it. Next open index.html in your favorite HTML editor.
- At the bottom of our application, under the geolocation section, we will be adding an audio player for a standard mp3 file. Previous to HTML5, a JavaScript or Adobe Flash players had to be used to accomplish media playback and performance was extremely poor on mobile devices. HTML5 offers standard, universal high quality playback.
- Find a small mp3 audio clip of your choice or download the media.zip file that has two demo clips for you and put them in a folder called media
- In your index.html file, create a figure element. This is new to HTML5 and allows better use of elements with captions. Inside your figure add an audio tag with controls. Your source file will be the demo.mp3 file you downloaded. The entire audio tag should look like this


```
<audio controls>
  <source src="media/demo.mp3" />
</audio>
```

Before closing your figure tag, add a <figcaption> tag explaining that this is HTML5 audio and should work in most browsers.

- With that small bit of code, you have added audio playback to your application. If you test in the BlackBerry simulator, you will see a play button and a slider to allow control of the audio experience. To test on your simulator, for now you can simply enter the same URL as you did on Ripple into the BlackBerry browser. Testing this functionality is currently not supported in Ripple. The audio player will display on your application similar to as follows:



Adding HTML5 Video support

- Now that we have added audio, let's add a short video clip to our app. This can often be used as an instructional video that explains to the user how to use your application.

- Under your audio code, add a video tag in the same was as audio pointing to the demo.mp4 file downloaded with the lab. The code is slightly different for video and you must specify your video type since many formats can be used to support different browsers. Your code should look similar to this

```
<video controls="controls" autoplay="autoplay">  
    <source src="media/demo.mp4" type="video/mp4" />  
</video>
```

The autoplay attribute will have the video start immediately without user intervention, if this is not how you would like your application to behave, remove this feature.

- Modify your video tag to add height and width controls. Set your height to 400px and width to 570px
- Before closing the video tag, add a note saying the browser does not support HTML5 video tags. This will only be displayed if the video cannot be shown due to incompatibility.
- Now with those modifications, test your video in the simulator or on a device to ensure it functions. Since the BlackBerry supports HTML5 video, you do not see the incompatibility note from the last step, instead you see the video player.



- You should see the video functioning correctly. Now that you have it working, you need to find and replace this clip with one of your choosing. You may find that your video does not play; this is due to codec incompatibility, something that makes it a bit more difficult to use the video tag. In order to support all browsers, usually the video is encoded into multiple different formats and the correct one is chosen dynamically. For our purposes, we only need to support BlackBerry which uses the H.264 codec to decode video.

This means, that when you choose a video clip to use on BlackBerry, you must first use a program to convert it into a compatible format. Many tools are available to do this, one such free tool is HandBrake, <http://handbrake.fr/>, download the tool and encode your video into an mp4 file. Under the video tab, ensure “H.264 (x264)” is selected and stereo is selected under the audio tab. Once ready, click the start button to encode the video to place in the media folder. Many other such tools are available that you can use if you choose. Test your video playback again and ensure it works correctly.

Enhancing Media Support

- When we bundle our WebWorks file, the media folder will be included in the download. It may not be ideal to have users download these large video and audio files with your application.

Replace your video and audio file sources with clips that are stored on the web. You may upload the same two files to your personal webspace or find another compatible clip. Remember that to access a website from a WebWorks application you will need to modify your config.xml file to allow access. Do this using the same process used in Lab 2.

- For those that do not have access to personal webspace, the two demonstration files can be found using the URLs:

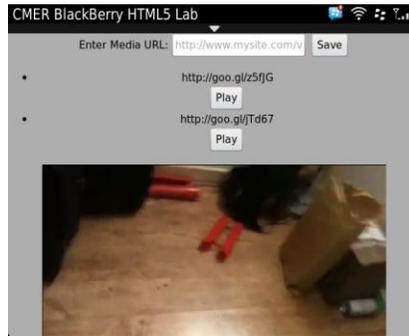
<http://apps.socs.uoguelph.ca/HTML5/demo.mp3>
<http://apps.socs.uoguelph.ca/HTML5/demo.mp4>

You are able to use the links above and instead of replacing the video you have encoded. Add a second video to your application for the web video, this will demonstrate that you are able to both load the provided video from the web and encode your own. For both videos, use the HTML5 caption element to add a note explaining what the video is.

Assignment

- Using your knowledge, modify your application so that you have a form that allows the URL of video and audio files to be passed into the application to be saved in your notes.
- Use local storage to save these links and list them in the application. Have a button beside each so they can be played using the HTML5 video and audio players.

- An example of how this would look is below.



Ensure that when you refresh your page, the buttons and links that you previously saved are still available. If they are not, your local storage is not working correctly. The URLs entered into the form must be to media files in compliant formats.

This is the end of Lab 3; you have now seen some of the exciting new features in HTML5 and related web technologies. You have tested this application using a simulator and the Ripple emulator. You are ready to compile and package your application, this will allow you to run it on a device natively without using the browser. Use the instructions provided from the WebWorks portal to learn how to compile, sign and prepare applications for sale. This can be found at https://bdsc.webapps.blackberry.com/html5/documentation/ww_developing/packaging_your_app_1939301_11.html

The websites below offer for more information and examples on what new web technologies have to offer. Visit them for more information about the changes coming to web development and further your learning.

1. <http://html5demos.com/>
2. <http://net.tutsplus.com/tutorials/html-css-techniques/25-html5-features-tips-and-techniques-you-must-know/>
3. <http://www.web3mantra.com/2011/04/13/50-best-css3-examples/>
4. <http://boxtuffs.com/files/My-Notes/slice-my-notes/#>