

Creating a RACHEL Module

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This document will step you through creating a basic RACHEL module using a template and set of files that have been provided to you in a zip form.

Here is a link to a zip file containing a sample module (your link I presume? :), including rachel-index.php: ftp://ftp.worldpossible.org/other/en-sample_module.zip

Here is a link to a script with easy instructions to load a module onto a Rachel Plus (CAP3) device: <ftp://ftp.worldpossible.org/other/PushMod.zip>

Once you have received the ZIP archive, uncompress the archive and you will be ready to start the session. This document is step by step and refers to files in the template that you have received.

Part 1

Viewing the Module with a Web Browser

1. Open a folder window and navigate to the **en-sample_module** folder. Double click on the **index.html** file in that folder. A browser window should open displaying the contents of the file. Review the content of this file. In this very simple web page, note:
 - The flag graphic and the Page title
 - The Description
 - The Header
 - The Subheader
 - The 3 links to the content.
 - The title of the web page that appears in the tab row of your browser
2. Click on the 3 links to content on this page and use the browser's return arrow to return to the page. Notice this page has links to an MP3, MP4, and PDF file.

Viewing the Module's HTML code

3. Use a text editor, such as TextEdit on a Macintosh or NotePad on a Windows system, to open the **index.html** file for editing. You see the HTML code for this module page. Please note that applications such as Microsoft Word or other applications that has text formatting should not be used when creating HTML documents. These applications often insert hidden characters that can break your HTML code.

4. Before we start editing, let's review the basic HTML elements, known as tags that are used in this file. Notice that each tag has a right and left bracket that encloses one or more letters, for example the <p> tag identifies the start of a paragraph. The <p> tag is paired with the </p> tag that identifies the end of the paragraph. Most HTML tags have an opening <p> and closing tag </p>. Let's examine the important tags in this file:
- <html> - Identifies that this is an HTML file. Notice the </html> tag terminates the file.
 - <head> - Identifies style, scripts, and other data for the file. We'll ignore this tag in our lesson.
 - <title> - Identifies the HTML page's title that appears in the tab bar of the browser.
 - <style> - Identifies style information such as background color, font information and padding. Again, we won't modify this information in this lesson.
 - <body> - Identifies the body of the document and defines the content of the document, such as text, images, tables, hyperlinks, etc.
 - - Identifies an image. It refers to a file name or URL of the image.
 - <h1> - Identifies a top-level header.
 - <h2> - Identifies a second level header.
 - <h3> - Identifies a third level header.
 - - Defines a list of un-numbered (bulleted) list of items. The tag defines the end of the list.
 - - Defines a list item.
 - <a> - Is an anchor that defines a hyperlink to another page. The href attribute of the <a> tag identifies the file or URL that is opened when the item is clicked.
 - <!--and --> identifies a comment. This is information that the coder can use to communicate with another coder. The text between these tags does not appear in the browser window.

HTML Coding Note

When writing or modifying HTML code be sure to place your code inside the HTML opening and closing tags or within the quote pairs in the case of the href <a> anchor tag. For a paragraph, be sure your text is between the <p> and </p> pair:

```
<p>Place your text here</p>
```

And avoid these example:

```
<p><Avoid this with the misplace < and incomplete /p>/  
<p></p>Be sure your text is inside the opening closing  
bracket.  
<p>Be sure to insert the closing tag.
```

Be sure to include your text within the quotes, where appropriate:

```
<p><a href="RainBird.pdf">Rain Bird Book</a></p>
```

And avoid placing your text outside of the quotation marks:

```
<p><a href="RainBird.pdf">Rain Bird" Book</a></p>
```

Do not forget the closing quotation mark:

```
<p><a href="RainBird.pdf">Rain Bird Book</a></p>
```

Modifying the Module's HTML Code

5. In your text editor find the <title> tag in the code of the **index.html** file. Change the tag contents, Browser Tab Name, to My First Module. Save the file, refresh the web page in the browser, and check the name of the web page in the browser's tab bar. It should reflect your change.
6. Locate the tag and find the string which identifies the image that is shown in the top right corner of the web page. Change the string to read to change to the image in the **WP.png** file. Do not modify the style="width: 300px; "> statement. Save the file, refresh the web page in the browser, and notice the change.
7. Find the <h1> tag. Then change A title to the page to be My First Module. Save the file, refresh the web page in the browser, and notice the change.
8. Find the first <p> tag and change the text between the <p> and </p> tags to read This module is for training purposes. Save the file, refresh the web page in the browser, and notice the change.
9. Find the <h2> tag and change Header to Learning Content.
10. Find the <h3> tag and change Sub Header to Learning Materials.
11. Notice the and tags. They define an un-numbered list, in this case with three items defined by and tags. The
 tag at the end of the line inserts a line break.
12. Review the first tag and notice within the tag is an <a> pair. This is an anchor that has two important parts:
 - The href is an <a> attribute that specifies the file or URL that the link goes to. In this first example that file is **Sales.mp3**.
 - The string of words (Description of the Audio File Sales.mp3) after href="Sales.mp3" is the description that appears on the web page as a link.

From the browser, review this line and click to open the **Sales.mp3** file.

In the text editor, modify the Description of the Audio File Sales.mp3 to read Sales.mp3 Audio file.

Save your work, reload your browser, and verify that the text has changed. Verify that the hyperlink text still works.

13. From the text editor, modify the text that appears in the in the second and third lines lines. Make the changes suggested in the table below.

Existing Text to Be Modified	New Text to Insert
Description of the Video File Parallelogram.mp4	Parallelogram.mp4 Video File

Description of the PDF File AHeartbeatAway.pdf	AHeartbeataway.pdf Text file
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14. When you have made your changes, save your work, reload your browser, and verify the changes that you have made.

Congratulations! You have created your first RACHEL module.

Part 2

Enhancing the Module's Organization

1. Let's start by creating a new version of your module's HTML file. From your text editor, rename the **index.html** file to **index2.html**. Be sure to maintain both copies. We will make some enhancements to your module.
2. Open a folder window and notice that there are 3 MP3 files, 3 MP4 files, and 3 PDF files. Note the names of these files.
3. From the text editor, modify the **index2.html** file. Copy the text starting from the `<h3>` tag to the `` tag. Be sure to include the `<h3>` and the `` tags completely. Paste this copied code on a new line below the line with the `` tag and above the `</body>` tag.
4. Paste the code again on a new line immediately above the line with the `</body>` tag. You now should have 3 different list with the same contents.
5. Save the changes, reload the browser and note the changes. In your browser, you should see three sections with three links in each section.

We will now create an Audio Learning Materials, a Video Learning Materials, and a Written Learning Materials section with three links in each section.

6. Inside the first `<h3></h3>` string, change the text to read Audio Learning Materials.
7. After you have finished your changes, the next three `` lines will contain references to audio (MP3) files. Notice the `` line that reads:

```
<li> <a href="Sales.mp3">Description of the Audio File
Sales.mp3</a></li><br>
```

Remember that the `href` value refers to the MP3 file to be loaded on the click and `Description of the Audio File Sales.mp3` the string appears as the hyperlink text in the web page.

8. Edit the next two lines with `` strings with the following:

File name (href)	Description
Applause.mp3	Applause Audio

Surf.mp3	Surf Audio
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You have created a list named `Audio Learning Materials` with three items in the list.

9. Save your changes, reload your browser, and verify that the links function correctly.
10. Find the next `<h3>/</h3>` line and change the text to read `Video Learning Materials`.
11. In this section, verify that the MP4 video is the second item in the list.
12. After you have finished your changes in this step, the next three `` lines will contain references to video (MP4) files. The second `` already refers to a video MP4 file. DO not modify this line. You will modify the first and third `` lines in this section. For the `href` attribute insert the file name and the text used as the hyperlink with the Description information.

File name (href)	Description
SampleVideo.mp4	Rabbit Video
small.mp4	Toy Video

13. Save your changes, reload your browser, and verify that the links function correctly.
14. Find the last `<h3>/</h3>` line and change the text to read `Text Learning Materials`.
15. Review the `` line that refers to the **AHeartbeatAway.pdf** file. Do not change this line. Modify the lines with the MP3 and MP4 files and insert the following information:

File name	Description
RainBird.pdf	Rain Bird Book
ThingsIKnow.pdf	Things I Know Book

16. Save your changes, reload your browser, and verify that the links function correctly.

Congratulations you have created a module with three set of learning materials!

Optional Activity

In this activity, we will improve the organization of the module by placing our MP3, MP4, and PDF files in a subfolder.

1. In the folder window, create a subfolder named **Content** to your modules folder.
2. Move the MP3, MP4, and PDF files into the **Content** subfolder.
3. In each of the `` lines modify the `href` attribute value to refer to the path to the files that are now in the Content subfolder. For example,
``
should be changed to
``

4. Change each line to reflect the new location of the MP3, MP4, and PDF files. Save the changes and verify that the links are still active.

RACHEL Module Best Practice

When setting up a RACHEL module, remember that the module can be loaded on a wide variety of devices, as small as a mobile phone or as large as a computer monitor. Keep your module simple and make sure that the module's graphics display successfully on even the smallest mobile phone screen. Here are several suggestions to follow when setting up your module:

Keep your module

- Keep your module simple in design.
- Keep your module small. Keep the graphic files as small as possible.
- Use commonly supported file formats such as PDF, MP3, MP4, etc.
- Limit the number of external links in the module. Remember, the RACHEL users may have limited or no Internet access. External links will only frustrate users who don't have good Internet access.
- When you have finished the module development, test your module on a variety of devices, phones, tablets, computers, etc.
- Be sure that your module's text is easy to read on a variety of devices. Consider text font size as well as background and font color.
- Keep thumbnail graphics (if you use them) around 300x300 pixels and at least 100x100px.
- Limit your large graphics to no more than 640px horizontal length or consider sizing the horizontal length to a percentage of screen size.
- Use PDF files rather than the application's native format (.docx, .ppt, .xls, etc).
- Use lower resolution video files, ideally MP4 480p (640x480px). For audio files, use MP3 16-bit.