# Themes and CSS



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# Themes and CSS

Before you Begin	4
www.aemforms.training	
Limited Courseware License	4
Themes	5
The Theme Editor	
CSS Overview	
Type Selectors	6
Inheritance and Overrides	
Overrides	
Responsive Design and ems	7
Theme Editor Persistence	
The CSS File	
Theme Editor's Persisted Values	
Themes and the Emulator	
Exercises	
Get the Form	
Get the Adaptive Form	9
Copy the Ultramarine Theme	
Update your Form	12
Review the Theme	
Update the Widgets	14
Preview the Form	
Update the Widgets	
Test the Updated Theme	21
Themes and Client Libraries	24
Exercises	
Open your theme and form	
Update the Panel Navigation	25
Update the Table Styles	
Use a Client Library	
Use Style Mode for Button Icons	

Create a Client Library	32
The JCR Folders	32
Exercises	33
Create a Client Library	33
Test your Form	
About this Courseware	41

# **Before you Begin**

An adaptive form's theme determines the look and feel of the adaptive form. We create and edit themes in the *Theme Editor*. The *Theme Editor* is a visual tool that automatically creates the CSS (*Cascading Style Sheets*) for our adaptive forms.

Prerequisites: None

Approximate Instructor-Led Classroom Duration: 2 hours

# Environments

You can use a SmartDoc Sandbox for these exercises.

# www.aemforms.training

The support site (**www.aemforms.training**) is designed to support our students during and after a training session. Here is what you will find on the support site.

- The Known Issues section documents bugs and issues with various versions of AEM Forms.
- The Sandbox section lists AEM Forms Servers you can use for the hands-on exercises.
- The Forum section enables you to post, review, and answer questions about AEM Forms.

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# Themes

An adaptive form's theme determines the look and feel of the adaptive form. You can create and edit themes in the *Theme Editor*. You can open the *Themes* section by clicking on this icon.

	Ţ	40	
Forms & Documents	Themes	Data Integrations	Document Fragments

AEM's *Theme Editor* enables you to visually create your form's CSS file. Just like the *Rule Editor* enables you to visually create your form's JavaScript, the *Theme Editor* enables you to visually create your form's CSS file.

# **The Theme Editor**

The Theme Editor includes a Sidebar (*left*) and a Canvas (*right*). You access your selectors through the Sidebar and the Canvas is a pseudo-form that contains each adaptive form field. The Sidebar contains the CSS Selectors. We will change the values in these selectors.

The Canvas is a pseudo-form that contains most of the adaptive form fields. We can get a good idea of how our theme affects an adaptive form with this pseudo-form. But the true, and complete test will be when we test our actual adaptive form with the theme.

Selectors	■ 幸 ゥ 辱	SMARTDOC-EXECUTIVE-JAMES	Edit	Preview
Enter title to find form object(s)	Confirmation			
> Header	Basic Information			
Page	Text Box Widget Field Widget	_		
> Form				
✓ Field	Last Name	-		
Label				
∽ Widget				
Text Box	MONTH DAY YEAR mm dd vyvy			
Text Area				

# **CSS** Overview

CSS (*Cascading Style Sheets*) provide the look and feel for HTML pages. This illustration shows how CSS and JavaScript are used to support HTML.



# **Type Selectors**

These are some of the type selectors in CSS.

Selector Type	HTML example	CSS example
Universal Selector		* { font-size: 20px; }
Element Selector	<body> </body>	body{ font-family: "Myriad Pro"; }
Class Selector	<div class="jumbotron"></div>	.jumbotron { background: #0066ff; }
ID Selector	<div id="firstname"></div>	#firstname { font-size: 20px; }

# **Inheritance and Overrides**

CSS uses inheritance. Your child objects will inherit from their parents. The parent of all HTML elements that appear on the page is the <body> tag. Therefore, it's a good idea – for efficiency and consistency – to set your CSS properties on the body element selector.

### body {

```
font-family: Georgia, "Times New Roman", Times, Serif;
font-size: 1em;
color:darkslategrey;
```

}

## **Overrides**

However, if your CSS contains a more precise selector, the properties of this selector will override the properties of the less precise selector. Therefore, my h1 tags will all be black, 2em, and a sans-serif type.

#### body {

```
font-family: Georgia, "Times New Roman", Times, Serif;
font-size: 1em;
color:darkslategrey;
```

```
}
h1 {
    font-family: "Trebuchet MS", Helvetica, sans-serif;
    font-size: 2em;
    color:black;
}
```

## This is the largest heading.

There are many variations of passages of Lorem Ipsum available, but the majority have suffered alteration in some form, by injected humour, or randomised words which don't look even slightly believable. If you are going to use a passage of Lorem Ipsum, you need to be sure there isn't anything embarrassing hidden in the middle of text. All the Lorem Ipsum generators on the Internet tend to repeat predefined chunks as necessary, making this the first true generator on the Internet. It uses a dictionary of over 200 Latin words, combined with a handful of model sentence structures, to generate Lorem Ipsum which looks reasonable. The generated Lorem Ipsum is therefore always free from repetition, injected humour, or non-characteristic words etc.

According to the laws of inheritance, the size of the child element will be relative to the parent. So, it's a best-practice to always set the font-size in your body selector to 1em. If I had set my body selector to 2em, then my h1 size would appear as 4em (2\*2=4).

Since the Theme Editor creates a CSS file, the rules of CSS determine the behavior of your themes. Child objects inherit from their parents unless the child has a more precise selector. The most precise selector WINS. In this example the *Submit Button* is a more precise selector than the high-level *Button* selector. Therefore, the values in the *Submit Button* selector are used for buttons of this type.

∽ Button			Toolbar Button Button
> All Buttons			
> Save	Reset	Save	
∽ Submit 🖋			
✓ Background			
Image & Gradient + Add			Toolbar Button Submit Button Button
<ul> <li>Background Color</li> </ul>	Reset	Save	Submit
#2caae1			

# **Responsive Design and ems**

You will likely see Themes that have font sizes set to points (11pt) and pixels (18px). It is a better practice for responsive design to express your font sizes in ems. Think of a 1em measurement as normal size. So, if you want your headers to be 25% larger than normal, you can express them as 1.25em. Normal size is also the browser's default size, which is often 16px, unless you specify it differently. You can use ems for your fonts, margins, and padding. This will make them more flexible for responsive design on different devices.

Ems are interchangeable with points and pixels, but bear in mind that pixels are absolute and will likely not produce the most flexible design for your forms.

# **Theme Editor Persistence**

The Theme Editor creates properties in a CSS file, and it persists its values to CRX.

### The CSS File

The Theme Editor writes a CSS file to this location.

#### /etc/clientlibs/fd/themes/jpt/armyjpt/css/theme.css

When you update your theme, this file will be updated. This file can also be updated manually. Any form that uses this theme will be updated when this CSS file is updated in either way.

### **Theme Editor's Persisted Values**

The values that your Theme Editor uses are persisted in a different area of CRX.

#### /content/dam/formsanddocuments-themes

For instance, in a future exercise, you will change the background color of an af\_header in a theme to **cdad6f**. The Theme Editor will store this value, along with other properties, in a String Array in this location.

/content/dam/formsanddocuments-themes/jpt/armyjpt/jcr:content/renditions/themejson/jcr:content/components/af\_guideHeader/af\_header

a 🕒 co5dam thumbhail 319 319 pho								
a Cooling the second se								
theme-json	PI	roperties	Acces	s Control	Replic	ation	Console	Build Info
😑 🚭 jcr:content		Name 🔺		Туре		Value		
components	1	default#default		String[]		color:#969696	, top:0px, right:0px, left:0	px, border-left-width:0px t
a guideContainer	2	default#default#ui		String[]		borderWidthPo	opover:Opx, Opx, 1px, Op	k, paddingLock:link, paddir
af_guideHeader	3	jcr:primaryType		Name		nt:unstructured	t i	
- 🛃 af_header	4	phone#default		String[]		height:64px, p	adding-left:1rem, padding	g-right:1rem
🕀 🛃 af_headerlogo	5	phone#default#ui		String[]		paddingLock:li	nkOff, paddingPopover:1	rem, marginLock:linkOff, r
🗄 🛃 af_headertext								
🖪 🛃 assetLibrary								

If you change a value here, it will be updated in the Theme Editor.

# Themes and the Emulator

Because it's possible to have different CSS properties for different devices, it's also possible to have different theme properties for different devices.

		¢	ŋ					CANVASJ						Edit		Preview
₽	5				iPho Ga	alaxy S5	iPh						iP	Pad		Desktop
0	50	100	150	200 2	250 3	300 3	350 4	00 Sma	aller Screen	550	600	650	700	Phone	800	850
	Cł Gener	nild so al	upport :	services Expendit	s											ŕ
					<	≡										

# **Exercises**

## Get the Form

If you have your own form from the *Adaptive Expense Report* class, you can use it for this exercise. Otherwise, execute the steps in the next section to *Get the Adaptive Form*.

## Get the Adaptive Form

Note: Only do these steps if you don't already have your own form from the Adaptive Expense Report class.

1. Open a new browser tab and enter this URL.

#### www.aemforms.info:4502/aem/start.html

2. Enter your User name and Password.



3. Select Navigation – Forms (see illustration).

Revigation		Navigation
~		
Īn.		,
Projects	Sites	Forms

- 4. Select Forms & Documents and open the SmartDoc Master Forms folder.
- 5. Select the 2023 Expense Report form and click Copy in the Action bar.
- 6. Navigate back to your personal folder and click Paste.
- 7. Change the TITLE <yourname> Expense Report. The NAME will be updated automatically.

Paste		×
TITLE	NAME	
JPT Expense Report	jpt-expense-report	0
	Cancel	Paste

8. Click Paste and Done. You now have the adaptive form for this exercise.

## Copy the Ultramarine Theme

In this exercise, we will use the *Theme Editor* to edit the theme. Since we are all working off a shared server, we will all need our own copy of the theme. Follow these steps to create your own copy of the theme.

9. Open a new browser tab with the AEM Touch UI.

#### http://www.aemforms.info:4502/aem/start.html

- 10. Select Forms Themes.
- 11. Navigate to your working folder. This will be your personal folder in your group folder.

	TqL
	individuals
Label Lorem Ipsum	Themes
Label	Label
Lorem Ipsum 🗸	Lorem Ipsum 🗸

**Note:** If you are an individual subscriber, your folder should be in the Individuals folder. If you are a Group Subscriber, your folder should be in your Group folder. If you do not have a personal folder, create one in either the Individual folder or in your team's Group folder.

12. If you don't already have a personal folder, create one now by selecting Create – Folder.

- 13. Navigate back to the main *Themes* folder.
- 14. Open the *Reference Themes* folder.
- 15. Select the **Ultramarine** theme and click **Copy** in the Action bar.
- 16. Click on the *Reference Themes* heading and select **Themes**.

Reference Themes						
	Reference Themes					
Label	Themes					
Lorem Ipsum						

- 17. Navigate into your personal working folder.
- 18. When you get back to your personal folder, select **Paste**.
- 19. Change the *TITLE* to **<yourname>-Ultramarine**.
- 20. Click Paste and Done.
- 21. Open a new browser tab and enter this URL.

#### http://www.aemforms.info:4502/aem/forms.html

- 22. Navigate to your working folder, the one with your adaptive form.
- 23. Select your adaptive form and click Edit (see illustration).

Edit Properties	Сору	Q Preview 🏚	Download
ADAPTIVE FORM Eva Expense Report	AI	DAPTIVE FORM ynamic-table	

24. You should now have 2 browser tabs open; one with your adaptive form and one with your theme.

*Note: Keeping multiple browser tabs open will make these exercises easier.* 

#### Update your Form

Follow these steps to update your form with this new theme.

- 25. Switch to the tab with your adaptive form.
- 26. Click Edit if you are not already in Edit mode.
- 27. Click Content and select the Form Container.
- 28. Click **Configure** (the wrench icon).
- 29. Click the *Adaptive Form Theme* drop-down and select <**yourname>-Ultramarine**. Note: It may be towards the bottom of the list.

Adaptive Form Theme	
JPT-Ultramarine	~
CSS File	

30. Click **Done** (the blue checkmark).

## **Review the Theme**

- 31. Go back to the tab with your theme.
- 32. Select the theme and click **Edit** in the Action bar.
- 33. Locate the *Page* selector (*see illustration*) on the left in the *Selectors* side panel. If you don't see the *Selectors* panel, click *Toggle Side Panel*.
- 34. Click Edit (the pencil icon) on the Page selector.

Selectors	
P Enter title to find form object(s)	Page E Child support services
> Header	Application Form
Page 🥒	
> Form	

- 35. Open the Text panel and click the trash can icon to remove the Arial font.
- 36. Click the Font Family drop down and select Impact (see illustration).

∽ Text	
Select	× +
<ul> <li>Font Family</li> </ul>	Select 🗸
<ul> <li>Font Weight</li> </ul>	Impact
	Palatino Linotype

- 37. Notice that these settings affect many page items, but not all of them.
- 38. Click the trash can icon to remove the Impact font.
- 39. Click the Font Family drop down and select Georgia.
- 40. Click Done.
- 41. Click **Preview** to see how this change affects the page items.

**Note:** You will need to select Ctrl – Reload this page in Chrome or your browser's equivalent of a hard refresh to make sure the updated CSS loads into the browser.

42. Enter some text in the *First Name* field. Notice the font family setting does not cascade down to the field widgets *(see illustration)*.

Iext Box Widget   Field Widget   🖽	
Hello World	

- 43. Go back to the tab with your adaptive form.
- 44. Select Ctrl Reload this page to refresh the CSS.
- 45. Notice the font family setting does not cascade down to the field widgets but you should see the Georgia font on the footer (*see illustration*).



- 47. Click **Edit** (*the pencil icon*) on the *Page* selector.
- 48. Open the *Text* panel.
- 49. Click the trash can icon to remove the Georgia font.

- 50. Click the Font Family drop down and select Arial.
- 51. Click **Done** and your page's font will be set back to Arial.
- 52. Click the X icon on the top to close the Page selector.
- 53. Locate the Header selector (see illustration) on the left in the Selectors side panel.
- 54. Click **Edit** (*the pencil icon*) on the *Header* selector.

Selectors	
♀ Enter title to find form object(s)	Header
> Header	Application Form
Page	Application Form
> Form	

- 55. Expand the *Background* panel.
- 56. Click the Background Color swatch.
- 57. Enter **0033ff** for the color and hit **Enter** on the keyboard.
- 58. Click **Done** (the blue checkmark).
- 59. Click the X icon on the top to close the *Header* selector.

## **Update the Widgets**

Our strategy will be to update properties at the highest possible level of the hierarchy.

- 60. Expand the Field panel on the side panel (see illustration).
- 61. Select Widget and click Edit (the pencil icon).

✓ Field		
Lab	el	
∽ Wid	get	l l
Т	Fext Box	
Т	lext Area	

- 62. Notice the Widget state is set to Default.
- 63. Open the *Text* panel.

- 64. Enter **1rem** as the *Font Size*.
- 65. Click **Done** (the blue checkmark).
- 66. Close the *Text* panel and open the *Border* panel.
- 67. Click *Border Color* swatch and enter **ff0000** (red) and hit *Enter* on the keyboard. Don't worry, we will change this in a future step.
- 68. Click **Done** (the blue checkmark).
- 69. Select the Border Width drop-down and click Edit individually (see illustration).
- 70. Enter **0px**, **0px**, **2px**, **0px** for the border width. The bottom will be 2px.



- 71. Click **Done** (the blue checkmark).
- 72. Close the *Border* panel and open the *Background* panel.
- 73. Click the Background Color swatch.
- 74. Enter **E8E8E8** for the color and hit *Enter* on the keyboard.
- 75. Click **Done** (the blue checkmark).
- 76. Click the STATE dropdown and select Focus (see illustration).

STATE	Default 🗸	
> Dimensions & Position	Default	•
> Text	Focus	
> Background	Disabled	

- 77. Click the *Background Color* swatch.
- 78. Enter **C3F0FF** for the color and hit **Enter** on the keyboard.

- 79. Click **Done** (*the blue checkmark*).
- 80. Click the STATE dropdown and select Hover.

STATE		Default 🗸
> Dimensions & Position	Default	Î
> Text	Hover	
> Background	Disabled	- 1

- 81. Click the *Background Color* swatch.
- 82. Enter C3F0FF for the color and hit Enter on the keyboard.
- 83. Click **Done** (the blue checkmark).
- 84. Click the STATE dropdown and select Disabled.
- 85. Click the Background Color swatch.
- 86. Enter A9A9A9 for the color and hit Enter on the keyboard.
- 87. Click **Done** (the blue checkmark).
- 88. Close the Background panel and open the Text panel.
- 89. Click the Font Color swatch.
- 90. Enter **808080** for the color and hit **Enter** on the keyboard.
- 91. Click Done (the blue checkmark).

**Note:** The Font Size has no explicit value in the Disabled state. The value from the Disabled state will be used. The Font Color property has an explicit value so this will be used in the Disabled state.

©	Font Color	#808080
©	Font Size	_

- 92. Click the STATE dropdown and select Default.
- 93. Click the X icon on the top to close the Field Widget.
- 94. Select Field Widget Dropdown and click Edit (the pencil icon).
- 95. Open the Background panel.
- 96. Notice there is no explicit background color in any of the states. As we will see, this does not necessarily mean that the higher level settings will cascade down to this control.

97. Click Edit (the pencil icon) in the Image & Gradient section (see illustration).

✓ <u>Background</u>			
Image & Gradient			+ Add
	$\bigtriangledown$	Edit	ŵ
<ul> <li>Background Color</li> </ul>			Ζ

- 98. Notice there is an SVG file for the dropdown arrow. We can add SVG and PNG files to our themes.
- 99. Click **X** to close the selector.

## **Preview the Form**

- 100. Go back to the tab with your adaptive form.
- 101. Click Preview if it is not already selected.
- 102. Right-click on the *Employee Email* field and select **Inspect**.
- 103. Once you do this, you will have the *Empty Cache and Hard Reload* option available in Chrome (*see illustration*). This is the best way to refresh your browser.



- 104. Select Empty Cache and Hard Reload.
- 105. Notice the Default and Hover states of the field widgets.
- 106. Notice that the Dropdown Widget does not have the same Default and Hover states.
- 107. Notice the red baseline of the field widgets.

# Update the Widgets

- 108. Go back to the tab with your theme.
- 109. Make sure the Theme Editor is in **Edit** mode and you side panel is open.
- 110. Click **Edit** (*the pencil icon*) on the Widget selector.

- 111. Open the **Border** panel and click the *Border Color* swatch.
- 112. Enter **999999** for the color and hit **Enter** on the keyboard.
- 113. Click **Done** (the blue checkmark).
- 114. Click **X** to close the selector.
- 115. Expand the *Field Widget* selector and locate the *Dropdown* selector.
- 116. Click Edit (the pencil icon) on the Dropdown selector (see illustration).

Image & Gradient	+ Add	Employment       Dropdown Widget     Field Widget
• •	1	Regular Full-Time Employees
<ul> <li>Background Color</li> </ul>		Current Employment Firm
> Border		

- 117. Open the *Background* panel.
- 118. Click the Background Color swatch.
- 119. Enter **E8E8E8** for the color and hit *Enter* on the keyboard.
- 120. Click **Done** (the blue checkmark).
- 121. Click the STATE dropdown and select Focus (see illustration).

STATE		Default 🗸
> Dimensions & Position	Default	<u>^</u>
> Text	Focus	
> Background	Disabled	- 1

- 122. Click the *Background Color* swatch.
- 123. Enter C3F0FF for the color and hit Enter on the keyboard.
- 124. Click **Done** (the blue checkmark).
- 125. Click the STATE dropdown and select Hover.

STATE		Default 🗸
> Dimensions & Position	Default	^
> Text	Hover	
> Background	Disabled	- 1

- 126. Click the Background Color swatch.
- 127. Enter C3F0FF for the color and hit Enter on the keyboard.
- 128. Click **Done** (the blue checkmark).
- 129. Click the STATE dropdown and select Disabled.
- 130. Click the Background Color swatch.
- 131. Enter A9A9A9 for the color and hit Enter on the keyboard.
- 132. Click **Done** (the blue checkmark).
- 133. Close the Background panel and open the Text panel.
- 134. Click the Font Color swatch.
- 135. Enter 808080 for the color and hit Enter on the keyboard.
- 136. Click **Done** (the blue checkmark).

**Note:** The Font Size has no explicit value in the Disabled state. The value from the Disabled state will be used. The Font Color property has an explicit value so this will be used in the Disabled state.

6	Font Color	#808080
6	Font Size	_

- 137. Click the STATE dropdown and select Default.
- 138. Click the X icon on the top to close the selector.
- 139. Close the Widget panel on the Selectors side panel and locate the Error Message selector on the Field panel.
- 140. Click **Edit** (the pencil icon) on the Error Message.
- 141. On the bottom of the side panel, open the Simulate panel (see illustration).
- 142. Select the **Simulate Error** option. You will see the fields update with their Error state (*see illustration*). Note: If you don't see the fields update with their Error state, refresh your browser.

۲	Font Family	Select 🗸	First Name
۲	Font Weight	Select 🗸	
6	Font Color	#e31c3d	There is an error in this field !
			Last Name
©	Font Size	16рх	
۲	Line Height	_	There is an error in this field !
		~	Gender
	Simulate Success	•	
	Simulate Error		

- 143. Open the **Text** panel.
- 144. Click the Font Color swatch and set the color to full red (255 red, 0 green, 0 blue).
- 145. Hit Enter on the keyboard to commit this number.
- 146. Click **Done** (the blue checkmark).
- 147. Click the Font Weight drop-down and select Bold.
- 148. Enter 1rem for the Font Size.
- 149. Click **Done** (the blue checkmark).
- 150. Click the Field Error Message (*There is an error in this field!*) on the canvas so you can see the *Field Error Message* tab (*see illustration*).
- 151. Click the *Parent* icon to the right of the *Field Error Message* tab (*see illustration*). This will take you to the parent selector which is the *Field* selector.

First Name
Field Error Message
There is an error in this field !

- 152. Click the *Field* tab so you can see the *Field* selector on the side panel.
- 153. Make sure the STATE is set to Error (see illustration).

Field	× ✓
Desktop	
STATE	Error 🗸
<ul> <li>Border Color</li> </ul>	#e31c3d

- 154. Open the Border panel.
- 155. Select the Border Width property and increase the Left border to 4px.
- 156. Click Done.
- 157. Click the Border Color swatch and set the color to full red (255 red, 0 green, 0 blue).
- 158. Click Done.
- 159. Click **X** to close the selector.
- 160. Select the Field Widget selector and click Edit (the pencil icon).
- 161. Click the STATE dropdown and select Error.
- 162. Open the Border palette.
- 163. Click the Border Color swatch and set the color to full red (255 red, 0 green, 0 blue).
- 164. Hit Enter on the keyboard to commit this number.
- 165. Click **Done** (the blue checkmark).
- 166. Click **X** to close the selector.

## Test the Updated Theme

- 167. Go back to the tab with your adaptive form.
- 168. Select Edit if your form is not already in Edit mode.
- 169. Scroll to the bottom of the Employee panel and locate the Drag components here Employee box.
- 170. Select the Drag components here Employee box and click Insert component (see illustration).

Smart Doc Client Name	Other Client Name
Microsoft V	
mercomponent	Drag components here - Employee

- 171. Select Email.
- 172. Select this new Email component and click Configure (the wrench icon).
- 173. Close the Basic panel and open the Patterns panel.
- 174. Copy the validation pattern. It should look like this.

^(([^<>()\[\]\\.,;:\s@"]+(\.[^<>()\[\]\\.,;:\s@"]+)\*)|(".+"))@((\[[0-9]{1,3}\.[0-9]{1,3}\.[0-9]{1,3}\.[0-9]{1,3}\.[0-9]{1,3})](([a-zA-Z\-0-9]+\.)+[a-zA-Z]{2,}))\$

175. Select the Employee Email field and click **Configure** (the wrench icon).

<	Employee	Exper	nses	Sigr	nature	R	eview	Su	mmary	>
1	۲. jz	C	℅	Ŵ	+	Ê	ē		<b>{}</b> }	
Empl	oyee Email	Text Box	Emplo	yee First M	Vame		Employe	e Last Na	me	

- 176. Close the Basic panel and open the Patterns panel.
- 177. Click the Validation Pattern Type dropdown and select Custom.
- 178. Paste the validation pattern into the Pattern field (see illustration).

Туре	
Custom	~
Pattern	6
^(([^<>()\[\]\\.;;:\s@"]+(\.[^<>()\[\]\\.;;:\s@"]+)*) (".+"))@((\[[0-9]{1,3}\.[0-9]{1,3}\.[0-9]{1,3}	\.[0-9]{

#### 179. Click Done.

- 180. Click **Preview** if it is not already selected.
- 181. Select Empty Cache and Hard Reload.



**Note:** If you do not have the Empty Cache and Hard Reload option available, right-click on the Employee Email field and select **Inspect**.

- 182. Notice the *Default, Hover*, and *Focus* states of the field widgets are consistent.
- 183. Enter random text in the *Employee Email* field and hit Tab on the keyboard.
- 184. Notice the Error message field and text (see illustration).

Sma	SmartDoc Technologies				
	Employee	Expenses	Signature	Review	
Employee	e Email		Employee First Name		
ertewte	ert				
Field not	filled in expected	format.			

185. Now enter a proper email address and hit Tab on the keyboard.

186. You will see the field changes to the Success state.

SmartDoc Te	SmartDoc Technologies					
Employee	Expenses	Signature	Review			
Employee Email jp@smartdoctech.com		Employee First Name				

# **Themes and Client Libraries**

In some cases, we need to define our CSS in a client library.

# **Exercises**

## Open your theme and form

Follow these steps to open your theme and form if they are not already open.

1. Launch Chrome or Firefox and open the AEM Touch UI.

#### www.aemforms.info:4502/aem/start.html

2. Enter your User name and Password.

Welcome to Adobe Experience Manager	Sign In User name
An Adobe Experience Cloud solution: All the tools you need to solve these complex digital business challenges. Learn More	
	Sign In

3. Select Navigation – Forms (see illustration).

Ref.	rigation		Navigation
٢			[]
	<b>I</b>		, E
	Projects	Sites	Forms

4. Select Themes and open your personal folder.

**Note:** Your personal folder will be in your group folder. If you have a group subscription, the name of your group folder is your company's or organization's name. If you have an individual subscription, the name of your group folder is individuals.

- 5. Select the <yourname>-Ultramarine theme and click Edit in the Action bar.
- 6. Open a new browser tab with the AEM Touch UI.

#### http://www.aemforms.info:4502/aem/start.html

- 7. Select Forms Forms & Documents.
- 8. Open your personal folder.

- 9. Select the <yourname>-Expense Report form and click Edit in the Action bar.
- 10. Select the browser tab with your theme.
- 11. Your screen should now look like this (*see illustration*). We can edit our themes in the theme tab and then preview the results in our form tab.



## Update the Panel Navigation

- 12. Open the Panel selector in the Selector side panel on the left.
- 13. Open the Tabs on Top panel and the Tab Navigation Group Level 1 panel (see illustration).
- 14. Click **Edit** (*the pencil icon*) on the *Title* selector.

~	Tabs on Top	
	<ul> <li>Tab Navigation Group - Level 1</li> </ul>	
	Title	

- 15. Click the STATE dropdown and select Active.
- 16. Open the *Text* panel.
- 17. Click the *Font Color* swatch
- 18. Enter 0033ff.
- 19. Click Done.
- 20. Close the *Text* panel and open the *Border* panel.
- 21. Click the Border Color swatch
- 22. Enter 0033ff.
- 23. Click Done.
- 24. Click X to close the selector.

## Update the Table Styles

- 25. Expand the *Table* selector in the Selector side panel on the left.
- 26. Click Edit (the pencil icon) on the Header Row selector.
- 27. Expand the Dimensions & Position panel.
- 28. Enter **1rem** for the *Height*.
- 29. Click Done.
- 30. Close the Dimensions & Position panel and open the Background panel.
- 31. Click the Background Color swatch and enter 66ccff. Notice that the color does not change in the canvas.
- 32. Click Done.
- 33. Click **X** to close the selector.
- 34. Click the black *Table Header Cell* tab to open the selector.
- 35. Open the Background panel.
- 36. Click the *Background Color* swatch and clear the color. Notice that the color changes in the canvas (*see illustration*). Once we remove the child selector's value, the child selector will inherit from its parent.

Expenditure       Table Header Cell			
Serial Number	Category	Amount	

- 37. Click Done.
- 38. Click X to close the selector.
- 39. Click the Text item in the header row on the canvas (see illustration).
- 40. Click the black Text tab that you see on the canvas (see illustration). Notice the Text selector appears on the side panel. This is a second way to open a selector.

Text	Expenditure			
	Text			
Serial Number Category Amount	Serial Number	Category	Amount	

- 41. Open the *Text* panel.
- 42. Click the Font Color swatch and enter FF0000.
- 43. Click Done.

44. Notice that the text in the header row is now red but so are other text items in the canvas *(see illustration)*. We will need to solve the challenge of table header text with a more precise selector.

> Dimensions & Position	1	Application Form	
~ Text		Expenditure	
Select	~ +		
	Select 🗸	Expenditure	
<ul> <li>Font Weight</li> </ul>	Select 🗸	Details	
	rgb(255,0,0)	Serial Number	Category

- 45. Click the Font Color swatch and clear the color.
- 46. Click Done.

## Use a Client Library

Follow these steps to reference a client library in your form.

- 47. Select the browser tab with your adaptive form.
- 48. Click Content, select the Form Container, and click Configure (the wrench icon).
- 49. Enter **smartdocTraining** for the *Client Library Category*.
- 50. Click Done.
- 51. Click Preview.
- 52. Select the Expenses tab. Notice that the header text is now white.
- 53. Right-click on the white Category header text and select Inspect.
- 54. Notice that the white color is coming from the client library and not the theme (*see illustration*). This is a more precise selector.



## Use Style Mode for Button Icons

- 55. Click Edit to return to Author mode.
- 56. Click the *Edit* dropdown and select **Style**.
- 57. Click the Next button and the pencil icon to edit the button's style



- 58. Open the *Background* panel.
- 59. Click the Background Color swatch.
- 60. Enter ffffff and click Done.
- 61. Hover over +Add and select Image.
- 62. Click Upload and navigate to your Student Files.
- 63. Select next-icon-blue-desktop.svg and click Open.
- 64. Click Done.
- 65. Click Edit (the pencil icon) to edit the image settings.

✓ Background				
Image &	Gradient		+	- Add
#	©		ø	۵

- 66. Click the Size dropdown and select Contain.
- 67. Click the *Position* dropdown and select **Right Center**.
- 68. Click the *Tiling* dropdown and select **No Repeat**.
- 69. Click Done.
- 70. Close the Background panel and open the Text panel.
- 71. Click the Text Align dropdown and select Left.
- 72. Close the Text panel and open the Dimensions & Position panel.
- 73. Click the Padding dropdown and enter .5rem for the Left property.
- 74. Enter 5.5rem for the Width.
- 75. Click Done.
- 76. Close the Dimensions & Position panel and open the Border panel.
- 77. Click the Border Color swatch.

#### 78. Enter **0071bc** and click **Done**.

79. Click the STATE dropdown and select Hover (see illustration).



- 80. Open the Background panel.
- 81. Click the Background Color swatch.
- 82. Enter **0071bc** and click **Done**.
- 83. Hover over +Add and select Image.
- 84. Click Upload and navigate to your Student Files.
- 85. Select next-icon-white-desktop.svg and click Open.
- 86. Click Done.
- 87. Click Edit (the pencil icon) to edit the image settings.

✓ Backg	ground		
Image &	Gradient	4	- Add
	©	ø	Ŵ

- 88. Click the Size dropdown and select Contain.
- 89. Click the Position dropdown and select Right Center.
- 90. Click the Tiling dropdown and select No Repeat.
- 91. Click Done.
- 92. Click the STATE dropdown and select **Down** (see illustration).

STATE	Default 🗸
> Dimensions & Position	Default
> Text	Down

Note: Although Adobe calls the state Down, in CSS the state is active (i.e. :active).

- 93. Open the *Background* panel.
- 94. Click the Background Color swatch.
- 95. Enter **bebebe** and click **Done**.
- 96. Hover over +Add and select Image.
- 97. Click Upload and navigate to your Student Files.
- 98. Select *next-icon-gray-desktop.svg* and click **Open**.
- 99. Click Done.

100. Click Edit (the pencil icon) to edit the image settings.

✓ Backg	ground		
Image &	Gradient	4	- Add
#	©		Ŵ

- 101. Click the Size dropdown and select Contain.
- 102. Click the Position dropdown and select Right Center.
- 103. Click the *Tiling* dropdown and select **No Repeat**.
- 104. Close the Background panel and open the Border panel.
- 105. Click the Border Color swatch and enter 666.
- 106. Click Done.
- 107. Select the Next Button Text selector (see illustration).

	COPY STYLE	CLEAR STYLE
Back	Submit	Next

108. Click the STATE dropdown and select Default.

- 109. Open the *Text* panel.
- 110. Click the Font Color swatch and enter 0071BC.
- 111. Click Done.
- 112. Click the STATE dropdown and select Hover.
- 113. Click the Font Color swatch and enter ffffff.
- 114. Click Done.
- 115. Click the STATE dropdown and select **Down**.
- 116. Click the Font Color swatch and enter 666.
- 117. Click Done.
- 118. Click **Preview**.
- 119. Scroll down to the toolbar.
- 120. Hover over the Next button and notice the change from the Default settings to the Hover settings.
- 121. Click and hold the Next button and notice the values of the Down, or active, settings.



Note: We can also enter values for the Focus and Disabled states.

# **Create a Client Library**

Client Libraries enable us to extend the look and functionality of our adaptive forms.

**Note:** If you are working on advanced topics and need CRXDE | Lite access to the Sandbox, email us (<u>info@smartdoctech.com</u>) and we will extend your privileges. Without these extended privileges you won't be able to save your changes in CRX.



# The JCR Folders

If you are new to development in CRXDE | Lite, the following definitions are important to know. In particular, we will be copying nodes from Adobe's libs folder and developing them in our apps folder in this course.

Folder	Description
/apps	This is where we create our applications. This folder can contain components, overlays, client libraries, bundles, and i18n translations.
/conf	This stores the configurations, dynamic templates and policies for application.
/content	The content created for your website.
/etc	This stores resources related to utilities and tools.
/home	This stores the AEM Users and Groups.
/libs	This is where Adobe stores the AEM software. It contains the libraries and software for AEM and represent the <i>out-of-the-box</i> AEM features. When you apply service packs and cumulative fix packs, you will see many updates to this folder.
/oak:index	This stores the Jackrabbit Oak index definitions. Each node specifies the details of one index. The standard indexes are visible, and you can use them to create custom indexes.
/system	This folder is only used by Apache Oak.
/tmp	This folder serves as a temporary working area.
/var	This stores system files including statistics and audit logs. You can find the Java servlets in the /var/classes folder.

# **Exercises**

## **Create a Client Library**

1. Launch Chrome or Firefox and open the AEM Touch UI.

### www.aemforms.info:4502/aem/start.html

2. Enter your User name and Password.



- 3. Select Navigation Tools and click CRXDE Lite.
- 4. Notice the **Develop** icon is selected (see illustration).

CRXDE Lite	
ave All ▼ Create ▼ Delete	Copy Paste Move Rename Overlay Node Mixins
/apps/advanced/jpt	
₩ ≪	🙆 Home 📄 css.txt 💌

#### 5. Navigate to apps/students.

6. If you have an individual subscription, select the *individuals* folder. If you have a group subscription, select your organization's folder.

**Note:** Your personal folder will be in your group folder. If you have a group subscription, the name of your group folder is your company's or organization's name. If you have an individual subscription, the name of your group folder is individuals.

- 7. Right-click on the folder and select Create Create Folder...
- 8. Enter <yourname> or <yourinitials> for this personal folder.
- 9. Click Save All.
- 10. Your goal is to have a personal folder within your organization's folder or within the *individuals* folder. For instance, my personal folder is in the *individuals* folder (*see illustration*).

smartdoc-training     social     j    students     australia	CR)		Lite
<ul> <li>australia</li> <li>australia</li></ul>	Enter search terr	m to search the re	pository
🖽 💋 fda			
🖽 📁 hawaii			
🕀 🥥 hennepin	Properties	Access Control	Replication
🖃 🥥 individuals	Name 🔺	Туре	Value
🕀 💭 jpt	1 jcr:primaryType	Name	nt:folder
🗄 🥥 pacxa			

- 11. Right-click on your personal folder and select **Create Node...**
- 12. Enter **clientlibs** for the *Name*.
- 13. Click the *Type* dropdown and select **cq:ClientLibraryFolder**.
- 14. Click **OK**.
- 15. Click Save All.
- 16. Select the clientlibs node and open the Properties panel (see illustration).
- 17. Add this property to the clientlibs node (see illustration).
- Name: categories
- Type: String
- Value: <yourname>
- Multi: selected

							(	¥
+	Properties	Access Contro	l Rep	lication	Console	B	uild Info	+
	Name 🔺	Туре	Value	1	Protected	Mandatory	Multiple	
1	jcr:primaryType	Name	cq:ClientLibra	aryFolder t	true	true	false	
	1		2		<b>3</b>	4	6	
Nar	me categories	Туре	String	✓ Value	e ipterry	Multi	Add	<b>&gt;&gt;</b>

**Note:** If you are new to CRXDE | Lite, review these bullet points because they will help you when it comes time to add properties to your node. You add properties with the toolbar at the bottom of the Properties panel.

- #1: This is where you will enter the Name of your new property.
- #2: This is where you will enter the datatype of your new property.
- #3: This is where you will enter the Value of your new property.

- #4: If your new property needs to be an array of your datatype, select the Multi button.
- #5: Once your values are all set, click the **Add** button.
- 18. Click Add.
- 19. The property we are creating is a String Array so we will see the Edit categories window with our initial category. It is possible at this point to add other values to the array, but we will hold at 1 value.
- 20. Click OK in the Edit categories window.
- 21. Click Save All.
- 22. Your properties for the clientlib node should now look like this (see illustration).

								8
Pr	operties Ac	cess Control	Repl	ication	Console		Build Info	
	Name 🔺	Туре	Value		Protected	Manda	tory Multiple	Auto Cre
1	categories	String[]	jpterry		false	false	true	false
2	jcr:primaryType	Name	cq:ClientL	ibraryFolder	true	true	false	true
•								•
Nan	ne categories	Туре	String	✓ Val	ue ipterry		Multi 🗿 Add	»

- 23. Right-click on the clientlibs node and select Create Create Folder...
- 24. Enter **css** for the *Name* and click **OK**.
- 25. Click Save All.
- 26. Right-click on the clientlibs node and select Create-Create File...
- 27. Enter css.txt for the Name and click OK.
- 28. Click Save All.
- 29. Double-click the css.txt file and enter this code into the text editor.

#### #base=css

30. Click Save All. Your file should now look like this (see illustration).

6	Home	css.txt	×
5	æ		
1	#base=css		
Line	1, Column 10		

- 31. Right-click on the clientlibs node and select Create Create Folder...
- 32. Enter **js** for the *Name* and click **OK**.

- 33. Click Save All.
- 34. Right-click on the clientlibs node and select Create-Create File...
- 35. Enter **js.txt** for the *Name* and click **OK**.
- 36. Click Save All.
- 37. Double-click the **js.txt** file and enter this code into the text editor.

#### #base=js

38. Click Save All.

Your structure should look like this.

đħ	~	🚱 Home 📄 css.txt
individuals	Î	電 番
		1 #base=js
is.txt		Line 1, Column 9

Congratulations, you have created the structure of your client library.

## Update your Form

39. Open a new browser tab with the AEM Touch UI.

http://www.aemforms.info:4502/aem/start.html

- 40. Select Forms Forms & Documents.
- 41. Open your personal folder.
- 42. Select the <yourname>-Expense Report form and click Edit in the Action bar.
- 43. Click Content, select the Form Container, and click Configure (the wrench icon).
- 44. Enter <**yourname**> for the *Client Library Category*.

*	✓ Basic	
4	Use an existing Adaptive Form	0
	Prefill Service	0
	Select	~
Ð	Client Library Category	0
46	jpterry	
	Adaptive Form Theme	

- 45. Click Done.
- 46. Go back to the tab with CRXDE Lite and your client library.

## Create a CSS File

- 47. Right-click on the css folder and select Create Create File.
- 48. Enter **tables.css** for the *Name*.
- 49. Click **OK**.
- 50. Click Save All.
- 51. Expand the tables.css node so you can select the jcr:content node.
- 52. Double-click the jcr:data property.
- 53. Click Browse and navigate to your Student Files.
- 54. Select *tables.txt* and click **Open**.
- 55. Click OK and the CSS will load into CRX (see illustration).



- 56. Click Save All.
- 57. Double click your css.txt file and add a reference to your new CSS file.

#### #base=css tables.css

58. Click Save All.

## **Create a JS File**

- 59. Right-click on the **js** folder and select **Create Create File**.
- 60. Enter **bootbox.js** for the *Name*.
- 61. Click **OK**.
- 62. Click Save All.
- 63. Expand the **bootbox.js** node so you can select the **jcr:content** node.

- 64. Double-click the jcr:data property.
- 65. Click Browse and navigate to your Student Files.
- 66. Select *bootbox.txt* and click **Open**.
- 67. Click **OK** and the JavaScript will load into CRX (see illustration).

	<b>#</b> «	Mome ables.css
<ul> <li>individuals</li> <li>jpt</li> <li>clientlibs</li> <li>css</li> <li>tables.css</li> <li>jcr.content</li> <li>css.txt</li> <li>jcr.content</li> <li>js</li> <li>bootbox.js</li> <li>js.txt</li> </ul>	•	<pre></pre>

- 68. Click Save All.
- 69. Double click your js.txt file and add a reference to your new JS file.

#### #base=js bootbox.js

70. Click Save All.

**Note:** Bootbox is a JavaScript library that makes it easy to create modal dialogs. Bootbox has three functions; alert(), confirm(), and prompt().

## Use the Client Library in your Form

- 71. Open the browser tab with your adaptive form.
- 72. Click Content and expand the Expenses Panel and Table.
- 73. Expand Row 1 so you can see the Numeric Box.
- 74. Select the Numeric Box on Row 1 and click Edit Rules (the mallet icon).

٩,	Edit Rules	℅	ŝ			<b>{}</b>	<b>%</b>	Ħ
			Entert	ainment	$\sim$			Numeric Box

75. Click **Create** to make a new rule.

- 76. Click Form Objects and Functions so you can see the side panel.
- 77. Click Code Editor on the right.
- 78. Click Edit Code and click Edit in the Edit Code dialog.
- 79. Clear the stub code in the editor. Notice the event is set to Value Commit.
- 80. Enter this script into the editor.

```
if(this.value > 10000) {
    bootbox.alert("An individual expense item cannot exceed $10,000.");
}
```

81. Your screen should now look like this.

FC	orm Objects and Functions Code Editor	~	
\${TITLE}	Value Commit 🗸		•
1 ▼ 2 3 4	<pre>if(this.value &gt; 10000) {     bootbox.alert("An individual expense item cannot exceed \$10,000."); }</pre>		
4		•	•

- 82. Click Done.
- 83. Click Close.

## **Test your Form**

- 84. Click **Preview**.
- 85. Select the **Expenses** tab. Notice that the header text is now white.
- 86. Right-click on the white Category header text and select Inspect.
- 87. Notice that the white color is coming from the client library and not the theme (*see illustration*). This is a more precise selector.

```
Inherited from th#guideContainer-rootPane...
.guideTableNode table .guideTableRowNode.guideTableHeader clientlibs.css:1
th {
   color: □#ffffff;
}
```

- 88. Enter 100,000 in the Cost column of the first row.
- 89. Notice the bootbox dialog box (see illustration).

SmartDo	An individual expense item	cannot exceed \$10,000.	×
Employee 			ок
Date			
mm/dd/yyyy	•	~	100000

# About this Courseware

SmartDoc Technologies supplied the official *Adobe-Certified* AEM Forms Training courseware to Adobe and Adobe's clients from 2016 – 2021. During that time, our SmartDoc Courseware was battle-tested by thousands of students worldwide. Our SmartDoc Technologies courseware has been peer-reviewed and certified by the Adobe *Engineering*, *Product*, and *Curriculum* teams and by thousands of students like you.

In addition to having the highest *quality* AEM Forms courseware, the SmartDoc library also has the highest *quantity* of AEM Forms courseware. You will find the perfect course for your specific AEM Forms needs in the SmartDoc library. You can always find a current listing of our Adobe AEM Forms training courses on our website.

#### www.smartdoctech.com

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<b>Public AEM Forms Training Courses</b> We develop and deliver the highest quality <i>AEM</i> Adobe agrees that our teaching and courseware these upcoming classes for Adobe. You can regis classes with the links provide here.	AEM Forms Designer HTML Forms with Designer JavaScript Fundamentals JavaScript for Designer Advanced JavaScript AEM Forms Administration AEM Forms Administration JEE
	Create Sites Sites and Forms Introduction to Adobe Sign AEM Forms and Sign