

# Process Form Submission



SmartDoc Technologies Courseware

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# Process Forms Submission

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## Before we Begin

Workflow has always been an important part of AEM Forms. This module focuses on AEM Forms workflow with the AEM OSGi workflow tools.

### Environments:

We can use a SmartDoc Sandbox for these exercises. The following packages must be installed.

- The Forms-Workflow-Course package

### Prerequisites:

The previous courses in this section.

## www.aemforms.training

The support site ([www.aemforms.training](http://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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## The Course Package

The Course Package is called **Forms-Workflow-Course-<version>.zip** and it contains these filters.

| Path                                                             | Description                                                  |
|------------------------------------------------------------------|--------------------------------------------------------------|
| /apps/forms-workflow                                             | HTML template                                                |
| /content/forms/af/forms-workflow                                 | Forms                                                        |
| /content/dam/formsanddocuments/forms-workflow                    |                                                              |
| /content/dam/forms-workflow                                      | serviceSchema.json, attachments.xsd, user.xsd                |
| /content/dam/formsanddocuments-fdm/forms-workflow                | Form Data Models                                             |
| /conf/global/settings/cloudconfigs/fdm/jpt-soap-web-service-ldap | Data source for the web service, connects to aemforms.expert |
| /conf/global/settings/workflow/models/masterInvokeFDM            | Design time Workflow Model                                   |
| /var/workflow/models/masterInvokeFDM                             | Run time Workflow Model                                      |
| /conf/global/settings/workflow/models/jptAttachments             | Design time Workflow Model                                   |
| /var/workflow/models/jptAttachments                              | Run time Workflow Model                                      |

Forms-Workflow-Course
Create Package
Upload Package

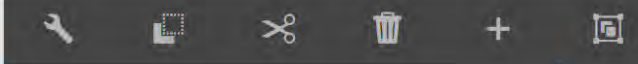


**Forms-Workflow-Course-2.0.zip**
OK | 401.1 KB

Version: 2.0 | Build: 16 | Last installed Mar 15 | admin

2.0 2-26-22 1.9 6-17-2021 1.8 5-26-2021 1.7 1-22-2021 1.6 1-21-2021

1.5 Added the JSON Schemas in the Assets folder. 1.4 11-19-2020 1.3 user.xsd 1.2 /content/dam/forms-workflow 1.1 Email Template




**Container**

Container Step

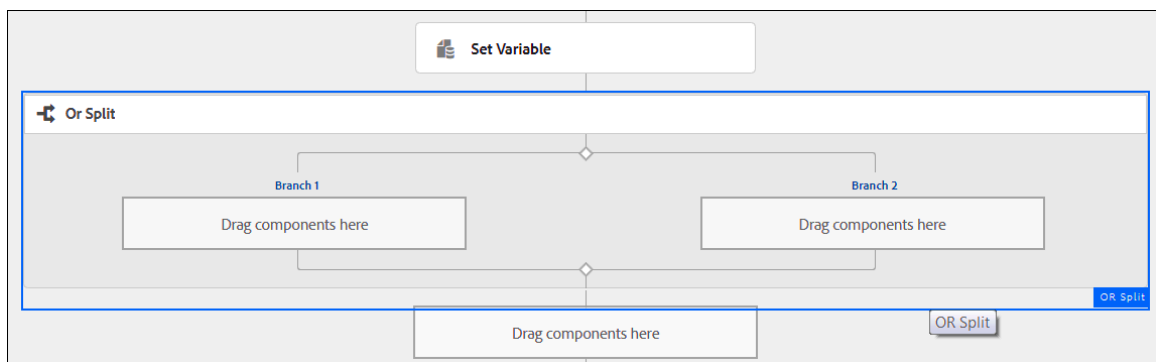
Drag components here

# Process Form Submission

This hands-on exercise guides students through building a workflow that processes form data, the generated Document of Record (DoR), and any uploaded attachments. Students implement business logic using the OR Split, which enables conditional branching, and write ECMA scripts to extend workflow functionality. This course demonstrates how to orchestrate complex submission flows in AEM.

## The OR Split Step

We will use the *OR Split* step in the exercise. The OR Split enables us to create conditional branches in our workflow. Only one branch in an OR Split is followed. Each branch can contain one or more workflow steps.



## The Goto Step

The *Goto* step also enables us to control workflow routing.

The screenshot shows the 'Goto Step' configuration dialog. It has two tabs: 'Common' and 'Process'. The 'Process' tab is selected. Under the 'Process' tab, there is a 'Target step' dropdown menu with the text 'Select one of the eligible workflow steps'. Below this is a 'Routing Expression' section with a dropdown menu showing 'ECMA Script'. Below the dropdown menu, there are three input fields: 'Rule Definition', 'External Script', and 'ECMA Script'. The 'ECMA Script' field is highlighted with a blue background.

# The Expression Editor

We will use the Expression Editor in the exercise. The Expression Editor is like a primitive, stripped-down version of the Rules Editor in adaptive forms. We can use it to create simple expressions, but it is limited. For instance, in this expression, the value of `fullName` is set to an expression that concatenates `firstName` and `lastName`.



## Exercise Part 1:

### Create the Adaptive Form

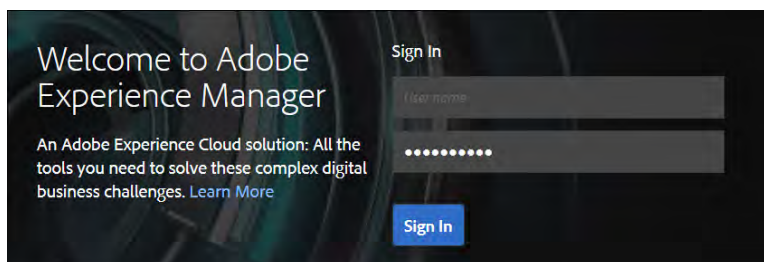
1. Launch Windows Explorer (or Macintosh Files view) and open your **Student Files** folder.
2. Make a copy of **attachments.xsd** (see illustration) and name it **<yourname>-attachments.xsd**.



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

<https://www.aemforms.info:8444/aem/start.html>

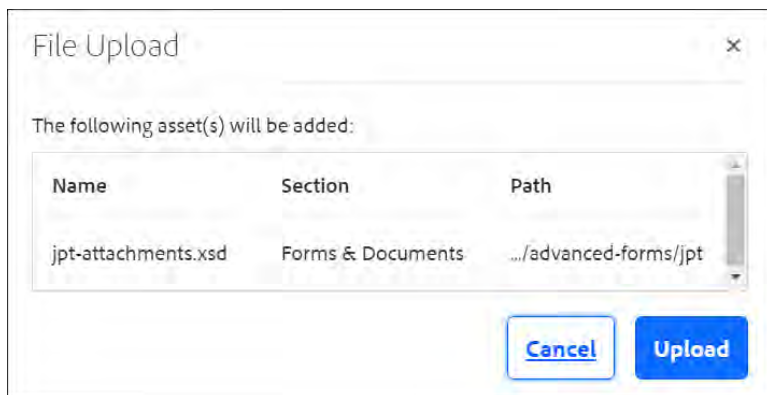
4. Enter your *User name* and *Password*.



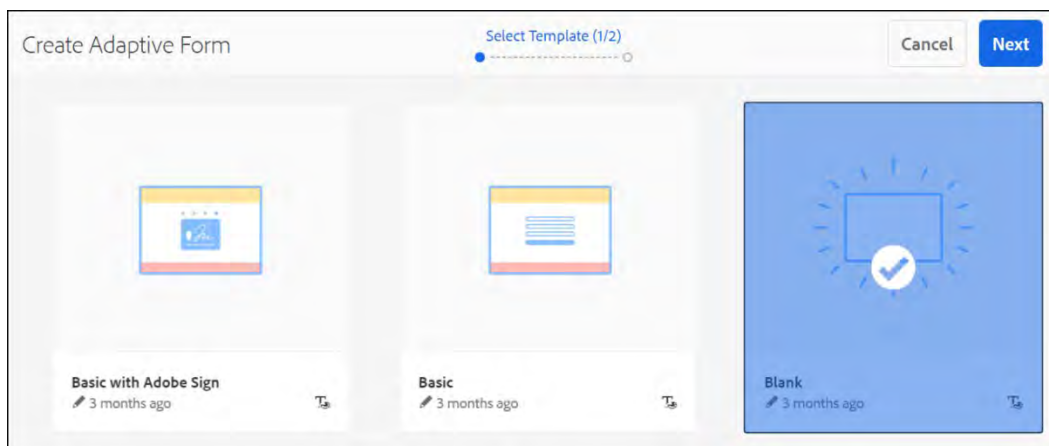
5. Open **Forms – Forms & Documents** and navigate to your personal folder.

**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.

6. Select **Create – File Upload**.
7. Navigate to your Student Files and select the <yourname>-**attachments.xsd** file you just created.
8. Click **Open**. You will see the *File Upload* dialog (see illustration).

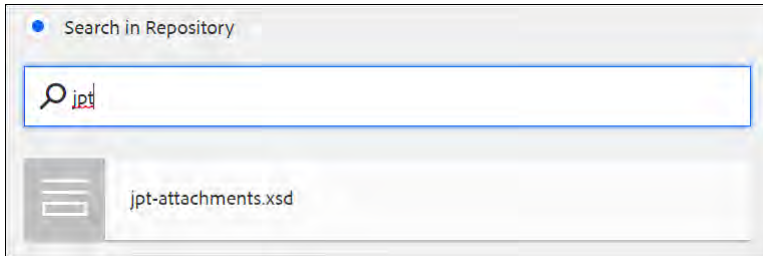


9. Click **Upload** and **Close**.
10. Click **Create** and select **Adaptive Form**.
11. Select the **Blank** template (see illustration).



12. Click **Next**.
13. Enter <yourname> **Attachments** for the *Title*. The name will be generated automatically.
14. Enter **This form submits the form data and attachments to an AEM workflow** for the *Description*.
15. Select the **Form Model** tab.
16. Click the *Select From* dropdown and select **Schema**.
17. Click **Select Schema** to expand the **Select Schema** panel.

18. Select **Search in Repository** and search on **<yourname>** (see illustration).



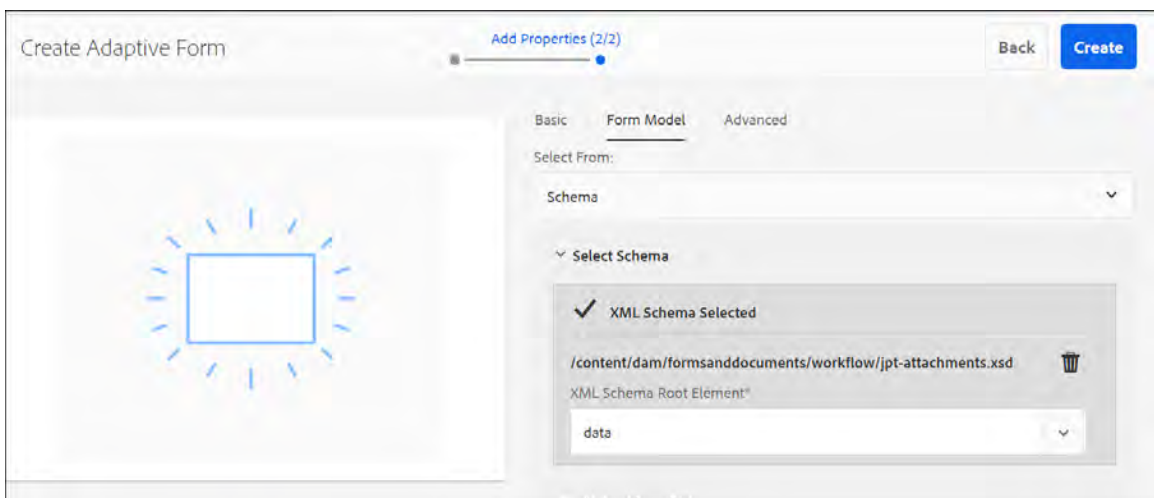
19. Select the **<yourname>-attachments.xsd** schema file.

**Note:** The *.xsd* extension stands for XML Schema Definition.

20. Click the **XML Schema Root Element** dropdown and select **data**. This is the root of the XML schema.

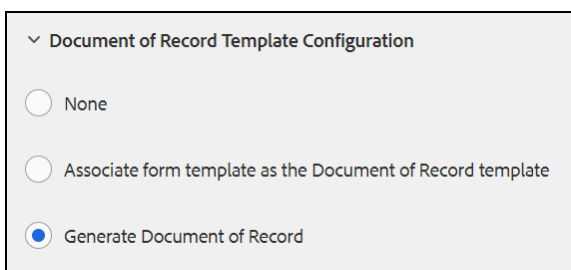
**Note:** An XML Schema can have more than one root element, but this schema only has one. When a schema has more than one root element, AEM needs to know which root element the form will use so this property is required, even when the schema only has one root element.

21. Your Form Model should now look like this (see illustration).



22. Scroll down and expand the **Document of Record Template Configuration** panel.

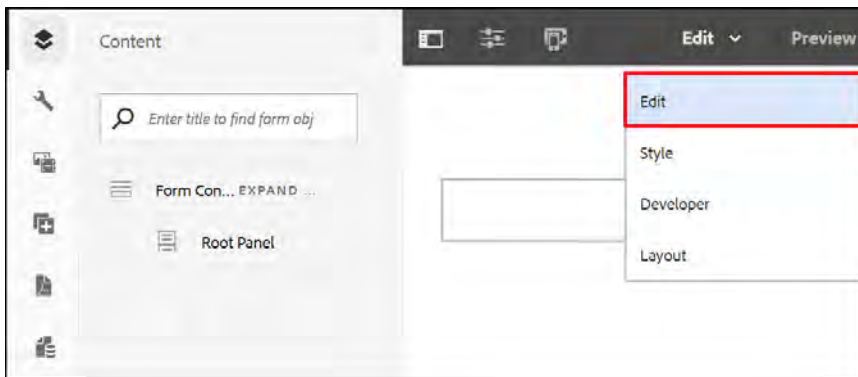
23. Select **Generate Document of Record** (see illustration).



24. Click **Create**.

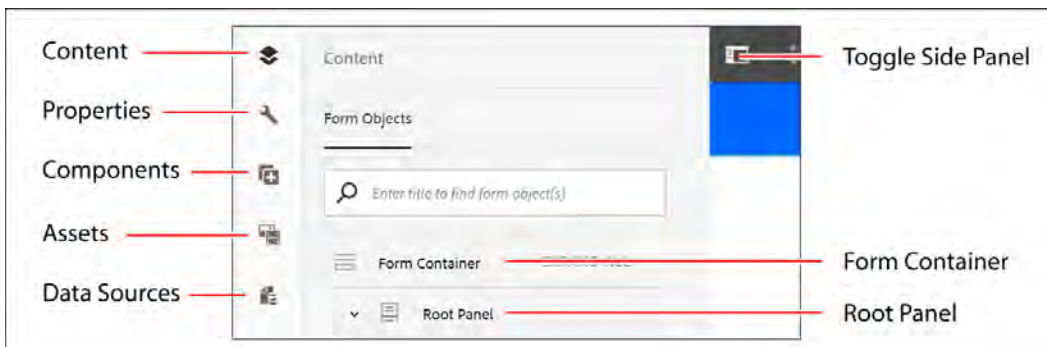
25. Click **Edit**.

26. Make sure you are in **Edit** mode. You can determine this and set this in the upper right corner (*see illustration*).



27. Open your side panel if it is not already opened by clicking Toggle Side Panel (*see illustration*).

This illustration shows the key icons in the Side Panel.



- **Toggle Side Panel** opens and closes the Side Panel.
- **Content** shows your Form Hierarchy.
- **Components** shows the *out-of-the-box* Adobe form components.
- **Assets** shows items in the Asset Manager.
- **Data Sources** shows the elements of your Form Model.

28. Select **Data Sources** on the left. You will see the Data Sources panel (*see illustration*).

29. Drag and drop all 6 data nodes from your **Data Sources** to your form (*see illustration*).

Enter title to find form object(s)

**Data** EXPAND ALL

- ABC User Name
- ABC Email Receiver
- ABC Email Sender
- Date Submitted
- ABC Attachment Name

Email Receiver

Email Sender

Date Submitted

**Note:** The data type defined in the XML Schema will determine the form field type.

30. Select the *Date Submitted* field on your form and click **Configure** (the wrench icon).

31. Scroll down and notice that the *Bind Reference* is set to the dateSubmitted node.

**/data/dateSubmitted**

32. Select *Set current date as default value*.

33. Click **Done**.

34. Select the *Email Sender* field on your form and click **Configure** (the wrench icon).

35. Enter **smartdoctechllc@gmail.com** as the *Default Value*.

36. Click **Done**.

37. Select your *Form Name* field and click **Configure** (the wrench icon).

38. Enter **<yourname>** as the *Default Value* (see illustration). Do not include spaces in <yourname> and try to make it unique. If you have a common name, then you can concatenate your first and last names to make it more unique. For instance, I used *jamesterry* for my default value.

Bind Reference

/data/formName

☐ Use HTML5 Input Type

Default Value

jamesterry

☐ Allow multiple lines

Date Submitted

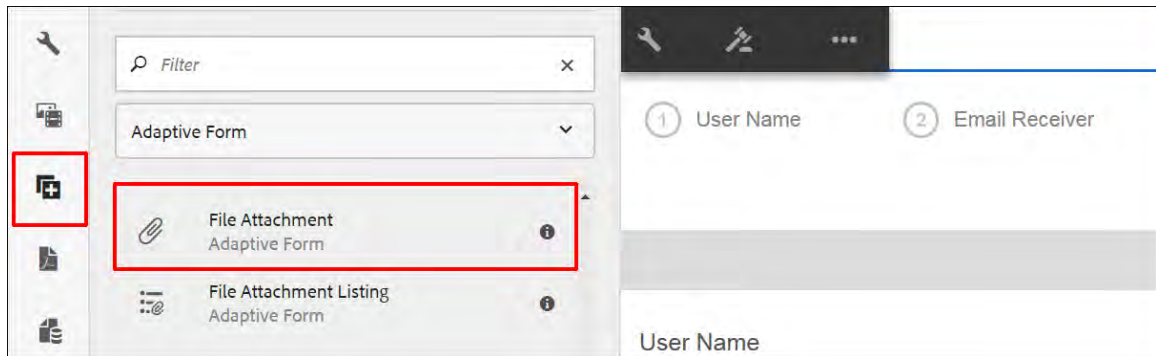
Form Name

39. Click **Done**.

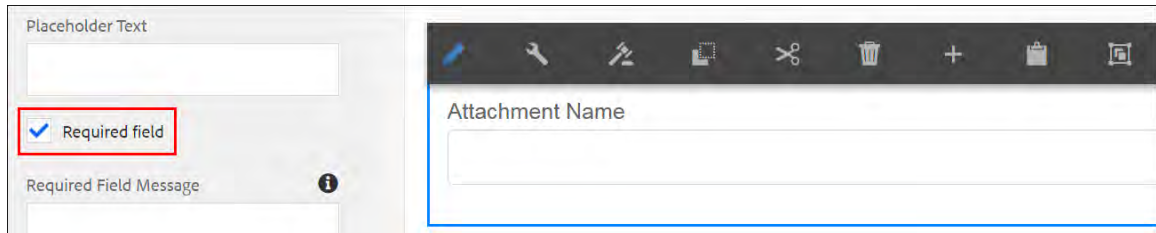
40. Select **Components** on the left select the **Adaptive Form** filter (see illustration).

41. Drag and drop the **File Attachment** component to the bottom of your form.

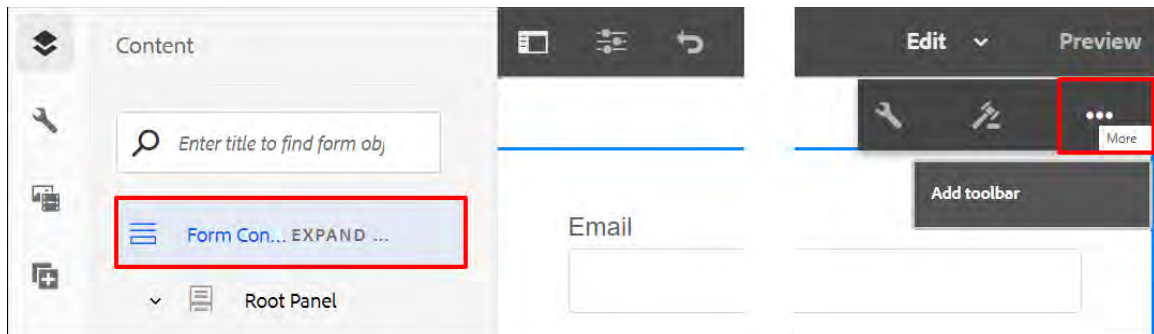
**Note:** Make sure you select the *File Attachment* component and not the *File Attachment Listing* component (see illustration).



42. Select the *File Attachment* component on your form and click **Configure** (the wrench icon).
43. Enter **fileAttachment** for the *Name*.
44. Keep **File Attachment** as the *Title*. This should be the default.
45. Click **Done**.
46. Select the **Attachment Name** field on your form and click **Configure** (the wrench icon).
47. Notice that this is a **Required** field. All the fields that were created when we dragged the data nodes onto our form are set to be required.



48. Type **Enter filename (i.e., mydocument.pdf)** as the *Placeholder Text*. Copy this message to your clipboard.
49. Close the *Basic* panel and open the *Help Content* panel.
50. **Paste** the message into the *Short Description* and *Long Description* fields.
51. Click **Done**.
52. Click **Content** (the icon in the upper-left).
53. Select the **Form Container** (see illustration left).
54. Select **More** in the toolbar (see illustration right)
55. Select **Add toolbar**.

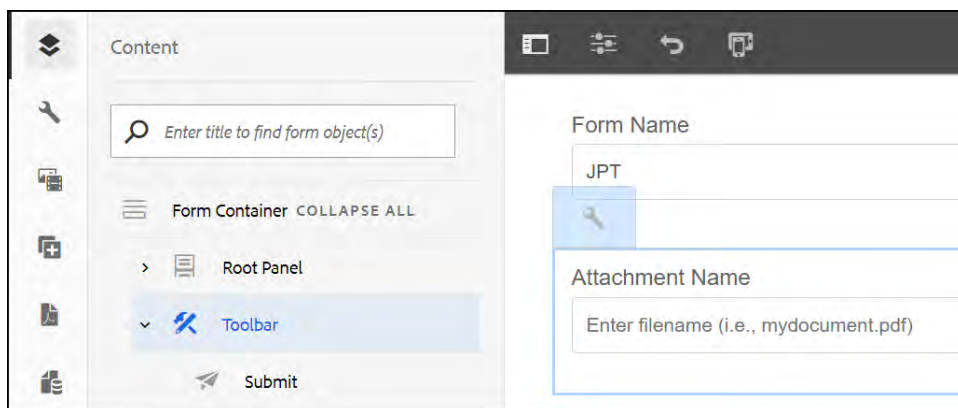


56. Select the **Toolbar** and click **+ – Add Toolbar Button**. Note: This may appear at the bottom of your screen.



57. Select the **Submit Button** from the *Adaptive Form* category.

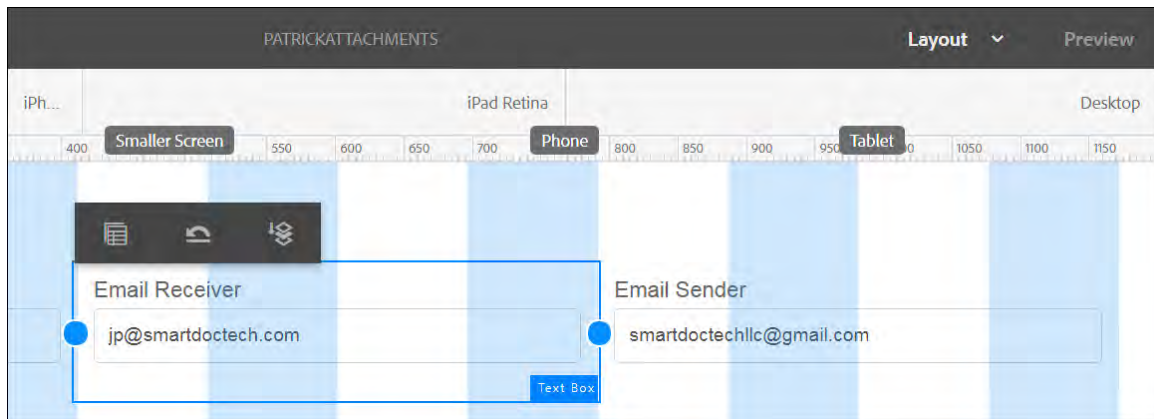
58. Your form structure should now look like this.



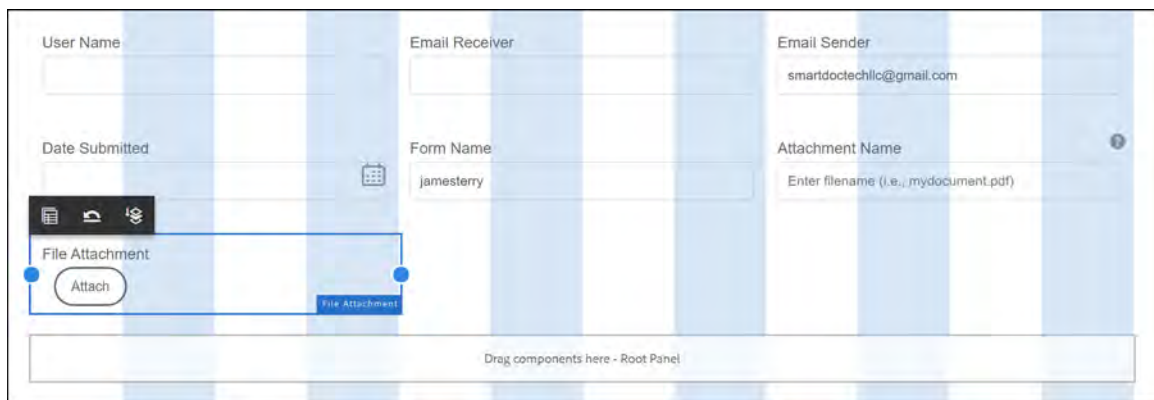
## Layout Mode

59. Switch from *Edit* mode to *Layout* mode.

60. Work to improve the layout of your form. Resize each field in Desktop mode to 4 columns so you have 3 fields across the width. The iPhone mode will default to 1 column which is fine.



**Note:** Here is a sample layout showing each field resized to 4 columns in Layout mode, so we have 3 fields across the width of the form (see illustration).



61. Click the Layout dropdown in the upper right and switch back to *Edit* mode when you are done.

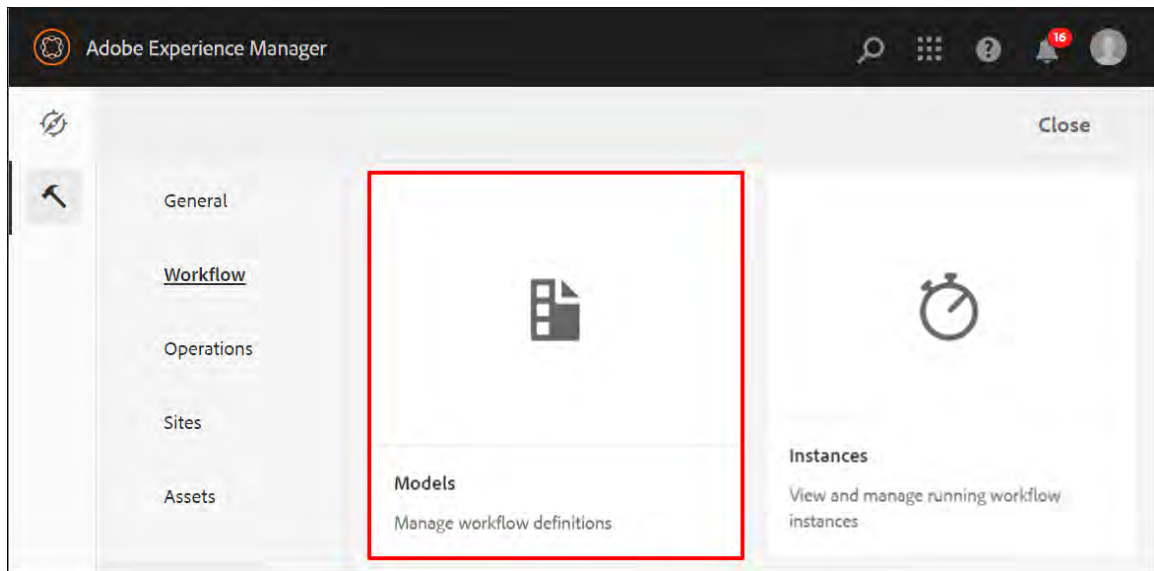
## Create the Workflow Model

Follow these steps to create the workflow model.

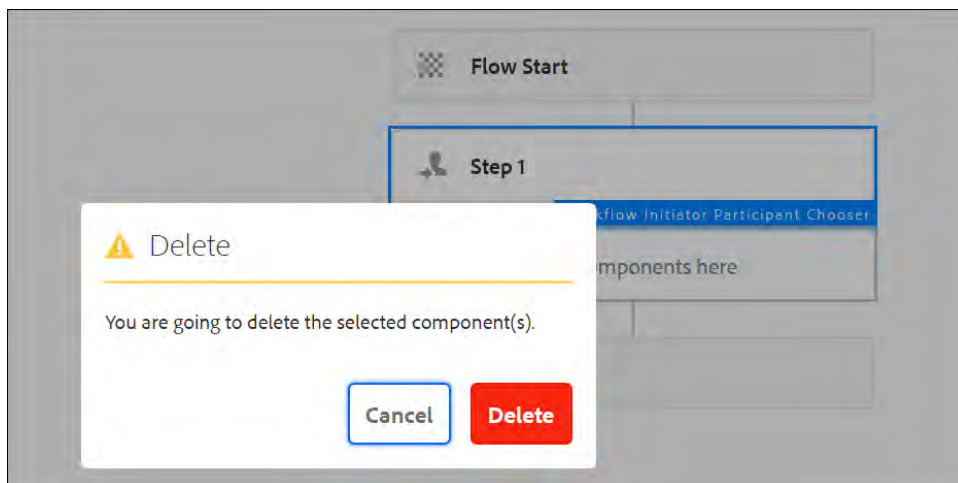
62. Open a second browser tab.
63. Navigate to the main AEM screen by entering this URL.

**<https://www.aemforms.info:8444/aem/start.html>**

64. Select **Tools – Workflow – Models**.



65. Click **Create** and select **Create Model**.
66. Enter <yourname>**Attachments** for the *Title*.
67. Enter <yourname>**Attachments** for the *Name*.
68. Click **Done**.
69. **Select** the workflow model and click **Edit** in the Action bar.
70. Select **Step 1** and click **Delete** (the trash can icon).
71. Click **Delete** again in the dialog box.



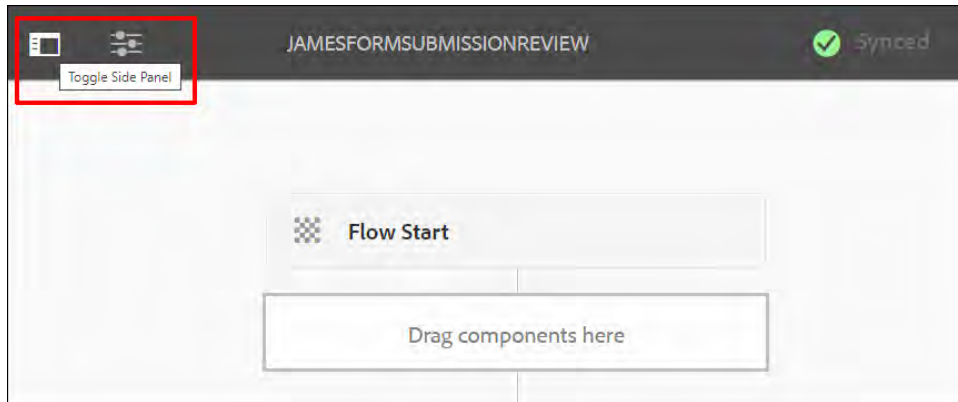
**Note:** Step 1 is a default step designed to assign a work item to the workflow initiator. We will be deleting this step in most of our workflows.

72. Click **Sync** in the upper right. This will update your runtime workflow.
73. You will see the SUCCESS message.

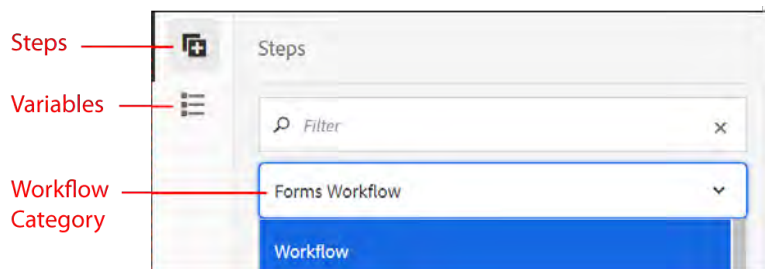
**SUCCESS** Workflow runtime model successfully written

## Create Variables

74. Click **Toggle Side Panel** (see illustration) to open the side panel if it is not already available.



75. Notice the *Steps* and *Variables* icons (see illustration).



76. Click the *Variables* icon.

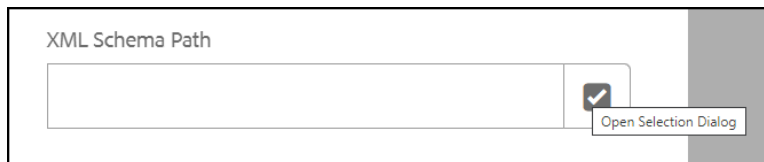
77. Click *Add Variable*.

78. Enter **submissionData** for the *Name*.

79. Click the *Type* dropdown and select **XML**.

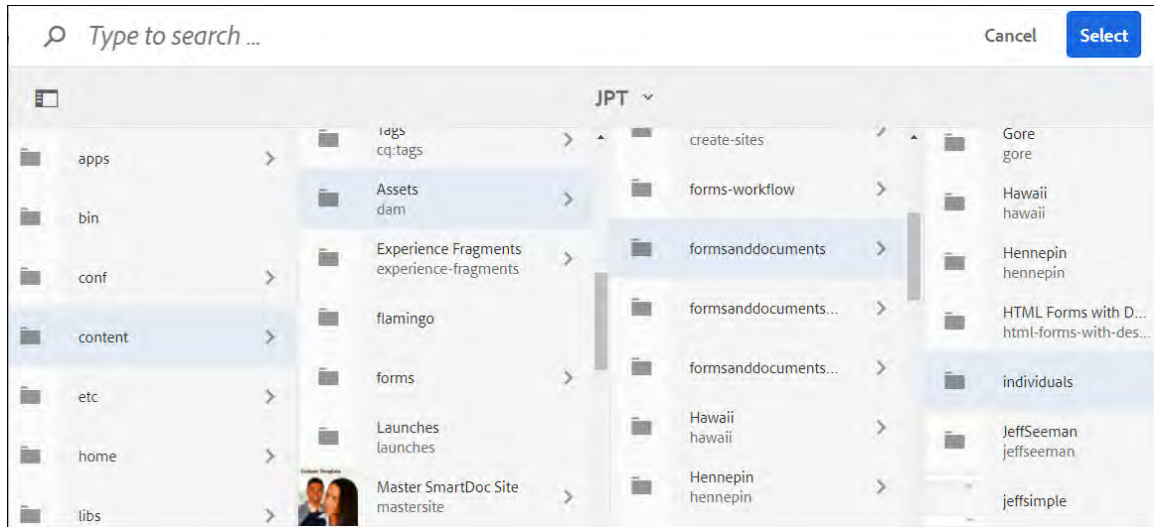
80. Enter **A workflow variable to hold the submitted form data** for the *Description*.

81. Click *Open Selection Dialog* to the right of the *XML Schema Path* field (see illustration).



82. Navigate to the **<yourname>-attachments.xsd** XML Schema file that you uploaded previously. It will be in a location similar to mine. Note: The dam folder is labelled *Assets-dam* in the visual interface.

**/content/dam/formsanddocuments/individuals/jpt/jpt-attachments.xsd**



83. Select **<yourname>-attachments.xsd** and click **Select**.

**Note.** It may look like there are 3 **formsanddocuments** folders, but there is only one. Select the first one, the other two end in ellipses which indicate that their names are longer. The two folders you don't want are named **formsanddocuments-fdm** and **formsanddocuments-themes**.

84. Click **Done** (the checkmark in the upper right corner).

85. Click **Add Variable**.

86. Enter **emailReceiver** for the **Name**.

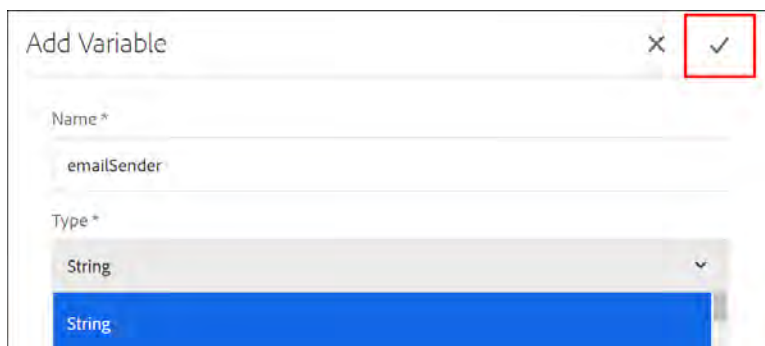
87. Click the **Type** dropdown and select **String**.

88. Click **Done**.

89. Click **Add Variable**.

90. Enter **emailSender** for the **Name**.

91. Click the **Type** dropdown and select **String**.



92. Click **Done**.

93. Click **Add Variable**.

94. Enter **userName** for the **Name**.

95. Click the *Type* dropdown and select **String**.
96. Enter **<yourname>** for the *Default Value* (see illustration).

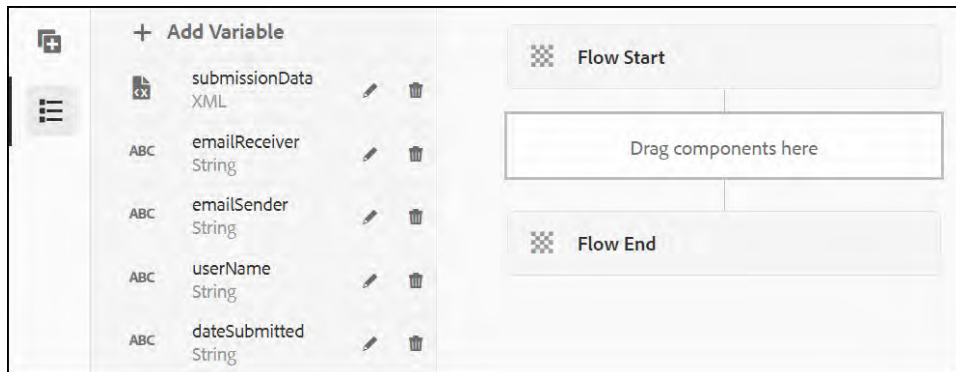


The 'Add Variable' dialog box is shown. It has a title bar with 'Add Variable' and close/confirm buttons. Inside, there are three fields: 'Name \*' with the text 'userName', 'Type \*' with a dropdown menu showing 'String', and 'Default Value' with the text 'JPT'.

97. Click **Done**.
98. Click **Add Variable**.
99. Enter **dateSubmitted** for the *Name*.
100. Click the *Type* dropdown and select **String**.

**Note:** This is a string datatype because we need to use it later in the email template and the email template requires a string datatype.

101. Click **Done**. Your workflow should now look like this (see illustration).



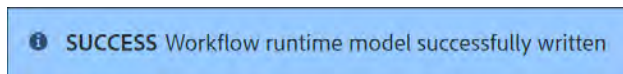
102. Click **Add Variable**.
103. Enter **attachmentName** for the *Name*.
104. Click the *Type* dropdown and select **String**.
105. Enter **defaultAttachmentName.pdf** for the *Default Value*.
106. Click **Done**.
107. Click **Add Variable**.
108. Enter **formName** for the *Name*.

109. Click the *Type* dropdown and select **String**.
110. Click **Done**.
111. Click **Add Variable**.
112. Enter **attachmentDoc** for the *Name*.
113. Click the *Type* dropdown and select **Document**.



The screenshot shows a dialog box titled "Add Variable". It has a close button (X) and a checkmark button (✓) in the top right corner. The "Name \*" field contains the text "attachmentDoc". The "Type \*" dropdown menu is open, showing "Document" as the selected option. A red box highlights the checkmark button.

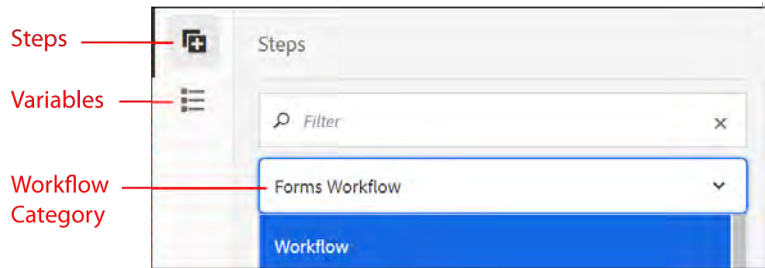
114. Click **Done**.
115. Click **Add Variable**.
116. Enter **dor** for the *Name*.
117. Click the *Type* dropdown and select **Document**.
118. Click **Done**.
119. Click **Add Variable**.
120. Enter **attachment** for the *Name*.
121. Click the *Type* dropdown and select **Boolean**.
122. Select **false** for the *Default Value*.
123. Click **Done** and **Sync**. This will create the runtime model.
124. You will see the SUCCESS message.



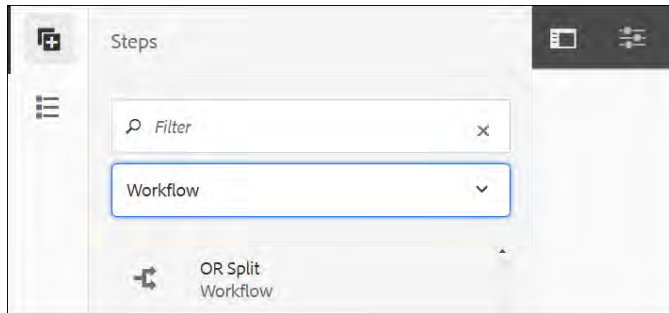
## Set Variables

Follow these steps to set your workflow variables.

125. Switch from *Variables* to *Steps* by clicking the **Steps** icon in the upper left.



126. Click the dropdown filter and select **Workflow** (see illustration) to view the *Workflow* steps.



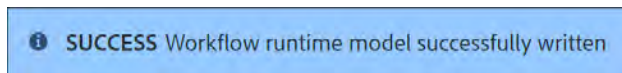
**Note:** The *Goto Step* is part of the *Workflow* category. You can also select **All** to view all the workflow steps.

127. Drag and drop the **Goto Step** from the Side Panel to your model.

128. Drag and drop the **Set Variable** step from the Side Panel to your model and place it below the *Goto Step*.

129. Click **Sync**. This will create the runtime model.

130. You will see the SUCCESS message.



## Exercise Part 2:

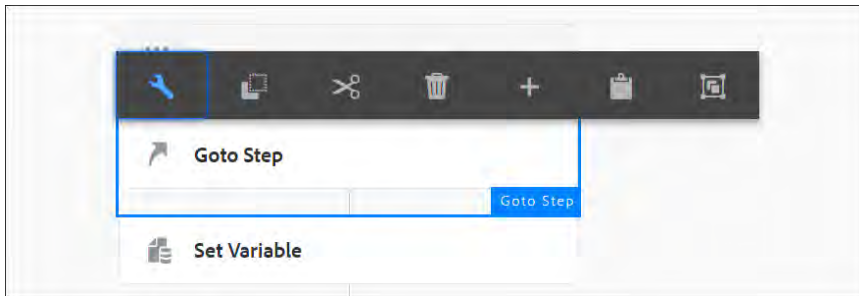
### Enhance the Workflow Model

131. Open your workflow if it is not already open by following the next 2 steps.

132. Select **Tools** (the hammer icon) and click **Workflow – Models**.

133. **Select** your workflow model and click **Edit** in the Action bar.

134. Select your **Goto Step** and click **Configure** (the wrench icon).



135. Enter **Determine Attachments** for the *Title*.
136. Enter **This step contains an ECMA script that determines whether the submission has an attachment** for the *Description*.
137. Click the **Process** tab.
138. Click the *Target step* dropdown and select **Set Variable**.
139. Click the *Routing Expression* dropdown and select **ECMA Script**.
140. Open Windows Explorer and navigate to your Student Files.
141. Open the **Determine Attachments 2025.txt** file from your Student Files in Notepad++ or a similar Text Editor.

```

1  /**
2   * Goto Step ECMA script
3   * - Only writes 'attachmentDoc' & 'attachmentName' if a file is found
4   * - Writes 'attachment' as a plain JS boolean (for our OR Split)
5   */
6  function check() {
7      var payloadPath = workflowData.getPayload().toString();
8      var metaData    = workflowData.getMetaDataMap();
9      var session     = workflowSession.getSession(); // javax.jcr.Session
10     var payloadItem = session.getItem(payloadPath); // JCR Item (could be Node or Property)
11     var payloadNode = payloadItem;                // here the path points to a Node;
12

```

142. Copy the entire script and paste it into the *Script* text field on the *Process* tab.
143. Your settings should look like this when you are done (*see illustration*).

Common Process

Target step

Set Variable

Routing Expression

ECMA Script

Script

```
/**
 * Goto Step ECMA script
 * - Only writes 'attachmentDoc' & 'attachmentName' if a file is found
 * - Writes 'attachment' as a plain JS boolean (for our OR Split)
 */
function check() {
```

144. If everything looks good, click **Done**.

145. Select your **Set Variable** step and click **Configure** (the wrench icon).

146. Change the *Title* to **Set Variables** to indicate the step will map multiple variables.

147. Select the **Mapping** tab to configure the variable mappings.

148. Click **Add Mapping** to create a variable mapping.

Set Variable

Common Mapping

Add Mapping

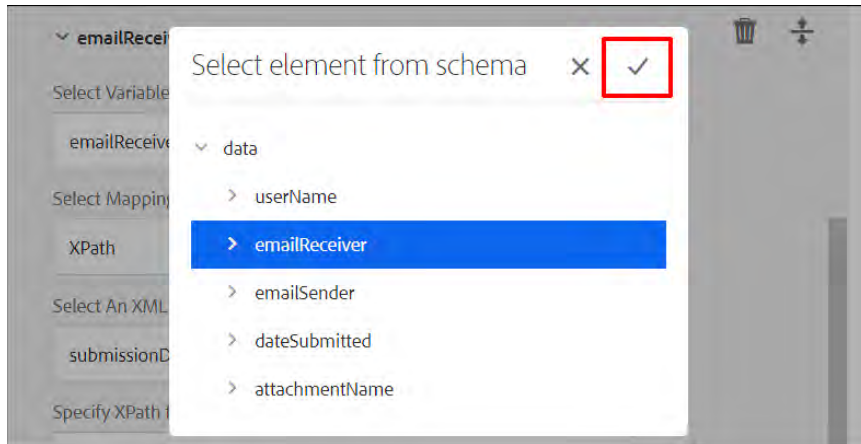
149. Expand the **Map Variable** panel.

150. Click the *Select Variable* dropdown and select **emailReceiver**.

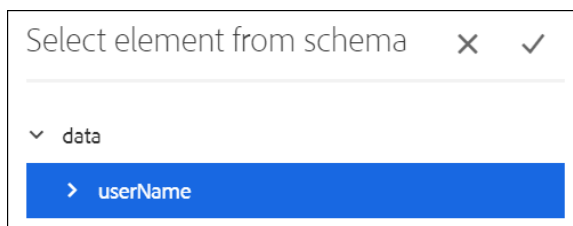
151. Click the *Select Mapping Mode* dropdown and select **XPath**.

152. Click the *Select An XML Type Variable* dropdown and select **submissionData**.

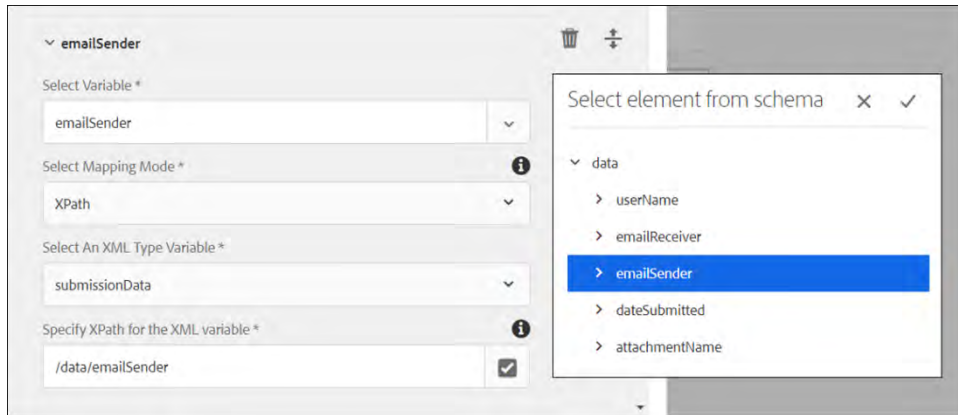
153. Click the checkmark to the right of the XPath field and select **emailReceiver** (see illustration).



154. Click **Done** (the checkmark outlined in red above), and you will see your XPath expression set to **/data/emailReceiver**.
155. Click **Add Mapping** and expand the **Map Variable** panel. Note: You may need to scroll down.
156. Click the *Select Variable* dropdown and select **userName**.
157. Click the *Select Mapping Mode* dropdown and select **XPath**.
158. Click the *Select An XML Type Variable* dropdown and select **submissionData**.
159. Click the checkmark to the right of the XPath field and select **userName** (see illustration).



160. Click **Done**.
161. Click **Add Mapping** and expand the **Map Variable** panel.
162. Click the *Select Variable* dropdown and select **emailSender**.
163. Click the *Select Mapping Mode* dropdown and select **XPath**.
164. Click the *Select An XML Type Variable* dropdown and select **submissionData**.
165. Click the checkmark to the right of the XPath field and select **emailSender** (see illustration).



166. Click **Done**.

167. Click **Add Mapping** and expand the **Map Variable** panel.

168. Click the *Select Variable* dropdown and select **formName**.

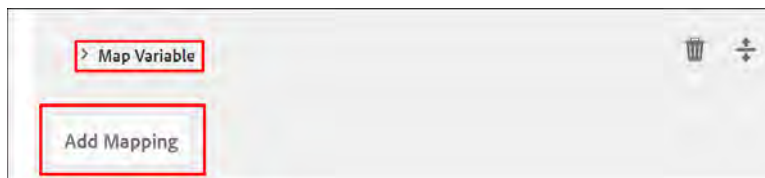
169. Click the *Select Mapping Mode* dropdown and select **XPath**.

170. Click the *Select An XML Type Variable* dropdown and select **submissionData**.

171. Click the checkmark to the right of the XPath field and select **formName**.

172. Click **Done**.

173. Click **Add Mapping** and expand the **Map Variable** panel.



174. Click the *Select Variable* dropdown and select **dateSubmitted**.

175. Click the *Select Mapping Mode* dropdown and select **XPath**.

176. Click the *Select An XML Type Variable* dropdown and select **submissionData**.

177. Click the checkmark to the right of the XPath field and select **dateSubmitted**.

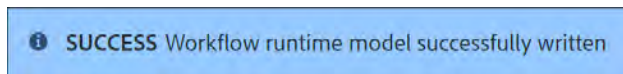
178. Click **Done**.

179. Click **Done** on top of the *Set Variable* panel (see illustration) to save your variable mappings.



180. Click **Sync**.

181. You will see the SUCCESS message.

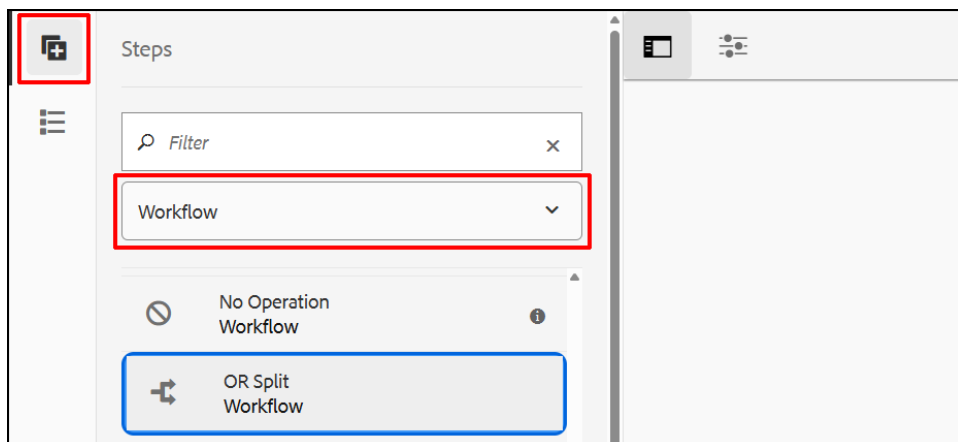


## The OR Split

182. Click **Steps** on the left to switch to the Workflow steps (*see illustration*).

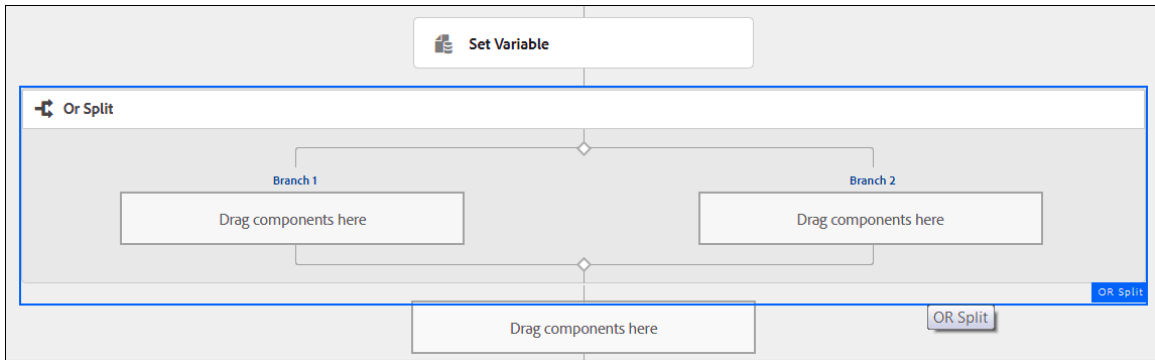
183. Click the dropdown filter and select **Workflow** (*see illustration*) to view the *Workflow* steps.

184. Scroll down and locate the **OR Split**.



185. Drag and drop an **OR Split** onto the drop zone (*Drag components here*) on your workflow model.

186. Your model should look like this when you are done (*see illustration*).



187. Select the **OR Split** and click **Configure** (the wrench icon).

188. Enter **A Split that uses an Expression** for the *Split Name*.

189. Select the **Branches** tab and expand **Branch 1**.

190. Click **Rename Branch** and enter **Attachment** for the name.

191. Select **Default Route**.

**Note:** Only 1 branch can be the default route.

192. Click the *Select Routing Expression* dropdown and select **Rule Definition**.

193. Select **Click to Add Expression**.

194. You will see the Expression Editor.

195. Select **Workflow Variables** (see illustration) to show your workflow variables on the left.

196. Drag and drop the **attachment** variable to the first drop zone on the right. The drop zone is labeled *Drop object or select here*.

197. Click the *Select Operator* dropdown and select **IS TRUE**.

198. Your expression should now look like this.

Workflow Variables

FOLLOW BRANCH WHEN

attachment IS TRUE

+ Add Condition Delete

199. Click **Done**.

200. Scroll down and expand **Branch 2**.

201. Click **Rename Branch** and enter **No Attachment** for the name.

202. Click the *Select Routing Expression* dropdown and select **Rule Definition**.

203. Select **Click to Add Expression**.

204. Drag and drop the **attachment** variable to the drop zone on the right.

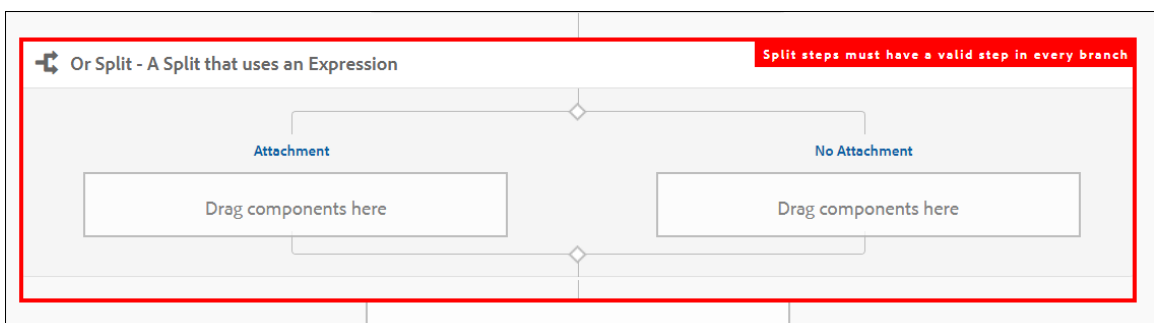
205. Click the *Select Operator* dropdown and select **IS FALSE**.

206. Click **Done**.

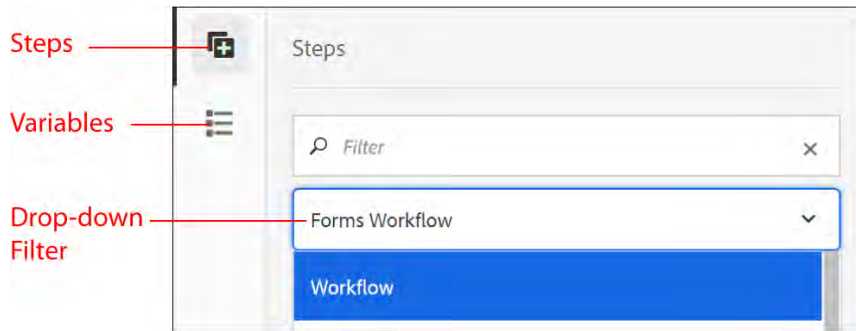
207. Click **Done** on the top of the *OR Split* panel.

**Note:** Logically, we don't need to double our expressions. The first one will work for both cases. If the boolean is true, attachment will be followed. Otherwise, No Attachment will be followed. The doubling of the expressions here is simply for exercise purposes.

208. Click **Sync** to synchronize your changes with the Runtime Model. You will notice this error. You need to have a valid step in each branch of the *Or Split*.



209. Click the in the dropdown filter on the side panel and select **Forms Workflow** (see illustration) to view the *Forms Workflow* steps.

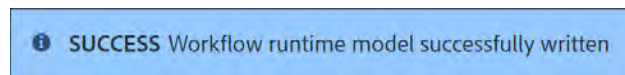


210. Scroll down to the **Send Email** step.

211. Drag and drop the **Send Email** step to each of your branches.

212. You can now click **Sync** to synchronize your changes with the Runtime Model.

213. You will see the SUCCESS message.



## The Attachment branch

214. Select the **Send Email** step on the *Attachment* branch and click **Configure** (the wrench icon).

215. Enter **Send Email with attachment, dor, and form data** for the *Title*.

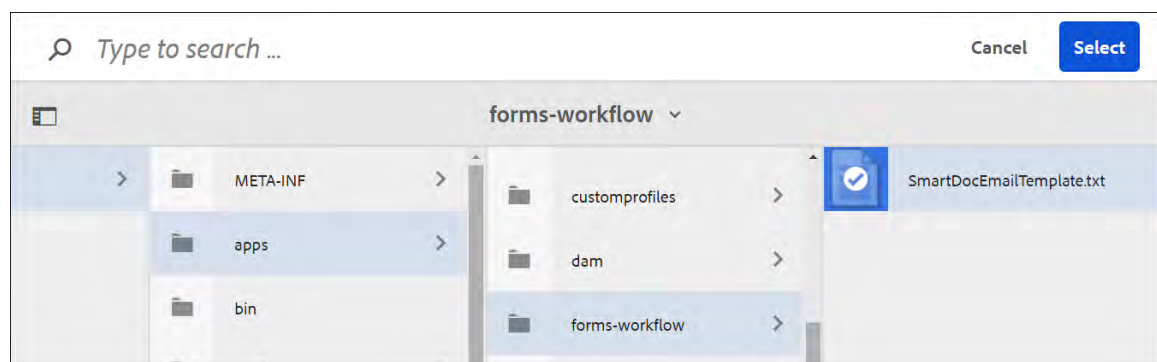
216. Select the *Email Details* tab and notice the *Email Subject* is set to **Literal**.

217. Enter **Send Email with attachment, dor, and form data** for the *Email Subject*.

218. Click **Open Selection Dialog** to the right of the *HTML Email Template* field.

219. Select the **SmartDocEmailTemplate** located here (see illustration).

**/apps/forms-workflow/SmartDocEmailTemplate.txt**



**Note:** If you are not using a SmartDoc Sandbox Server, you can use this template:  
**/libs/fd/dashboard/templates/email/htmlEmailTemplate.txt**

220. Click **Select**.

221. Click the *workitem\_username* dropdown and select **Variable**.

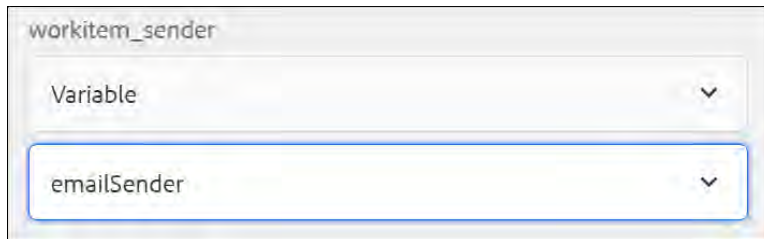
222. Click the next dropdown and select **userName** for the variable.

223. Click the *time* dropdown and select **Variable**.

224. Click the next dropdown and select **dateSubmitted** for the variable.

225. Click the *workitem\_sender* dropdown and select **Variable**.

226. Click the next dropdown and select **emailSender** for the variable.

A screenshot of a dropdown menu titled 'workitem\_sender'. The menu is open, showing a list of options. The first option is 'Variable', and the second option is 'emailSender'. The 'emailSender' option is highlighted with a blue border.

227. Scroll up, select the *Sender Details* tab, and notice the *Sender's Email Address* is set to **Literal**.

228. Enter **smartdoctechllc@gmail.com** if you are using a SmartDoc Sandbox Server.

**Note:** *The SmartDoc Sandbox Servers are configured for SMTP mail.*

229. Select the *Recipient Details* tab.

230. Click the *Recipient's Email Address* dropdown and select **Variable**.

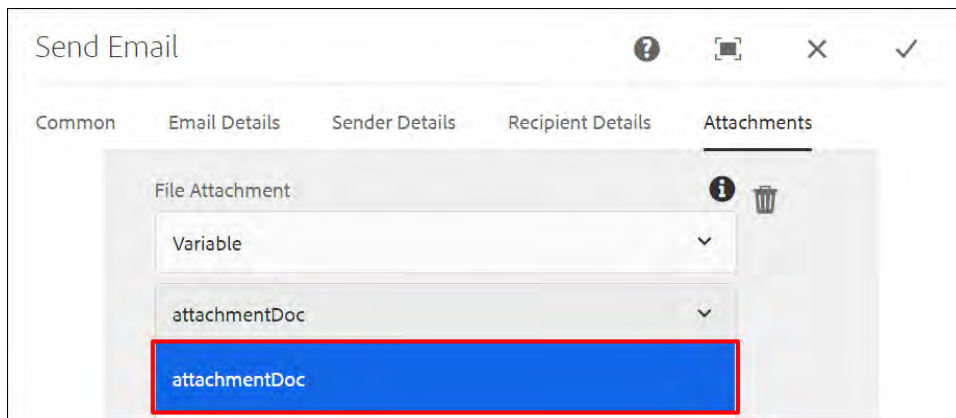
231. Click the dropdown and select **emailReceiver**.

232. Select the *Attachments* tab.

233. Click **Add**.

234. Click the *File Attachment* dropdown and select **Variable**.

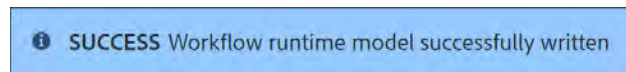
235. Click the dropdown and select **attachmentDoc** (see illustration).

A screenshot of the 'Send Email' dialog box, specifically the 'Attachments' tab. The dialog has tabs for 'Common', 'Email Details', 'Sender Details', 'Recipient Details', and 'Attachments'. The 'Attachments' tab is active. Under the 'File Attachment' section, there is a dropdown menu with 'Variable' selected. Below this, there is another dropdown menu with 'attachmentDoc' selected. A red rectangle highlights the 'attachmentDoc' option in the second dropdown menu.

236. Click the *File Name* dropdown and select **Variable**.

237. Click the dropdown and select **attachmentName**.
238. Click **Add** to add a second attachment.
239. Click the *File Attachment* dropdown and select **Variable**.
240. Click the dropdown and select **dor**.
241. Notice the *File Name* dropdown is set to **Literal**.
242. Enter **dor.pdf** for the *File Name*.
243. Click **Add** to add a third attachment.
244. Click the *File Attachment* dropdown and select **Variable**.
245. Click the dropdown and select **submissionData**.
246. Notice the *File Name* dropdown is set to **Literal**.
247. Enter **submittedData.xml** for the *File Name*.
248. Click **Done** and **Sync**.

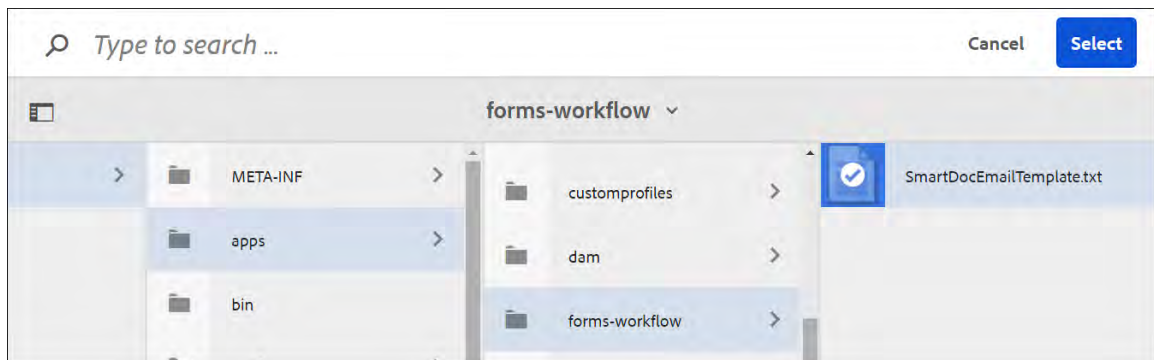
You will see the SUCCESS message.



## The No Attachment branch

249. Select the **Send Email** step on the *No Attachment* branch and click **Configure** (the wrench icon).
250. Enter **Send Email with dor and form data** for the *Title*.
251. Select the *Email Details* tab.
252. Notice the *Email Subject* is set to *Literal*.
253. Enter **The DOR and Form Data are attached** for the *Email Subject*.
254. Click **Open Selection Dialog** to the right of the *HTML Email Template* field.
255. Select the **SmartDocEmailTemplate** located here.

**/apps/forms-workflow/SmartDocEmailTemplate.txt**



**Note:** If you are not using a SmartDoc Sandbox Server, you can use this template:  
*/libs/fd/dashboard/templates/email/htmlEmailTemplate.txt*

256. Click **Select**.

257. Click the *workitem\_username* dropdown and select **Variable**.

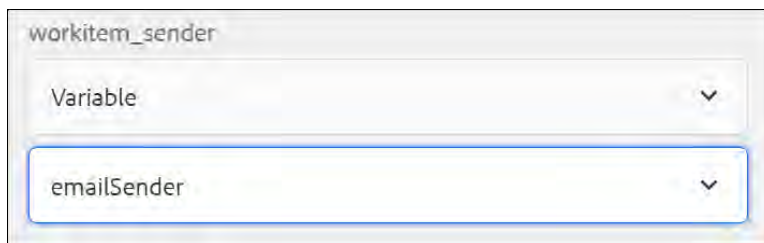
258. Click the dropdown and select **userName** for the variable.

259. Click the *time* dropdown and select **Variable**.

260. Click the dropdown and select **dateSubmitted** for the variable.

261. Click the *workitem\_sender* dropdown and select **Variable**.

262. Click the dropdown and select **emailSender** for the variable.

A screenshot of a dropdown menu titled 'workitem\_sender'. The menu is open, showing a list of options. The first option is 'Variable', which is highlighted. Below it, the option 'emailSender' is visible. The dropdown has a blue border and a small downward arrow on the right side.

263. Scroll up, select the *Sender Details* tab, and notice the *Sender's Email Address* is set to **Literal**.

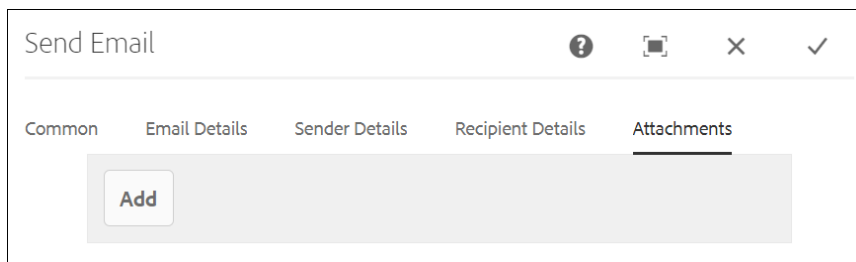
264. Enter **smartdoctechllc@gmail.com** if you are using a SmartDoc Sandbox Server.

265. Select the *Recipient Details* tab.

266. Click the *Recipient's Email Address* dropdown and select **Variable**.

267. Click the dropdown and select **emailReceiver**.

268. Select the *Attachments* tab (see illustration).

A screenshot of the 'Send Email' dialog box. The dialog has a title bar with a question mark, a close button, and a checkmark. Below the title bar, there are five tabs: 'Common', 'Email Details', 'Sender Details', 'Recipient Details', and 'Attachments'. The 'Attachments' tab is selected and highlighted. Below the tabs, there is a large grey area with an 'Add' button in the top left corner.

269. Click **Add**.

270. Click the *File Attachment* dropdown and select **Variable**.

271. Click the dropdown and select **dor**.

272. Notice the *File Name* dropdown is set to **Literal**.

273. Enter **dor.pdf** for the *File Name*.

274. Click **Add** to add a second attachment.

275. Click the *File Attachment* dropdown and select **Variable**.

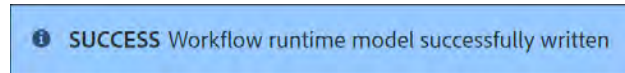
276. Click the dropdown and select **submissionData**.

277. Notice the *File Name* dropdown is set to **Literal**.

278. Enter **submissionData.xml** for the *File Name*.

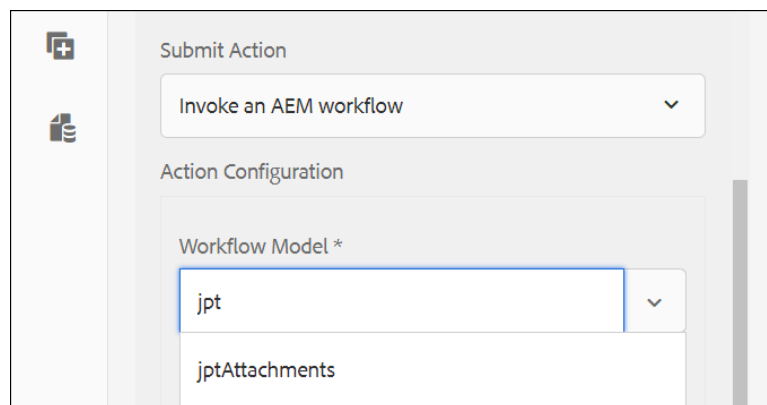
279. Click **Done** and **Sync**.

You will see the SUCCESS message.



## Configure the Form

1. Go back to the browser tab with your adaptive form.
2. Make sure it is in **Edit** mode.
3. Click **Content** and select the **Form Container**.
4. Select **Configure** (the wrench icon).
5. Close the *Basic* panel and open the **Submission** panel.
6. Click the *Submit Action* dropdown and select **Invoke an AEM workflow**.
7. Enter <yourname> in the *Workflow Model* field to locate your workflow (see illustration).
8. Select the <yourname>**Attachments** workflow (see illustration).



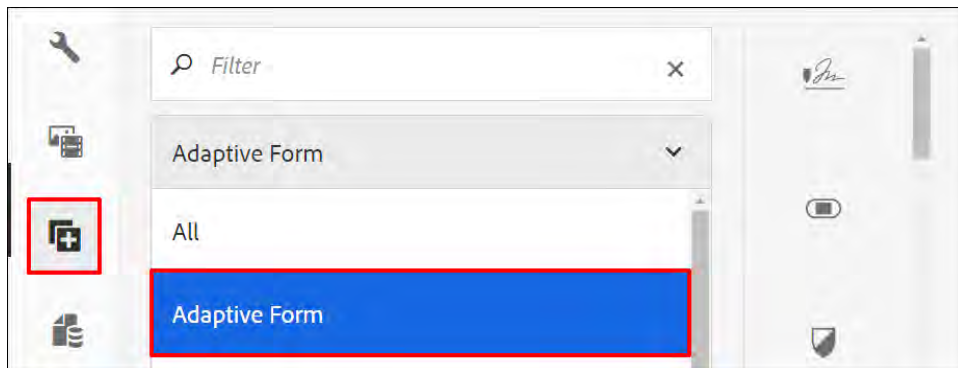
9. Click the *Store data file using* dropdown and select **Variable**.
10. Click the next dropdown and select the **submissionData** variable. This is the variable you created in your workflow model.
11. Click the *Store attachments using* dropdown and select **Relative to Payload**.
12. Enter **attachment** for the filename.
13. Click the *Store Document of Record using* dropdown and select **Variable**.

14. Click the next dropdown and select the **dor** variable. Your mapping should look like this.

The screenshot shows the SmartDoc Technologies mapping interface. On the left, a sidebar contains a tree view with 'jamesAttachments' selected. Below this, there are four sections for mapping data: 'Store data file using' (set to 'Variable' with 'submissionData' selected), 'Store attachments using' (set to 'Relative to Payload' with 'attachment' selected), and 'Store Document of Record using' (set to 'Variable' with 'dor' selected). The right panel displays the form fields: 'Date Submitted' with a calendar icon, 'Form Name' with the value 'jamesterry', 'File Attachment' with an 'Attach' button, and 'Check Box' with 'Item 1'. At the bottom of the right panel is a large area labeled 'Drag components here - Root Panel'.

15. Click **Done**.

16. Click **Components** (see illustration) and select **Adaptive Form** to view the Adaptive Form components.



17. Drag and drop a **Check Box** to the bottom of your adaptive form.

18. Select the Check Box and click **Configure** (the wrench icon).

19. Enter **checkbox** for the *Name*.

20. Select **Hide Title**.

21. Enter **0=Include Attachment** under *Items*.

22. Click **Done**.

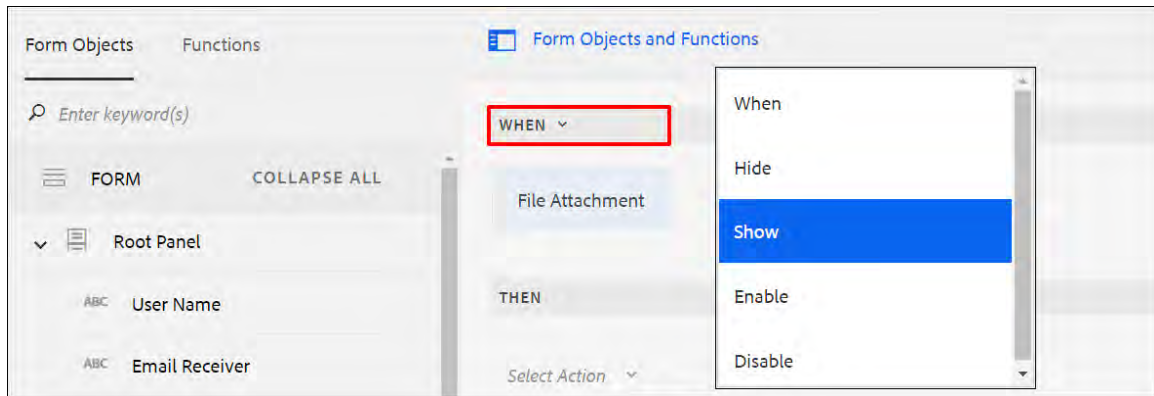
**Note:** If you seeing ghosting while working on your adaptive form, click **Reload** or **Refresh** in your browser.

23. Select the **File Attachment** component and click **Edit Rules** (the gavel icon).

24. Click **Create**.

25. If the *Form Objects and Functions* panel is not already open, click **Form Objects and Functions**.

26. Change the condition menu from **WHEN** to **Show**.



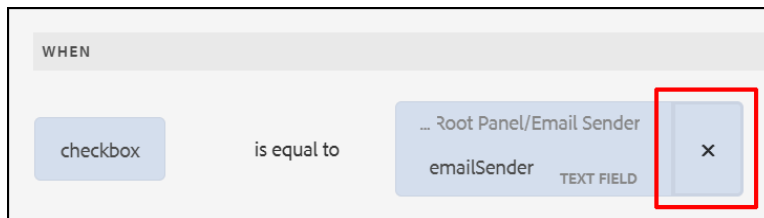
27. Click **Add Condition**.

28. Drag and drop the **Check Box** form object to the first drop zone in the WHEN condition.

29. Click the *Select Operator* dropdown and select **is equal to**.

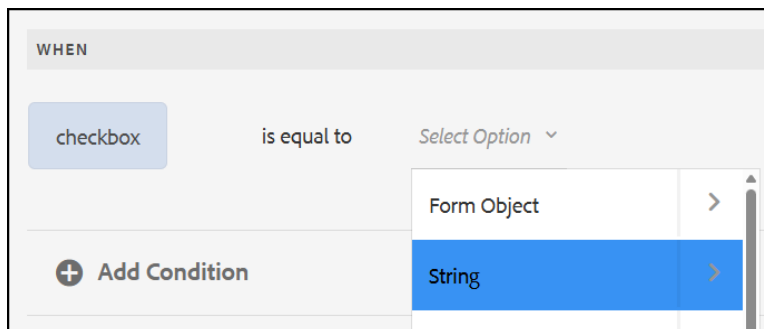
30. Click the *Drop object or select here* button and select **emailSender**.

31. Click emailSender button and then the **x** to delete this choice (*see illustration*).

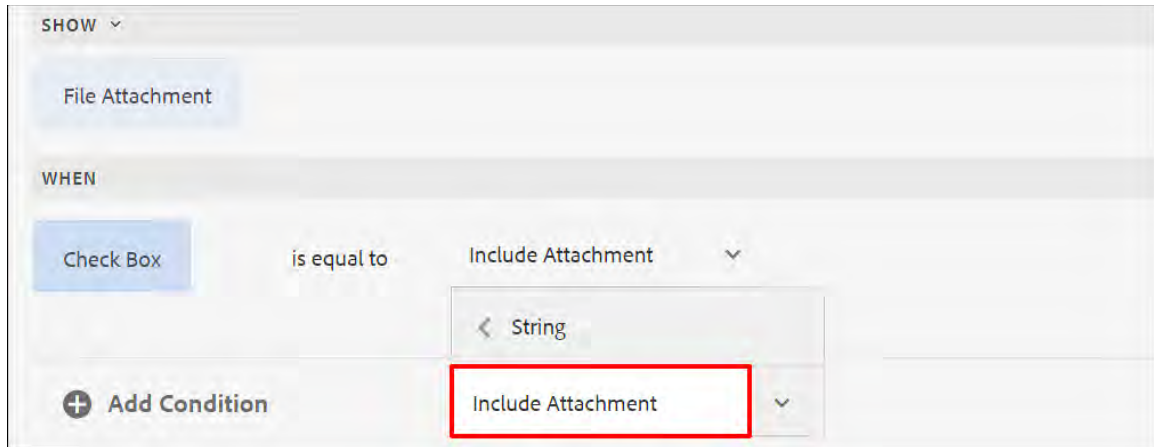


32. You should now see the *Select Option* dropdown (*see illustration*).

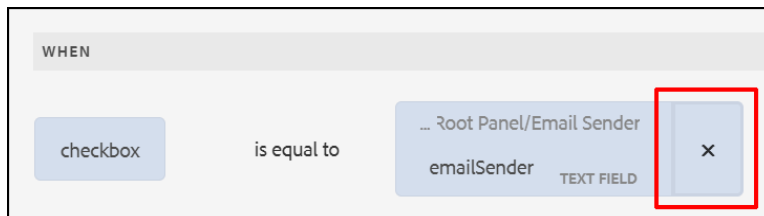
33. Click the *Select Option* dropdown and select **String**.



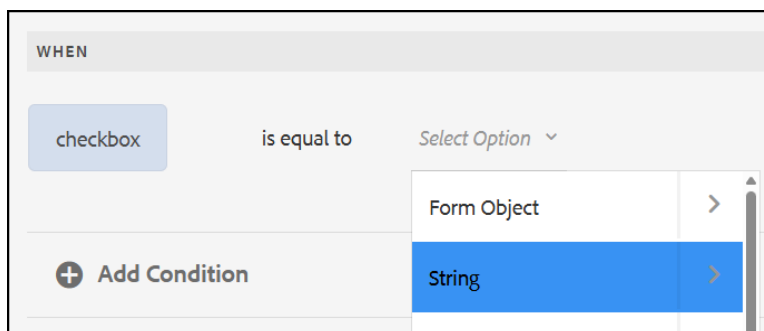
34. Click the *Enter a String* dropdown and select **Include Attachment** (*see illustration*).



35. Click **Done** and **Close**.
36. Select the **Attachment Name** field and click **Edit Rules** (the gavel icon).
37. Click **Create**.
38. Change the condition menu from **WHEN** to **Show**.
39. Click **Add Condition**.
40. Drag and drop the **Check Box** form object to the first drop zone in the WHEN condition.
41. Click the *Select Operator* dropdown and select **is equal to**.
42. Click the *Drop object or select here* button and select **emailSender**.
43. Click emailSender button and then the **x** to delete this choice (see illustration).



44. You should now see the *Select Option* dropdown (see illustration).
45. Click the *Select Option* dropdown and select **String**.



46. Click the *Enter a String* dropdown and select **Include Attachment**.

47. Click **Done** and **Close**.
48. Select **Content** to view your form's hierarchy.
49. Move your **Check Box** up in the Hierarchy so it appears before the Attachment Name field.

50. Switch from *Edit* to *Layout* mode.
51. Resize the **Include Attachment** field to 4 columns.
52. Select the **Attachment Name** field and select **Float to a new line** (see illustration).

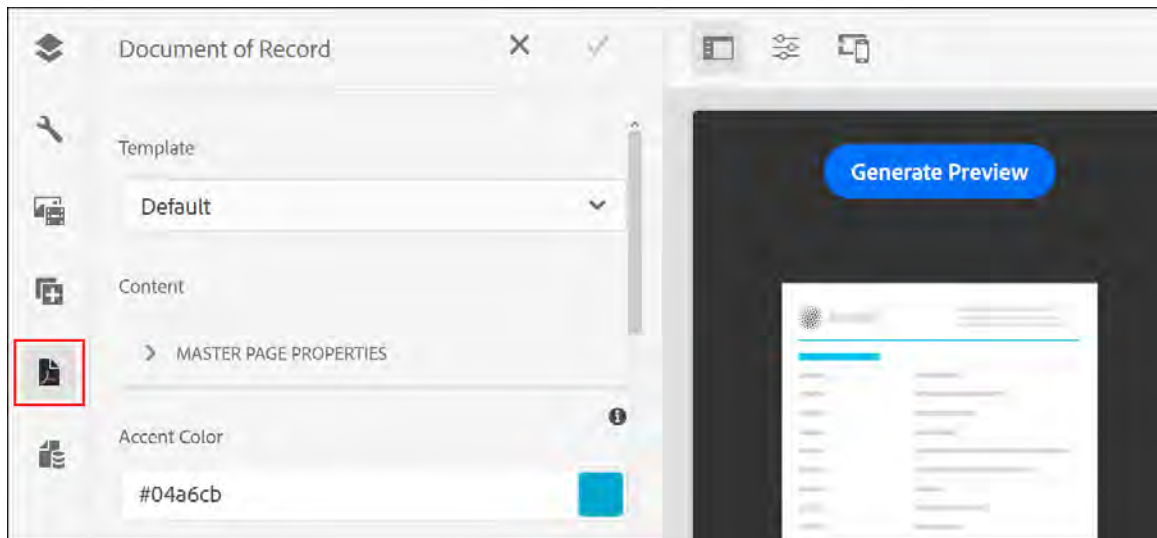
53. Your layout should now look like this (see illustration).

54. Switch back to **Edit** mode.
55. Select the *User Name* field and click **Configure** (the wrench icon).
56. Enter <your first name> as the *Default Value*.
57. Click **Done**.
58. Select the *Email Receiver* field and click **Configure** (the wrench icon).
59. Enter <your email address> as the *Default Value*.

60. Click **Done**.

## Configure the DoR template

61. With the side panel open, click the **Document of Record** icon (see illustration).

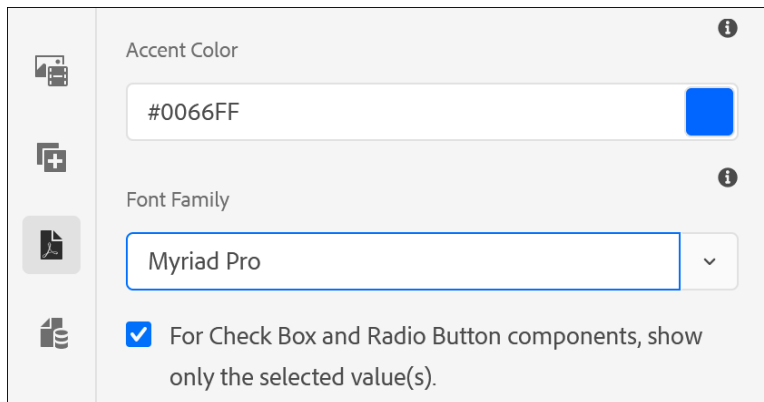


**Note:** If this icon does not appear, make sure you have the Document of Record Template Configuration property set to Generate Document of Record.

62. Open the *Basic* panel.

63. Enter **#0066FF** for the Accent Color (see illustration).

64. Click the *Font Family* dropdown and select **Myriad Pro** for the Font Family (see illustration).



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

66. Close the *Basic* panel and open the *Master Page Properties* panel.

67. Click **browse** on the *Logo Image* panel and navigate to your Student Files.

68. Select the **smartdocLogo.png** image and click **Open**.

69. Click **Open**.

70. Click **Done** (the blue checkmark).
71. Click the *Form Title* dropdown and select **Use Custom**.
72. Enter **SmartDoc Technologies** for the *Form Title* (see illustration).



Form Title

Use Custom ▼

SmartDoc Technologies

73. Click **Done** (the blue checkmark).
74. Scroll down and click the *Header Text* dropdown and select **Use Custom**.
75. Enter **www.aemforms.training** for the *Header Text*.
76. Click **Done** (the blue checkmark).
77. Close the *Master Page Properties* panel.
78. Click **Generate Preview**.

Your custom header should now look like this.



SmartDoc TECHNOLOGIES™

SmartDoc Technologies  
www.aemforms.training

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User Name JPT

Email Receiver jp@smartdoctech.com

Email Sender smartdoctechology@gmail.com

**Note:** Depending on how your browser is configured, the PDF may not display in the browser. Instead, the PDF may be automatically downloaded by the browser.

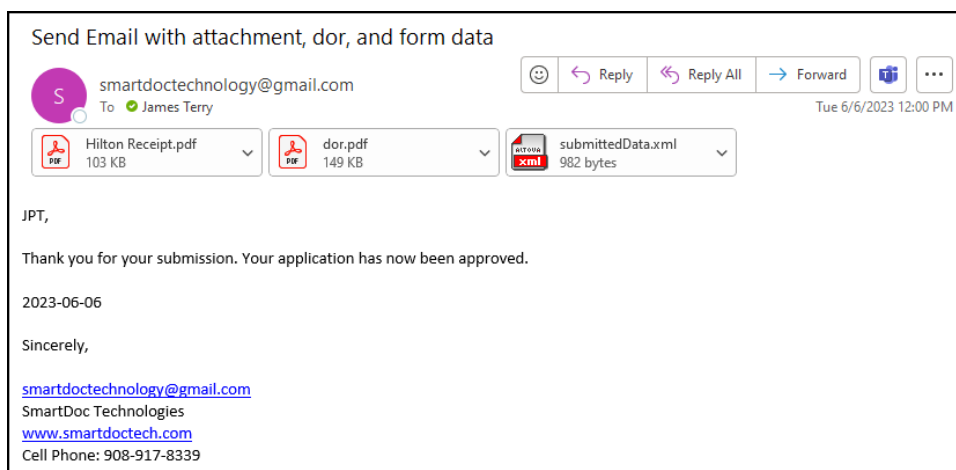
## Test the Form and Workflow

79. Select **Preview** to test your form and workflow.
80. Click **Include Attachment**. Notice how the attachment fields become visible.
81. Enter **ThisNameIsNotUsed.pdf** for the *Attachment Name*.
82. Click the **Attach** button under the *File Attachment* label.
83. Locate the **Hilton Receipt.pdf** in your Student Files and click **Open**. Your form should now look like this.

|                                   |                                       |                                                        |
|-----------------------------------|---------------------------------------|--------------------------------------------------------|
| User Name<br>James                | Email Receiver<br>jp@smartdoctech.com | Email Sender<br>smartdoctechllc@gmail.com              |
| Date Submitted<br>09/08/2021      | Form Name<br>jpterry                  | <input checked="" type="checkbox"/> Include Attachment |
| Attachment Name<br>myFileName.pdf | File Attachment<br><div>Attach</div>  |                                                        |
| <div>Submit</div>                 | <a href="#">Hilton Receipt.pdf</a> X  |                                                        |

84. Click **Submit**.

You should receive a *Thank you for submitting the form* message. You should also receive an email message with attached documents (*see illustration*).



85. Test your form submission again but this time do NOT select *Include Attachment*. This test will test the *No Attachment* branch.

86. The *No Attachment* branch will only send 2 attachments.

**Note:** We can over write the *attachmentName* variable with the value entered by the form filler in the *Attachment Name* form field (*see illustration*) by creating an XPath mapping like we did with other variables. When we do this in the *Set Variable* step, it will over write the value set in the *ECMA* script because the *Set Variable* step comes after the *ECMA* script is run in our workflow design.

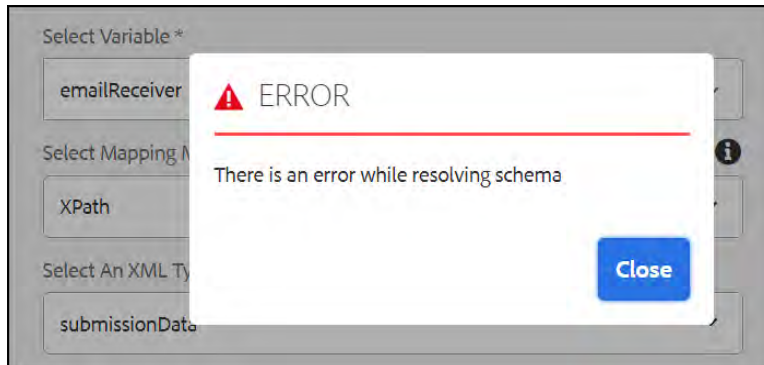
|                                                           |                                                 |
|-----------------------------------------------------------|-------------------------------------------------|
| Attachment Name<br><div>nameEnteredByFormFiller.pdf</div> | File Attachment<br><div>Attach</div>            |
| <div>Submit</div>                                         | <div>Enter filename (i.e. mydocument.pdf)</div> |

## Trouble-Shooting

This section details some common errors.

### ERROR There is an error while resolving schema

You may see this error while mapping your variables in the Set Variables step. This is an indication that something is wrong with the schema used in the submissionData variable.



Follow these steps to correct the error.

1. Click *Close* on the message and *Done* on the *Set Variable* step to return to the main Workflow screen.
2. Select the *Variables* icon.
3. Click the pencil icon to edit the *submissionData* variable.
4. Review the XML Schema path to make sure this is pointing to a valid XML Schema. Some students inadvertently point this to their adaptive form.

### Workflow not triggered on AF submission

This error occurs when we try to submit to an AEM workflow from an adaptive form on a Publish Server. Unless the Publish Server is properly configured, we will either see this error message or no error message.

```
{"unresolvedMessage":"Workflow not triggered on AF submission","code":"AEM-FD-011-004"}
```

In both cases, our problem will likely be solved by following these steps.

1. Sign in to the Publish Server as an Administrator.

<http://localhost:4503/libs/granite/core/content/login.html>

2. Open Web Console Configuration.

<http://localhost:4503/system/console/configMgr>

280. Search for the **AEM DS Settings Service**.

281. Click **Edit the configuration values** (*the pencil icon*).

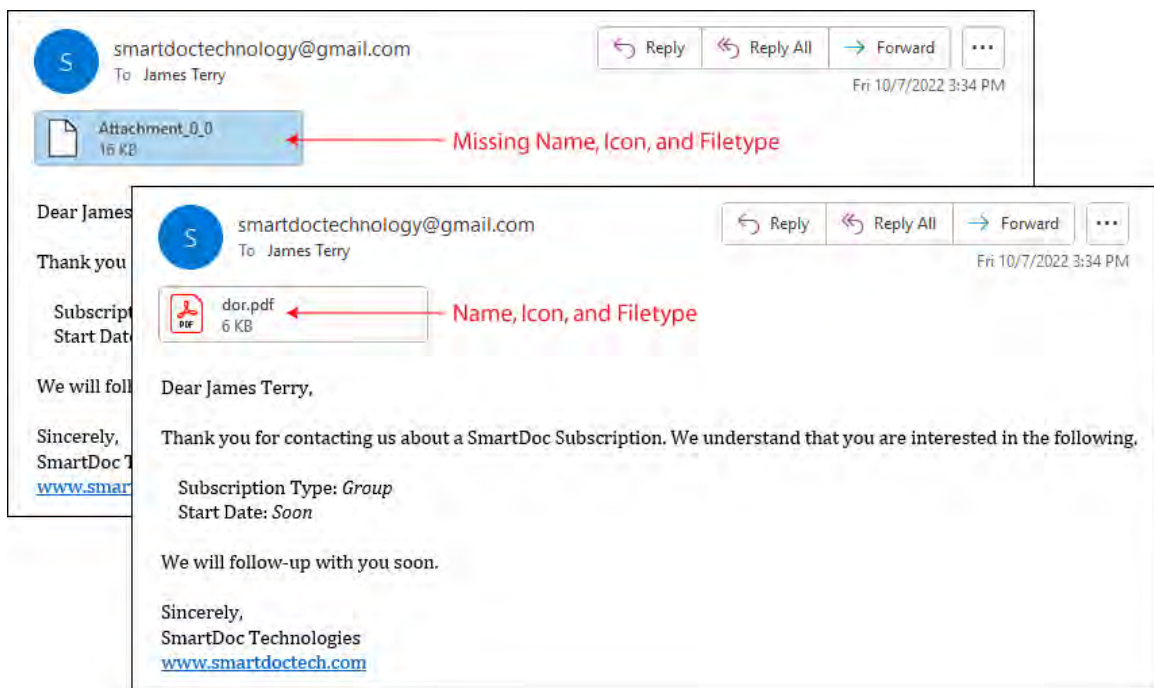
282. Check for these values. Make sure they are populated and make sure they are current with your Publish Server URL and your admin credentials.

|                             |                                                                                                                      |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------|
| Processing Server URL       | <input type="text" value="http://localhost:8083/"/>                                                                  |
|                             | The URL of the Processing server (e.g. http://<somehost>:4502/lc) (settings.processing.server.url)                   |
| Processing Server User Name | <input type="text" value="admin"/>                                                                                   |
|                             | The ID of the user to be used while authenticating with the Processing server. (settings.processing.server.username) |
| Processing Server Password  | <input type="password" value="....."/>                                                                               |
|                             | The password to be used while authenticating with the Processing server. (settings.processing.server.password)       |

283. Click **Save**.

## Attachments not showing Name Icon or Filetype

I documented this occurring in AEM 6.5.13, but I think I also noticed this in AEM 6.5.11 as well. The email attachments do not display the proper name, icon or filetype. Instead, the email attachment is labelled as Attachment\_0\_0 (see illustration).



This is caused by the Send Email workflow step and is solved in AEM Forms Version 6.5.14.

## PathNotFoundException

### Failure Message

com.adobe.granite.workflow.WorkflowException: org.apache.sling.api.scripting.ScriptEvaluationException: Failure running script /libs/workflow/scripts/dynamic.ecma: Wrapped javax.jcr.PathNotFoundException: attachment (NO\_SCRIPT\_NAME#5)

### Step

Set Variable

### Failure Stack

Not available

### Try

Change name from attachment.pdf to attachment.

## Cannot coerce value of document variable

### Failure Message

Error in converting variable: attachment to type: com.adobe.aemfd.docmanager.Document

### Step

Send Email with attachment and dor

### Failure Stack

Caused by: com.adobe.granite.workflow.WorkflowException: [Document Data Type Handler] Cannot coerce value of document variable: attachment to jcr value at  
com.adobe.fd.workflow.datatype.DocumentDataTypeHandler.coerceTo(DocumentDataTypeHandler.java:93)  
at com.adobe.granite.workflow.core.metadata.MetadataUtilImpl.convertToValue(MetadataUtilImpl.java:141)

### Try

You might have an empty attachment value in your payload. If so, you will get this error when you try to map the empty payload to a document variable.

## java.lang.NullPointerException

### Failure Message

Process execution resulted in an error

### Step

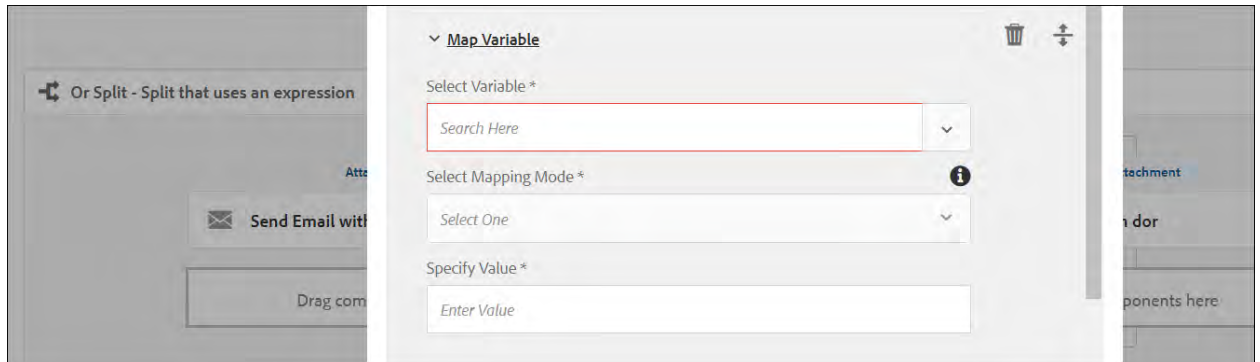
Set Variable

### Failure Stack

Caused by: com.adobe.granite.workflow.WorkflowException: java.lang.NullPointerException

### Try

Review the Set Variable step. You might have an empty mapping as shown here.



## NO\_SCRIPT\_NAME#8

### Failure Message

com.adobe.granite.workflow.WorkflowException: org.apache.sling.api.scripting.ScriptEvaluationException: Failure running script /libs/workflow/scripts/dynamic.ecma: Wrapped javax.jcr.PathNotFoundException: fileAttachment (NO\_SCRIPT\_NAME#8)

### Step

Set Variable

### Failure Stack

Caused by: com.adobe.granite.workflow.WorkflowException: org.apache.sling.api.scripting.ScriptEvaluationException: Failure running script /libs/workflow/scripts/dynamic.ecma: Wrapped javax.jcr.PathNotFoundException: **fileAttachment** (NO\_SCRIPT\_NAME#8)

### Try

Make sure the file attachment component is named **fileAttachment** and not some other name like **fileupload1584097750010**.

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