Using Application APIs

Agenda:
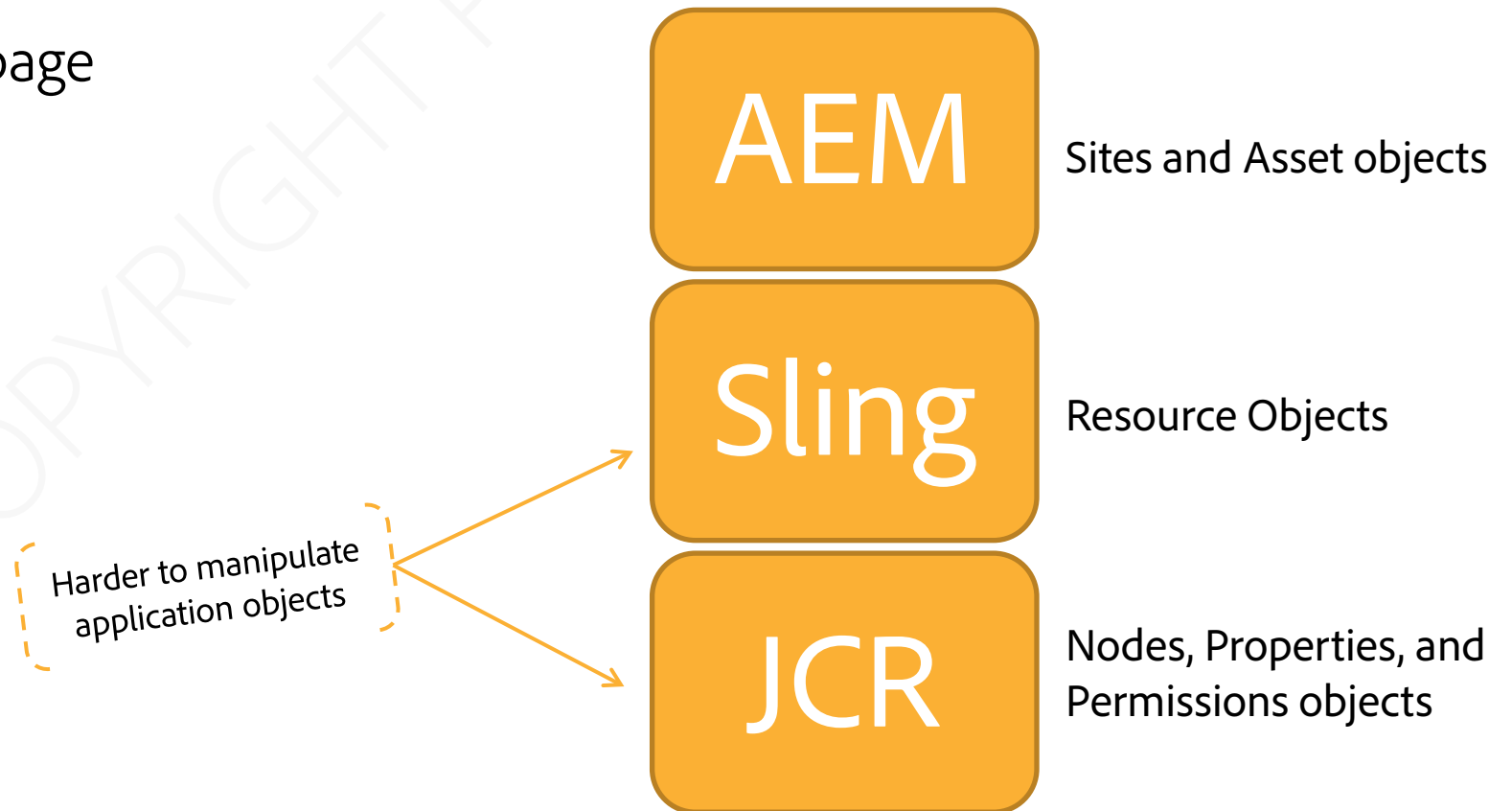
- Create an AEM page programmatically

- Import multiple pages

- Explain the steps in a workflow

- Customize a workflow process step

Automate end user tasks

End-user actions can be automated with high-level APIs

- Creating pages
- Adding components to a page
- Versioning
- Adding/Creating Tags
- Uploading Assets
- Modifying assets

AEM — Sites and Asset objects

Sling — Resource Objects

JCR — Nodes, Properties, and Permissions objects

Harder to manipulate application objects

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Access AEM objects through APIs

APIs for application-level objects:

- Webpage
  - com.day.cq.wcm.api.Page
  - com.day.cq.wcm.api.PageManager

- Assets
  - com.day.cq.dam.api.Asset

- Tags
  - com.day.cq.tagging.Tag
  - com.day.cq.tagging.TagManager

- Tasks
  - com.adobe.granite.taskmanagement

- WorkflowSession
  - com.adobe.granite.workflow

- LiveCopy
  - com.day.cq.wcm.msm.api

- References
  - com.adobe.granite.references

- Many more..

Page Manager pseudo code

```
//Create page
PageManager pageManager = resource.getResourceResolver().adaptTo(PageManager.class);

Page p = pageManager.create(parentPath, pageNodeName, template, title);
```
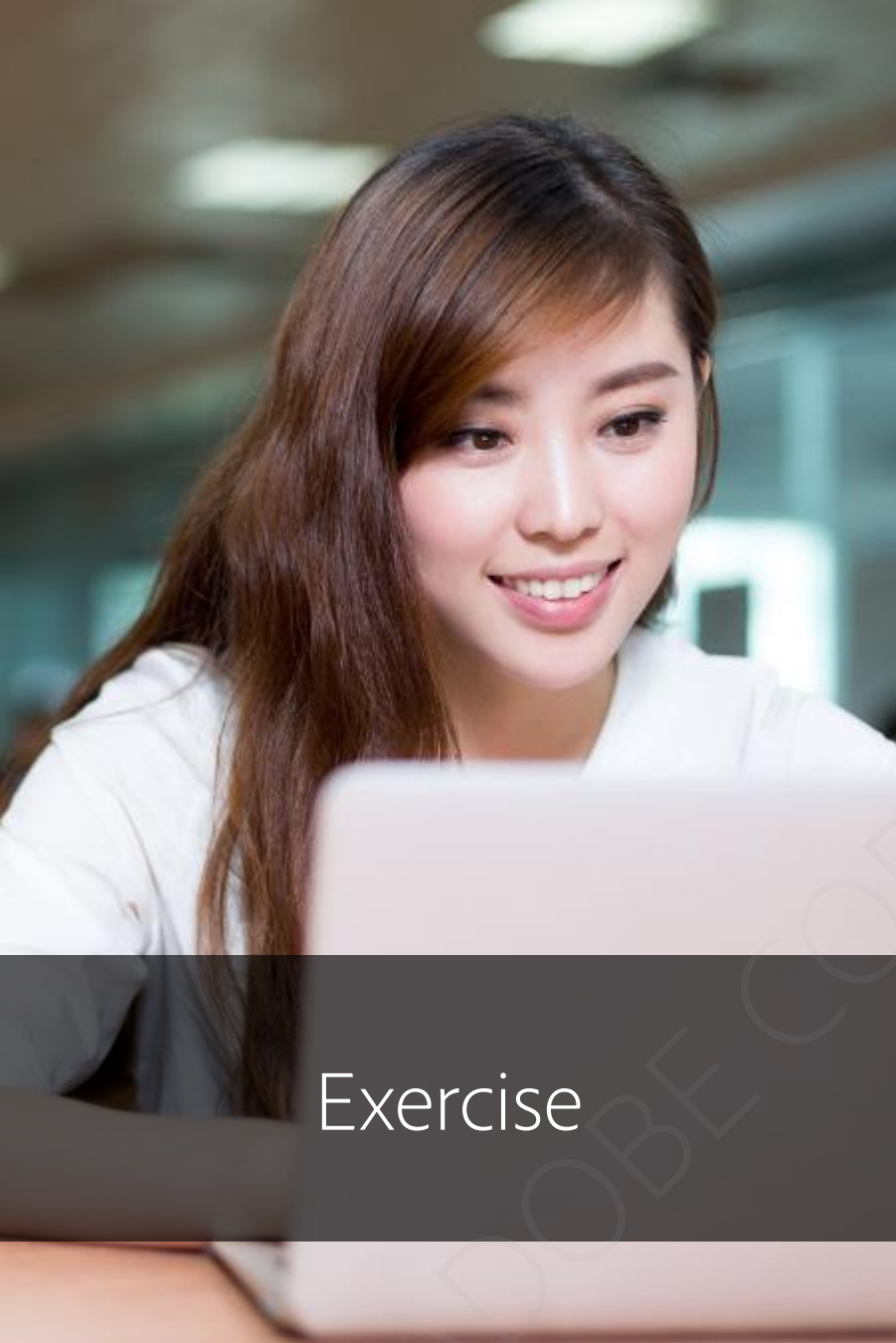
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Tag Manager pseudo code

```
//Add tags
TagManager tm = resource.getResourceResolver().adaptTo(TagManager.class);

tm.setTags(p.getContentResource(), new Tag[]{tm.resolve(tag)},true);
```

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Exercise 1: Create an AEM page programmatically
Exercise 2: Import multiple pages (Optional)

Exercise

Steps in workflows

- A workflow is a sequence of steps.
- Automated steps:
  1. AEM performs the step automatically.
  2. Trigger the next step of the workflow to be started.
- Manual steps:
  1. User or group is notified of the newly assigned steps.
  2. Require a user to take an action.

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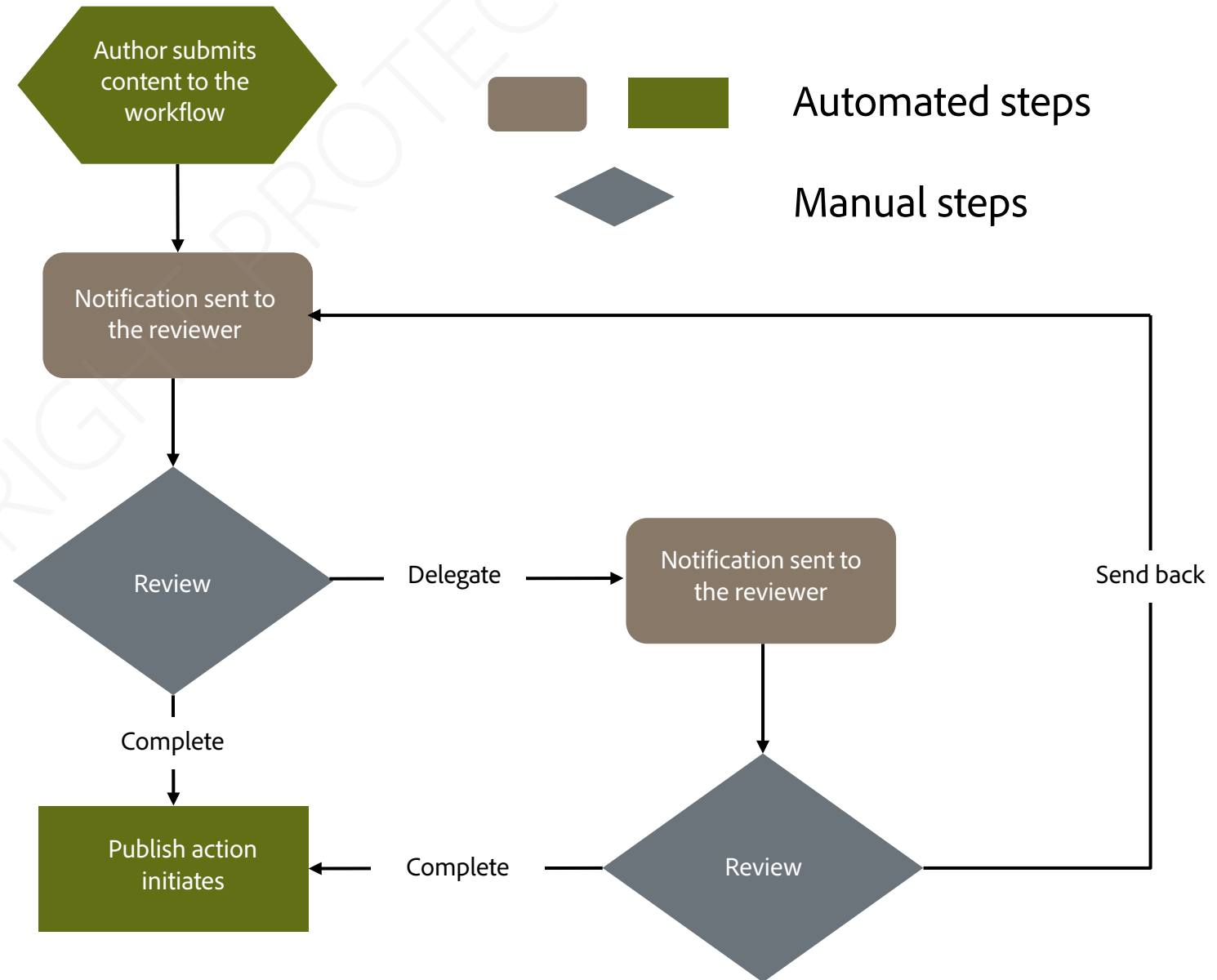
Start a workflow for content

Authors, Librarians, and general users can start workflows

- Must be apart of *workflow-users* group

Create menu (Assets and Sites)

Page Information Menu
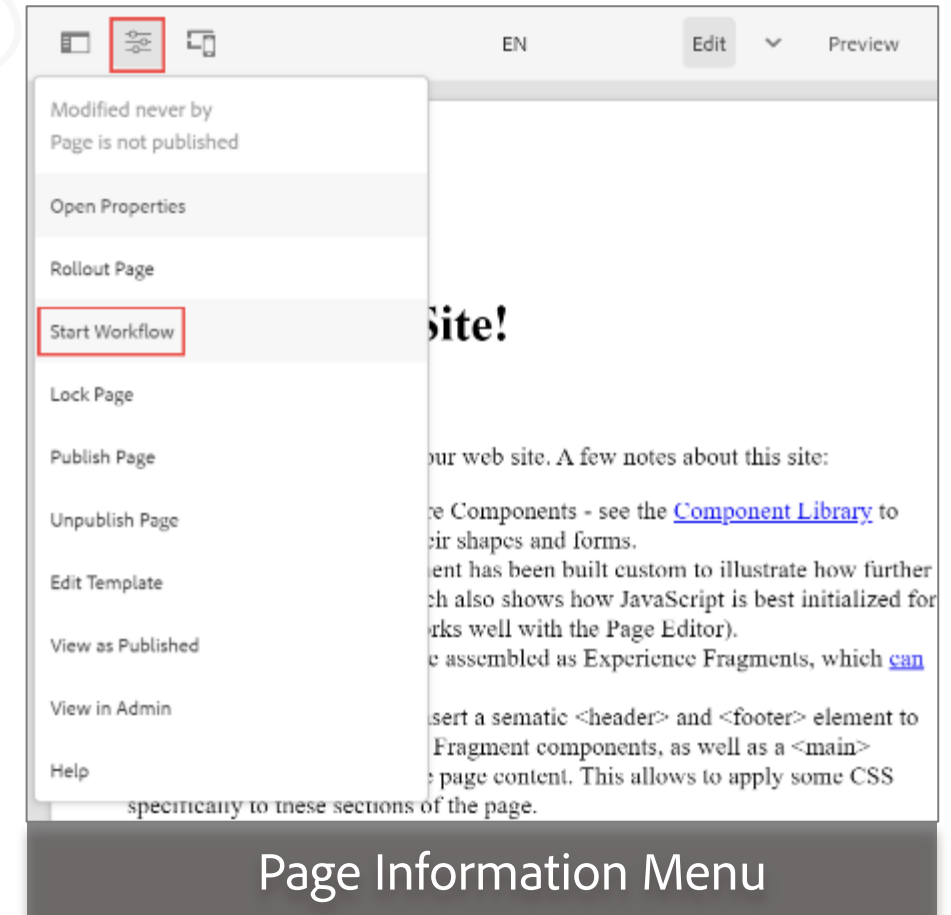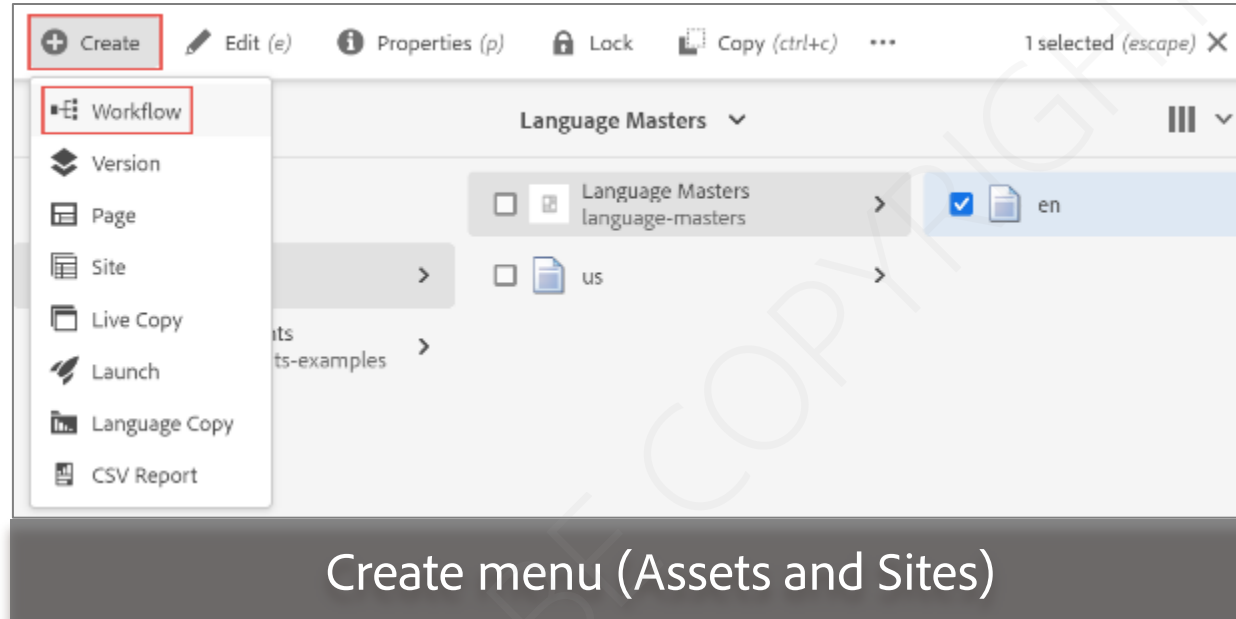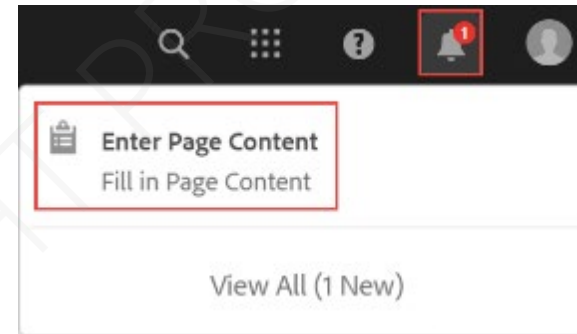
Notification Inbox

View all steps, workitems, and notifications:

- Assigned to the current user
- Assigned to groups the user is a member of

Actions on an Inbox item

Open displays:

- Workitem info
- Workflow info
- Comments on workflow

Payload - Reveals the content attached

Complete – Marks the item as completed

Step back – Sends back to the previous participant

Delegate – Assigns the item to another user or group

Managing workflows | Workflow console

 Tools > Workflow

Administer the workflow capability:

- Define and implement how a workflow works as a workflow model by using an editor

- Monitor and manage the current and past workflow instances

- Define triggers to start a workflow automatically

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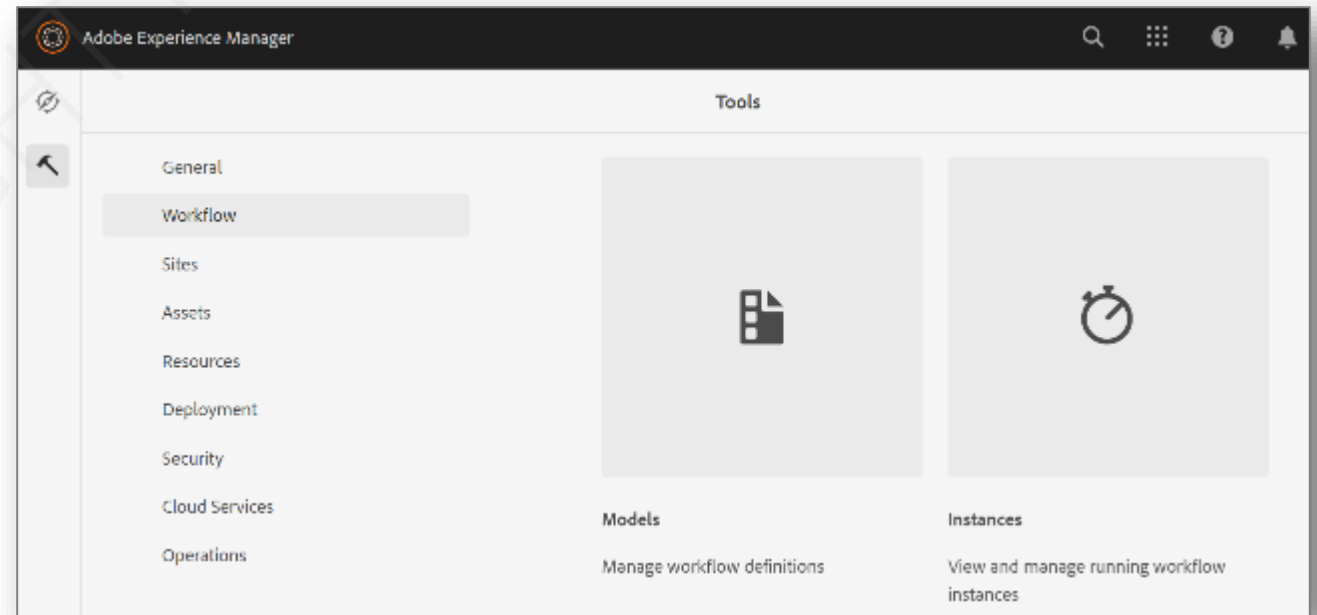
Workflow tools

Process modeling

- Models: Create and edit workflow models

- Launchers: Start workflows automatically
  - Define triggers to start a workflow instance

Process monitoring

- Instances: View instances of running processes

- Archive: View finished workflow instances

- Failures: View failed workflow instances

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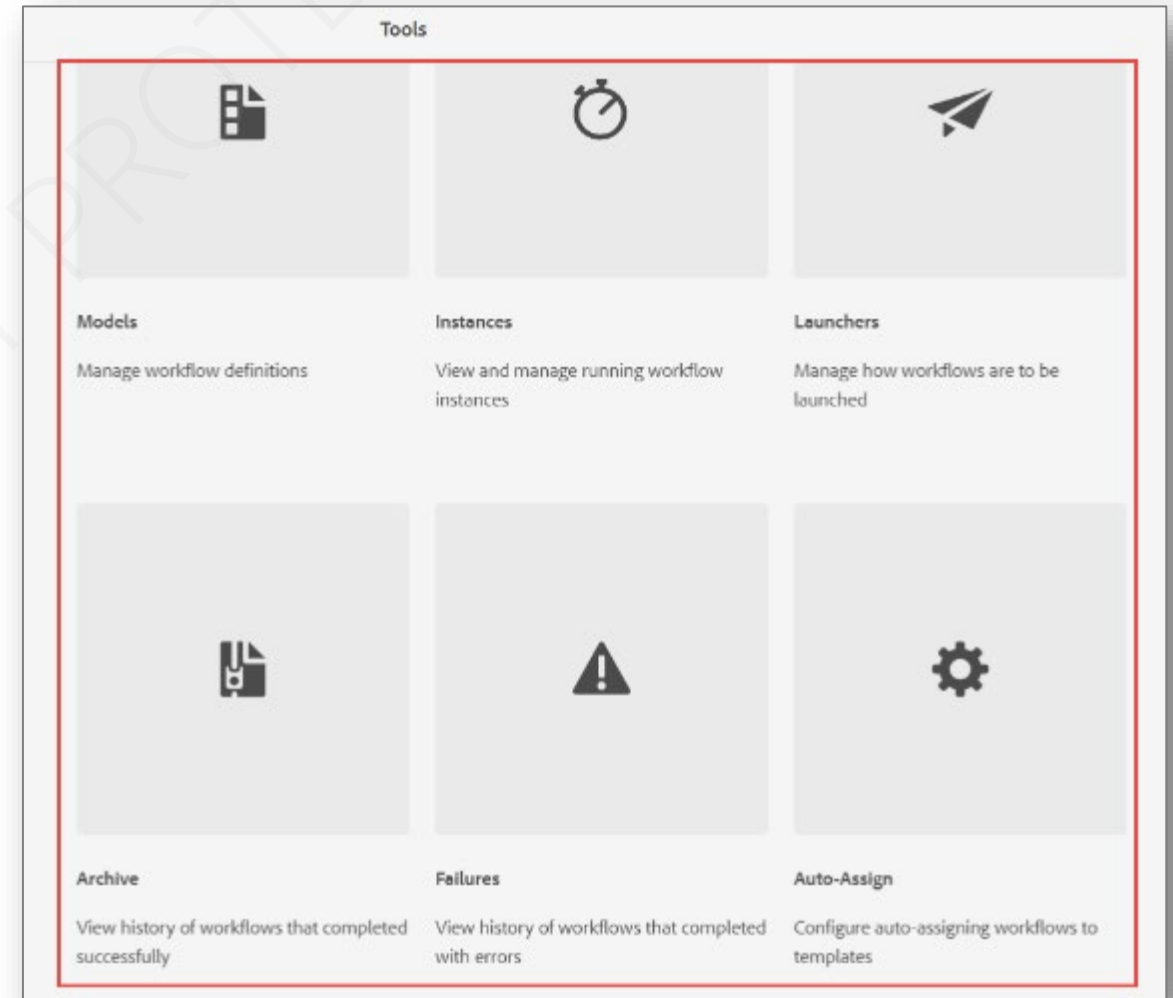
Workflow Models

Tools > Workflow > Models

- Create or edit workflow models

Workflow Editor

- What You See Is What You Get (WYSIWYG) editor

- Syncs with runtime

- Out-of-the-box (OOTB) workflow steps

- Workflow variables

- Workflow stages

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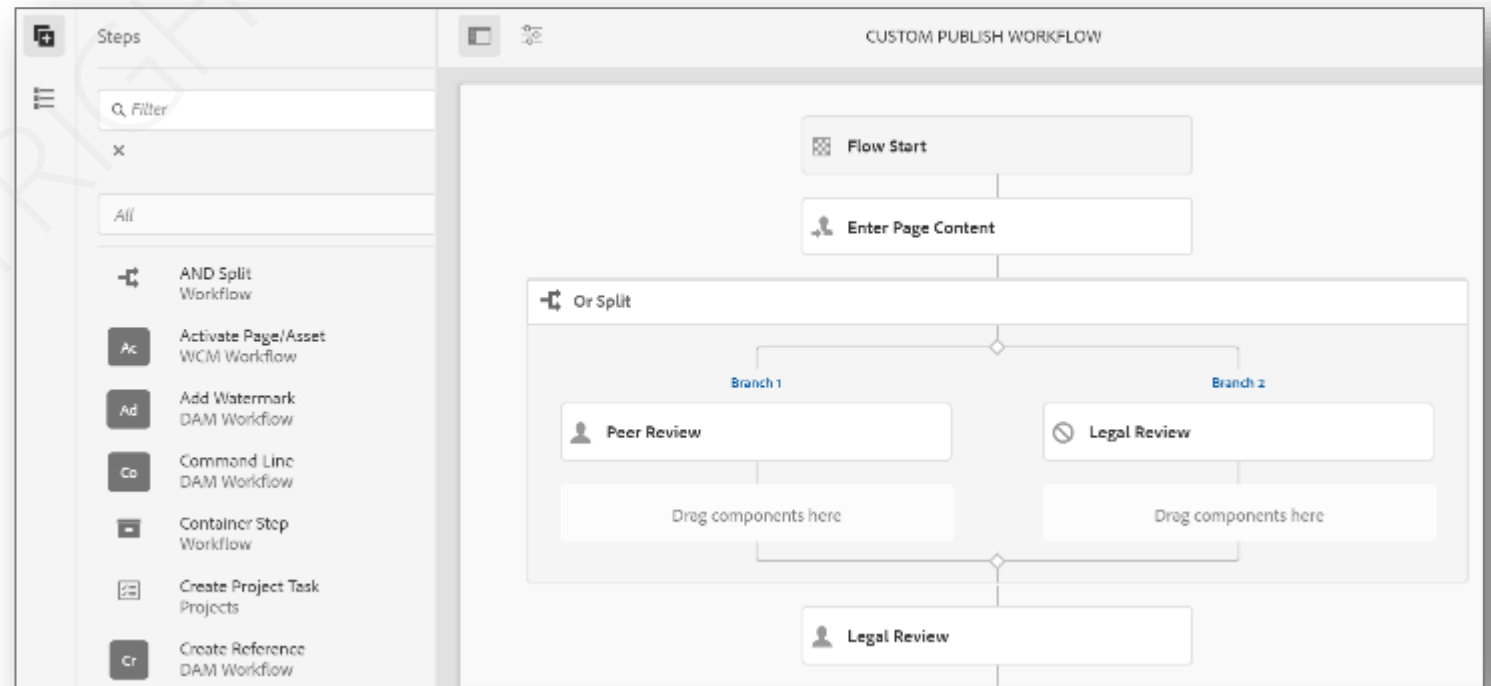
Workflow model editor

- Defines the order and function of every step in the process

- Configure workflow model

- Automatic steps

- User steps

- Decision steps

- Synchronize with runtime model

CUSTOM PUBLISH WORKFLOW — Sync

Save and sync

Flow Start

Enter Page Content

Or Split

Branch 1 — Branch 2

AEM User/Group involvement

Peer Review — Legal Review

Drag components here — Drag components here

Activate Page

Automatic step

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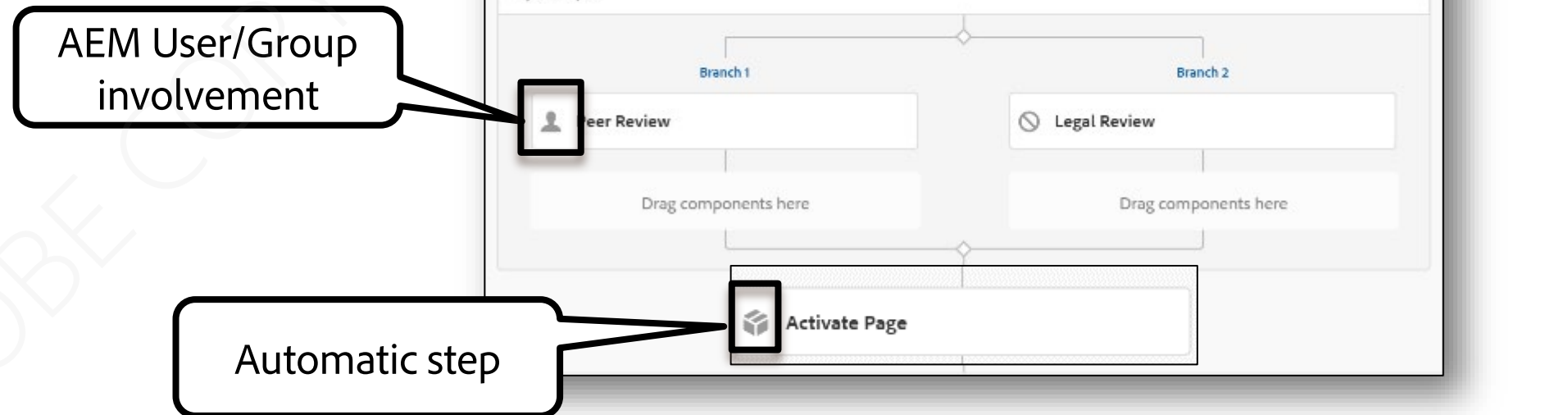
Workflow steps

- Participant step:

  - Enables you to assign a step to a user or a group of users

  - Notifies participants of their required action through email

  - Helps configure timeouts and timeout handlers for this step

- Process step:

  - Executes JavaScript or calls an OSGi service (Java) to automate the process

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Workflow steps

- Splits

  - Create multiple processing paths in the flow

  - Processing flow can be controlled by routing expressions

  - OR Splits and AND Splits
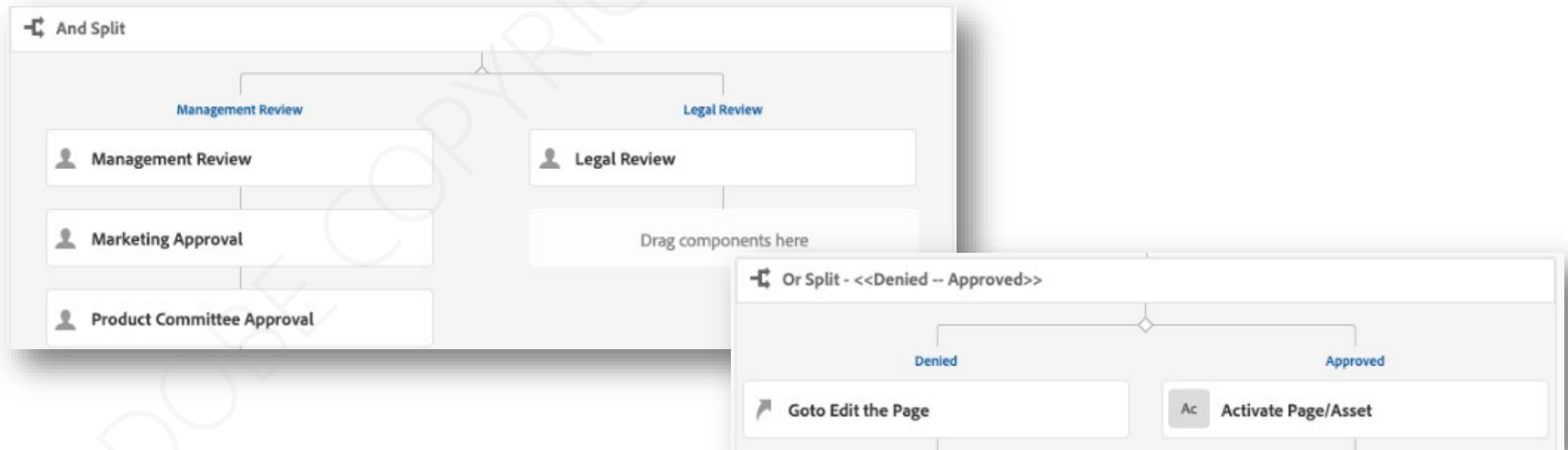
Goto step

- Specify the next step to execute in the workflow model

- Define advanced routing structures in your workflow models based on rule definitions or scripts

  o Useful to implement loops
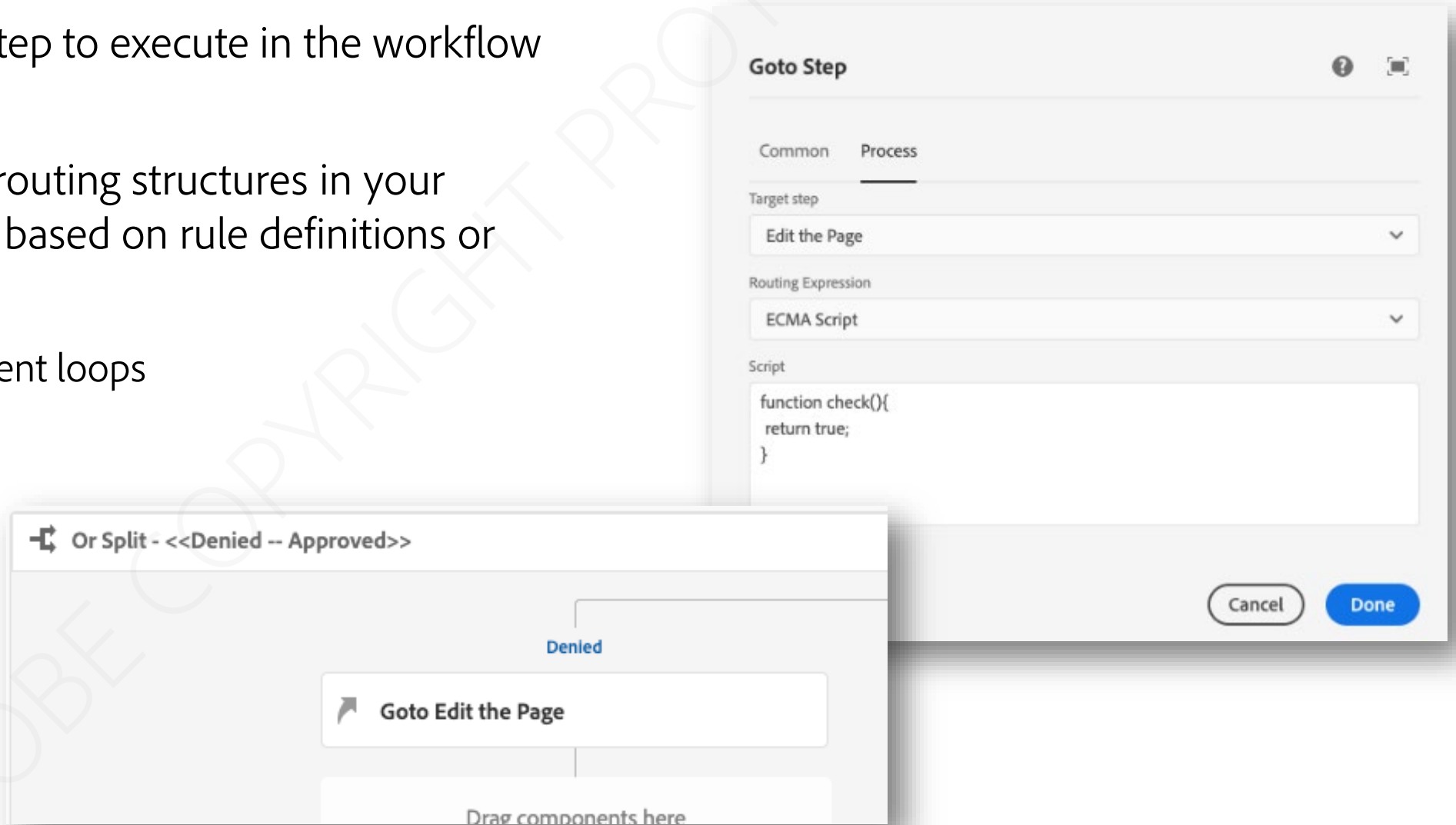
Demonstration

Observe a Workflow in the Model Editor

Open Tools > Workflow > Models > Publish Example

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Business use case | Problem

ACME company wants to use the Asset Review Status (typically used for Review Tasks) to have a visual on Asset cards that reveals if an asset approved, requires changes, or is rejected. Business requirements for this process:

- Designer uploads the asset and kicks off the process

- Designer needs to add descriptive metadata to the asset based on company standards

- Reviewer needs to review the asset and metadata and:

  o Approve the asset and publish the asset

  o Request changes and add comments to go back to the designer

  o Reject the asset and inform the designer it should be removed

Business use case | Solution

Use an AEM workflow with a custom workflow process

Workflow Model flow:

- Designer initiates the workflow
- Designer owns the first workitem to make edits
- Reviewer owns to the second step to:
  - Approve and auto publish
  - Request changes and send back to Designer
  - Reject and request the asset to be removed

Custom workflow process is needed to:

- Specify the Asset review status to set
- Update the metadata fields for the review status
- Copy the workflow comment and add it to the review status comment

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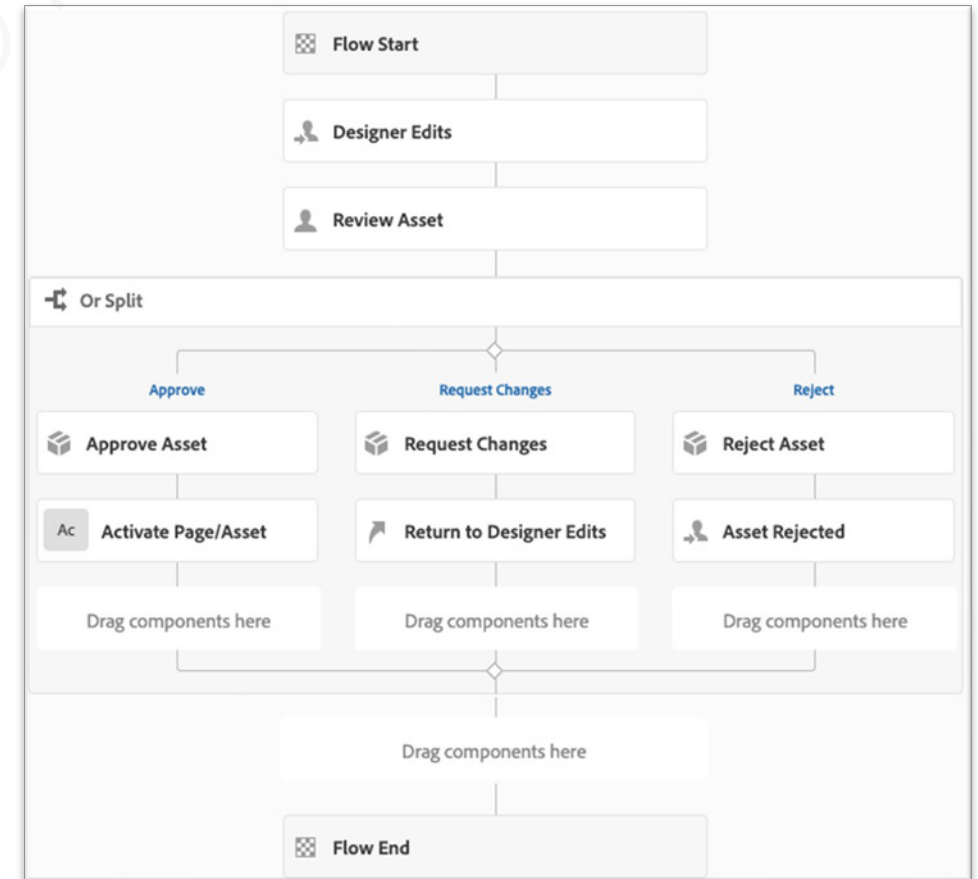
Workflow Process Service

Service to inject Java code into a workflow

- Must implement com.adobe.granite.workflow.WorkflowProcess
- process.label – the label that will show up in the Workflow Process step

execute(**WorkItem** item, **WorkflowSession** workflowSession, **MetaDataMap** args)

    o **item** – The object containing the current workflow step

    o **workflowSession** – The object container the current workflow session information

    o **args** – A map of the arguments added to the process step in the Model Editor

```java
33    @Component(service = WorkflowProcess.class,
34            property = {Constants.SERVICE_DESCRIPTION + "=Workflow process to set Asset Review Status",
35                    Constants.SERVICE_VENDOR + "=Adobe",
36                    "process.label=Set Asset Review Status"
37            })
38    public class ReviewStatusWriter implements WorkflowProcess {
39        @Override
40        public void execute WorkItem item, WorkflowSession workflowSession, MetaDataMap args) throws WorkflowException {
```
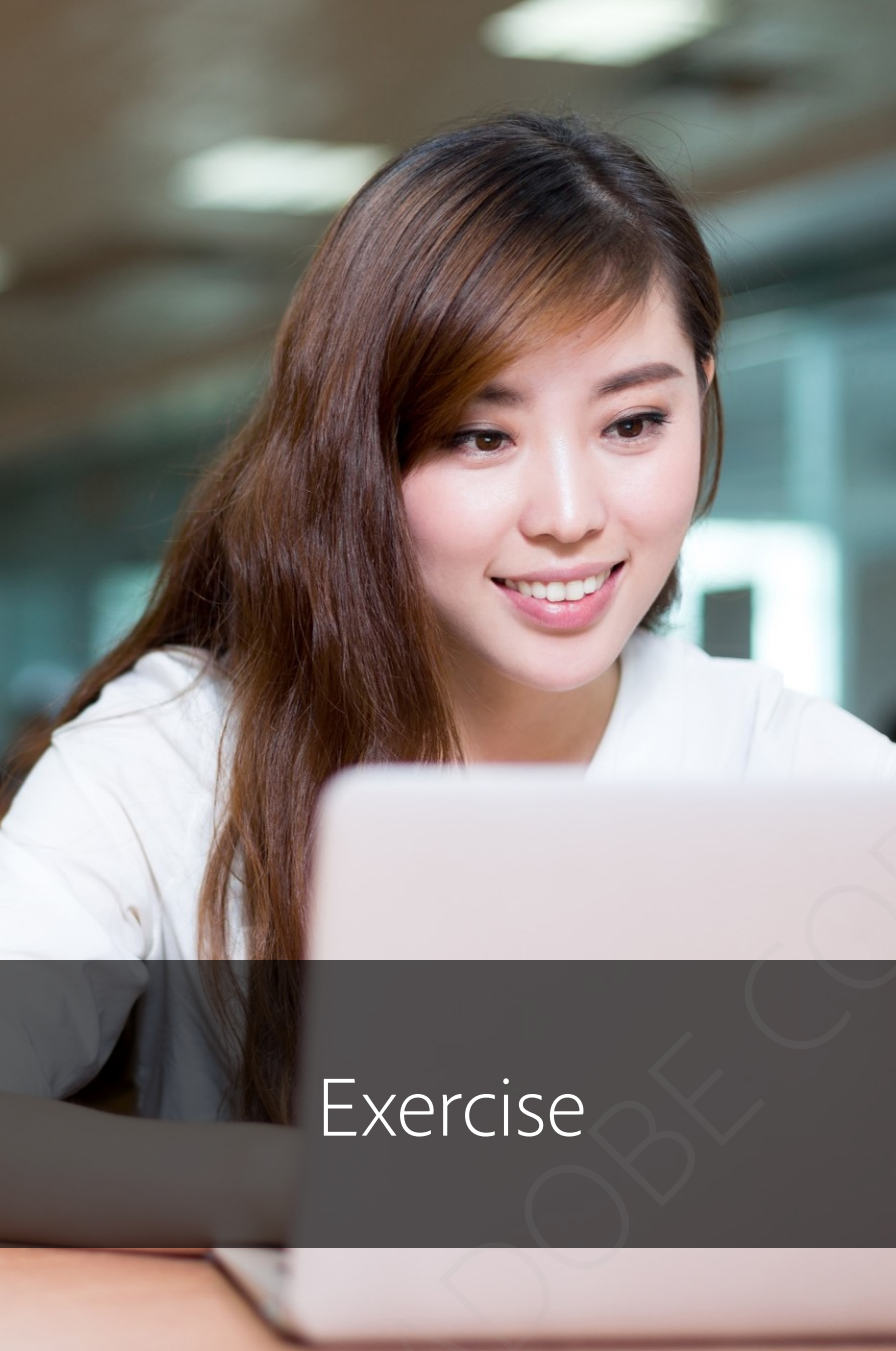
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Add a Process Step

Specify the installed Workflow process

- Name the process step

- Check the Handler Advance

- Add any arguments needed for the process

Reuse the process over and over as needed
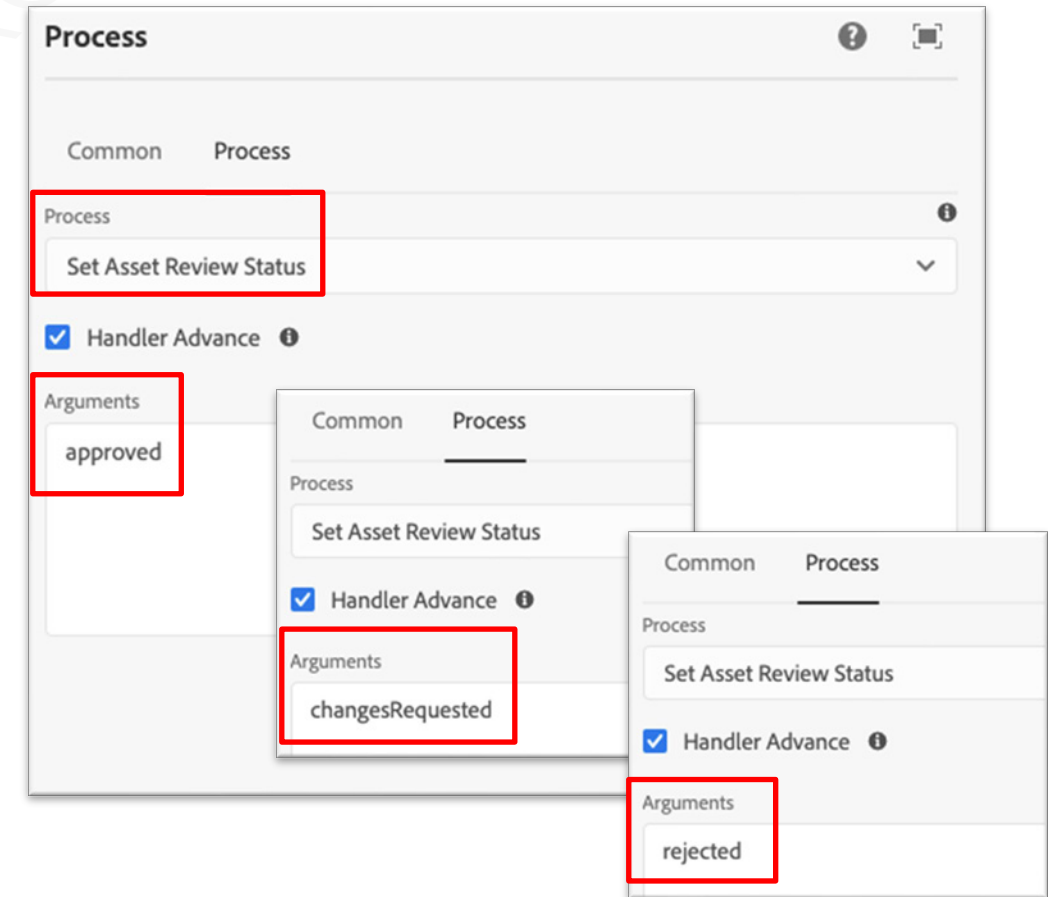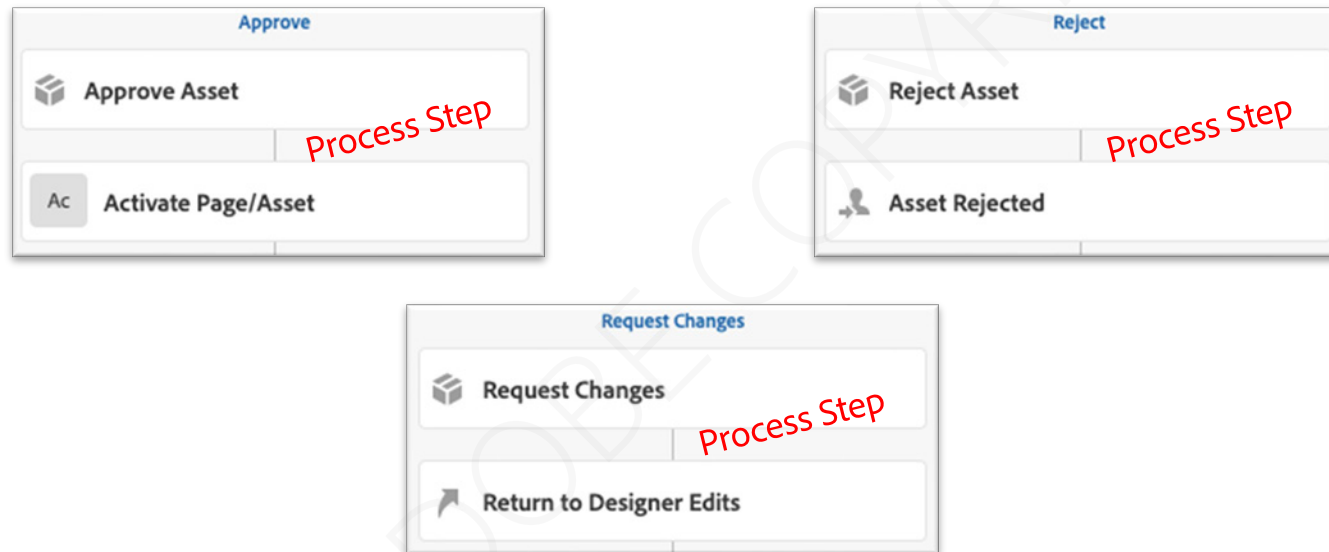
Exercise 3: Use a Workflow for asset review

Exercise

Scenario: AEM Assets has a review status field in the metadata. Typically, this field is used in conjunction with the Asset Review Task or with document review for DITA content. In this scenario, ACME company wants to use this field to formalize the publishing process which will require a custom Workflow process. The desired process is:

- Designer uploads the asset

- Designer starts the Asset Review Workflow

- The workflow instructs the Designer to add descriptive metadata to the asset based on company standards

- The workflow then goes to the Reviewer, and they must review the asset and metadata and:

  o Approve the asset which will trigger auto-publish

  o Request changes and add comments to go back to the designer

  o Reject the asset and inform the designer it should be removed

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Key takeaways from this module:

- Workflows
  - o Used to automate business processes and activities

- Workflow Launchers
  - o Enables you to invoke a workflow based on certain predefined conditions
  - o Can be configured launchers through the Workflow console

Key Takeaways

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