Working with Pull Requests and ChatOps

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INDEPENDENT

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Overview

Creating pull requests with jx
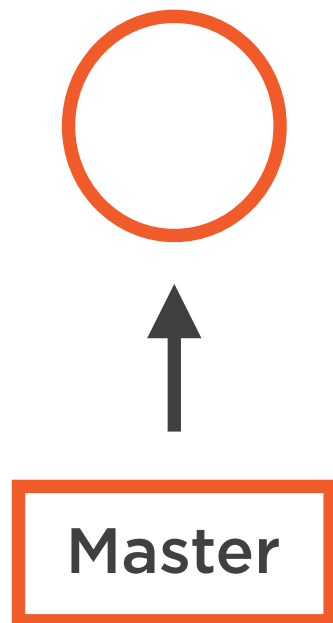
Exploring how Jenkins X interacts with our pull requests

Using ChatOps to issue commands

Managing reviewers and approvers

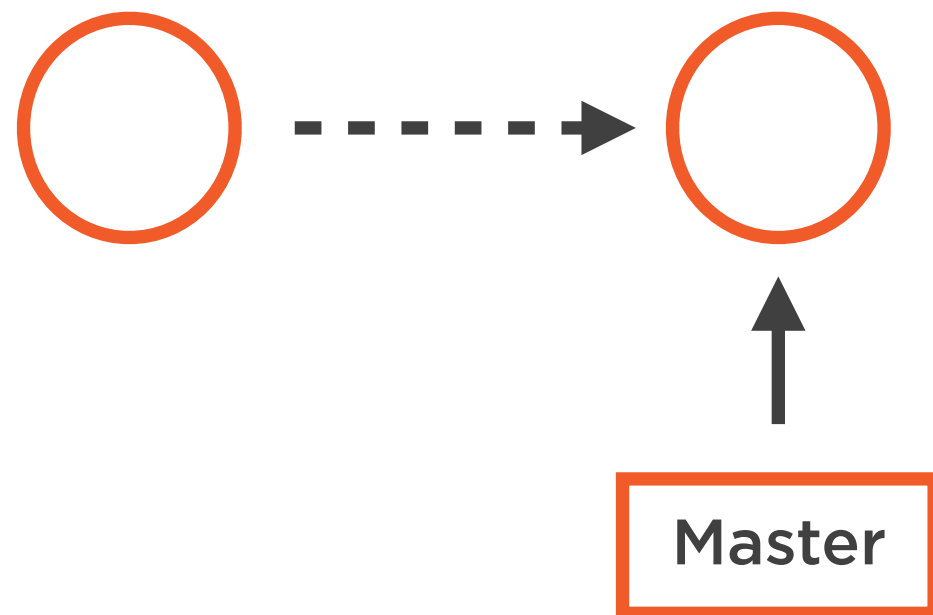Leveraging preview environments
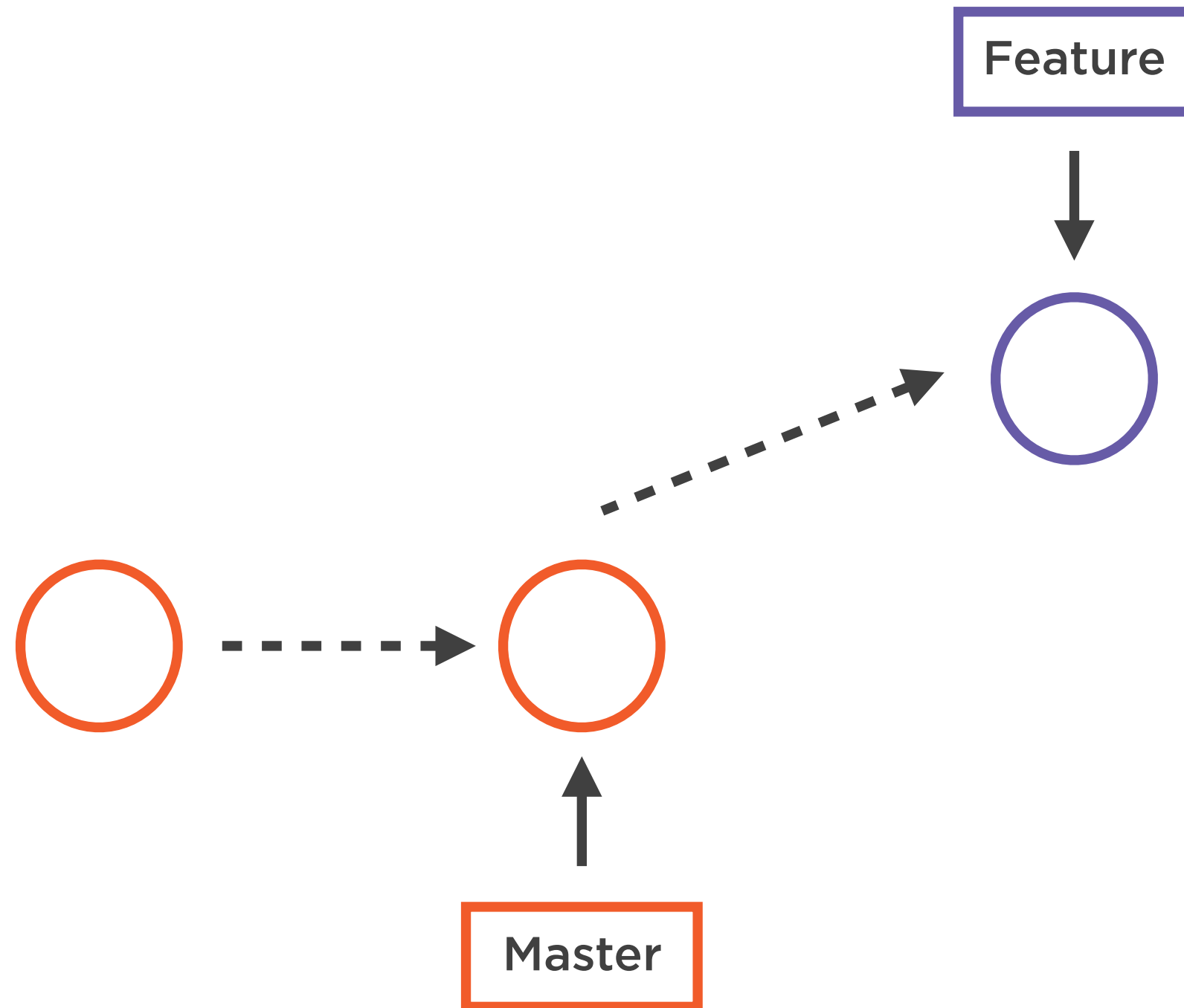
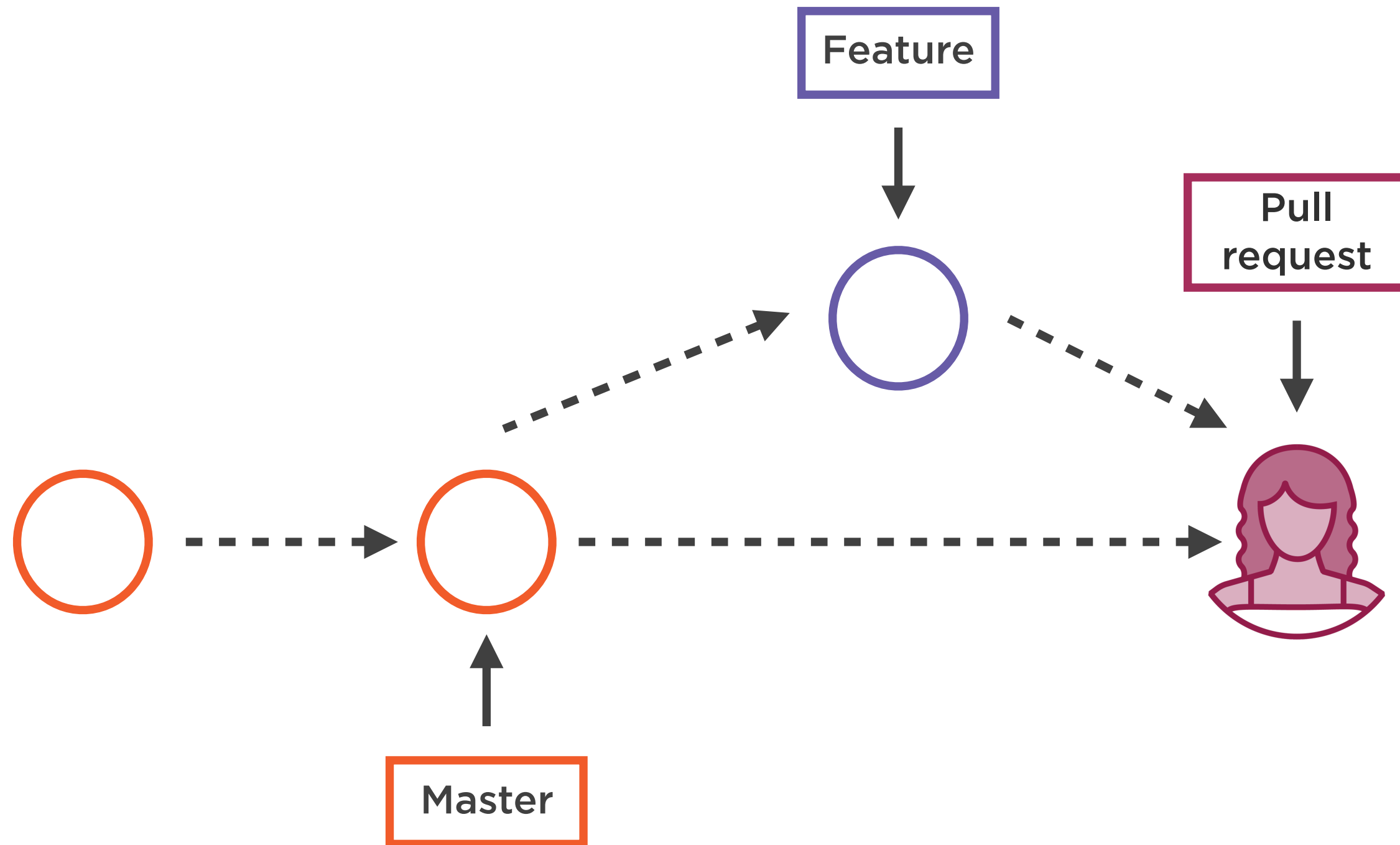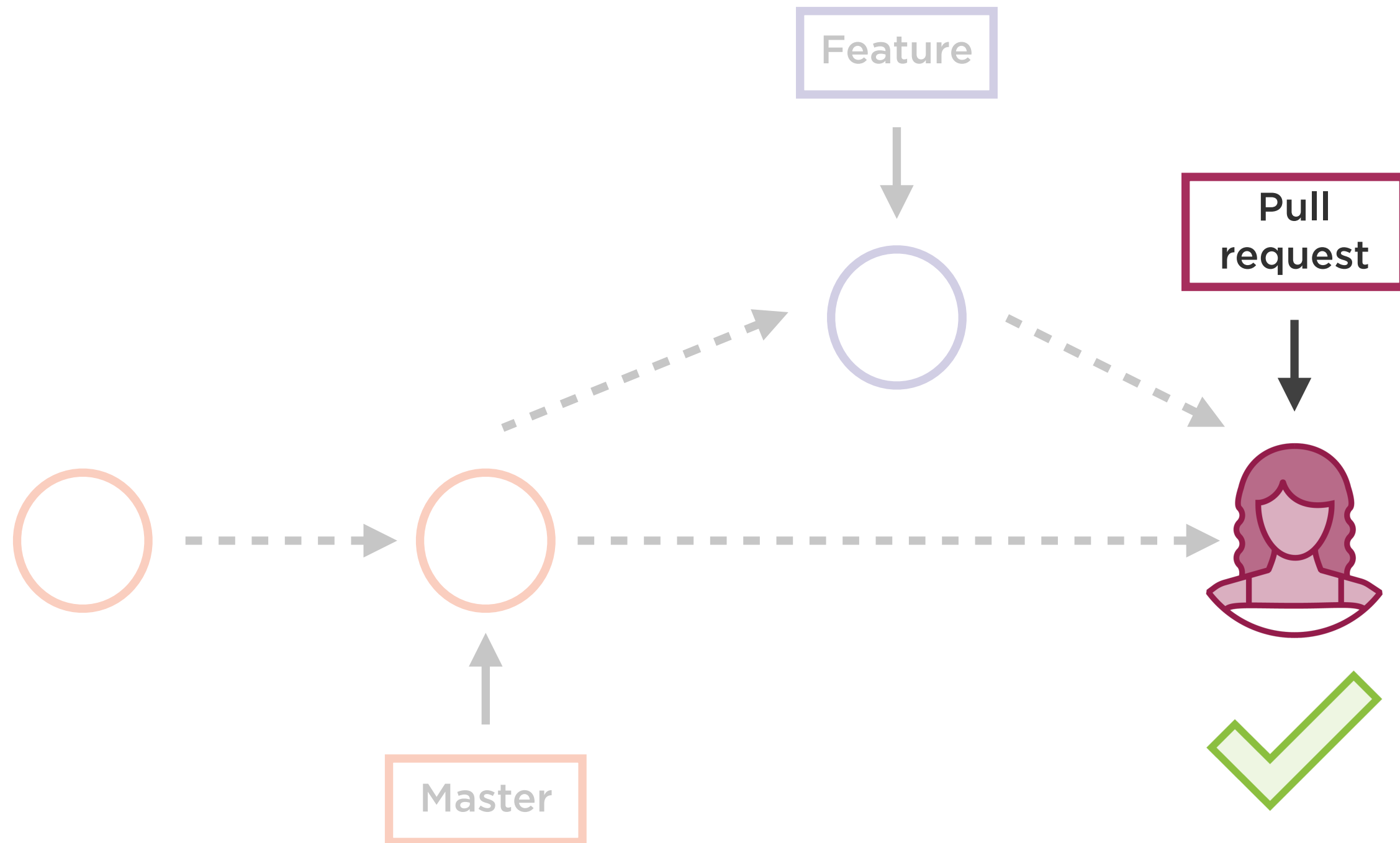# Pull Request Workflow

Master

Pull Request Workflow

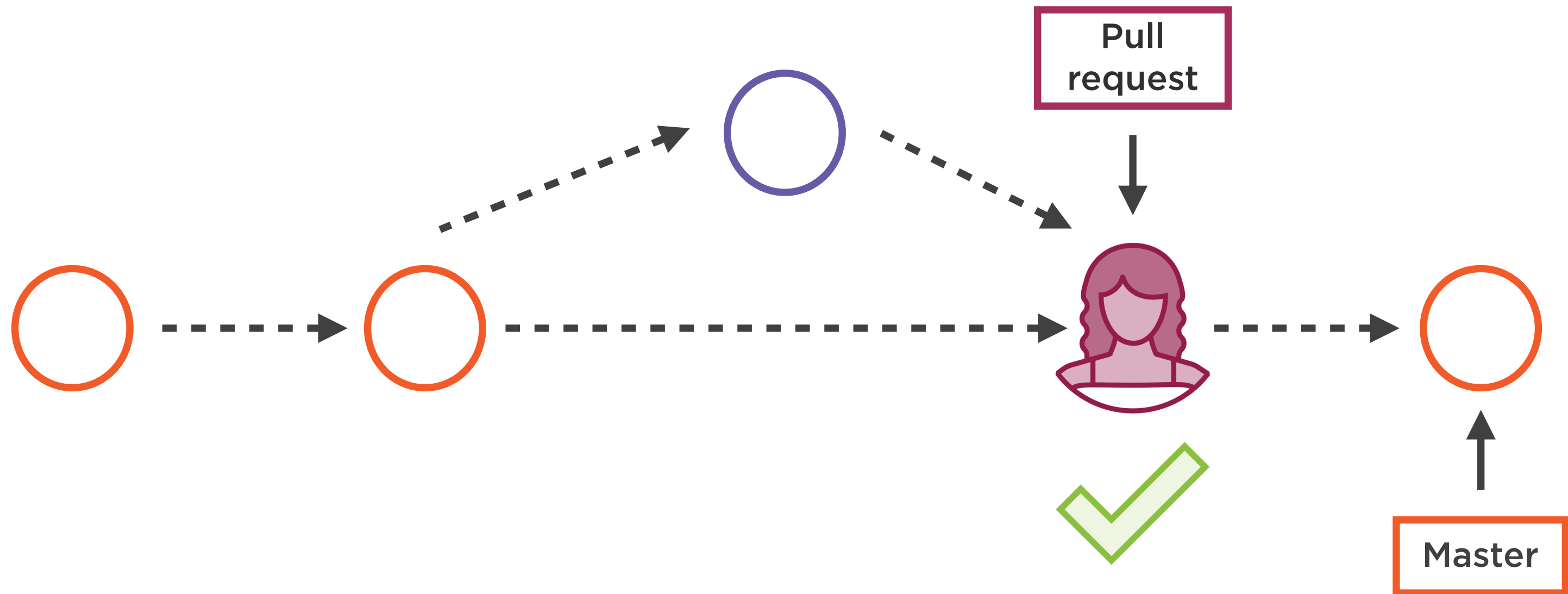# Pull Request Workflow

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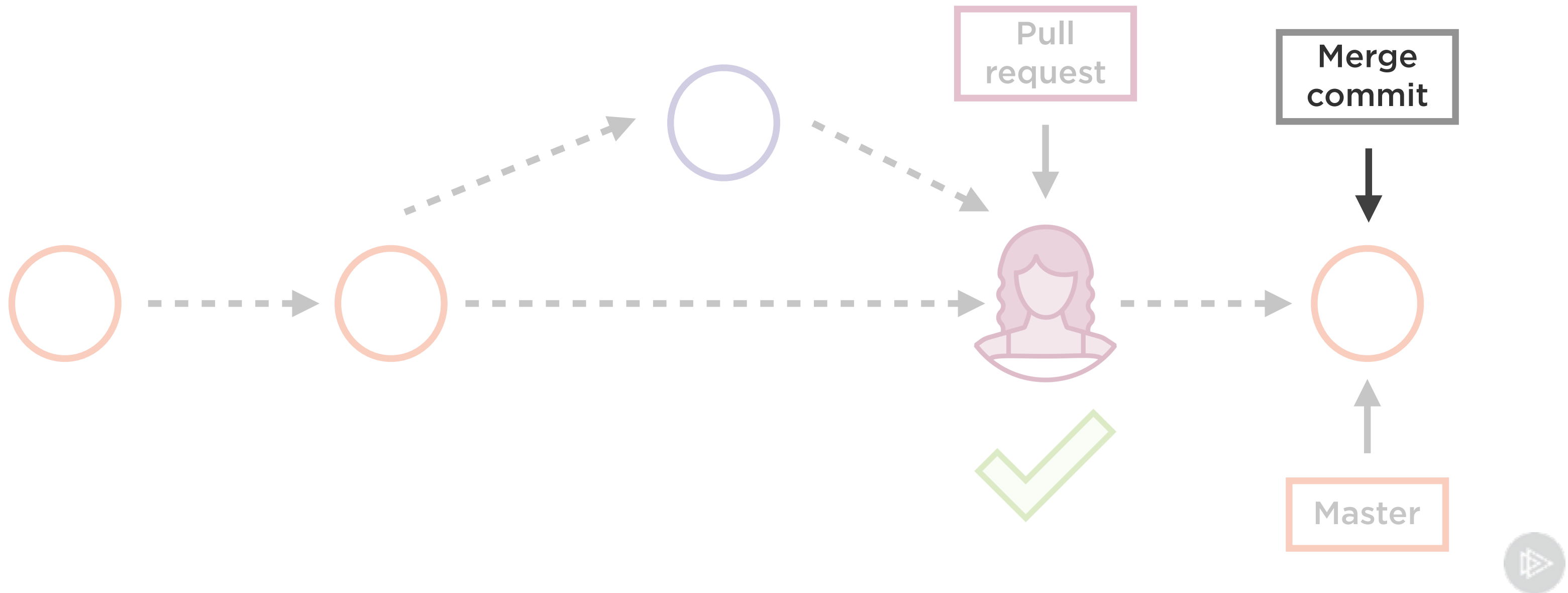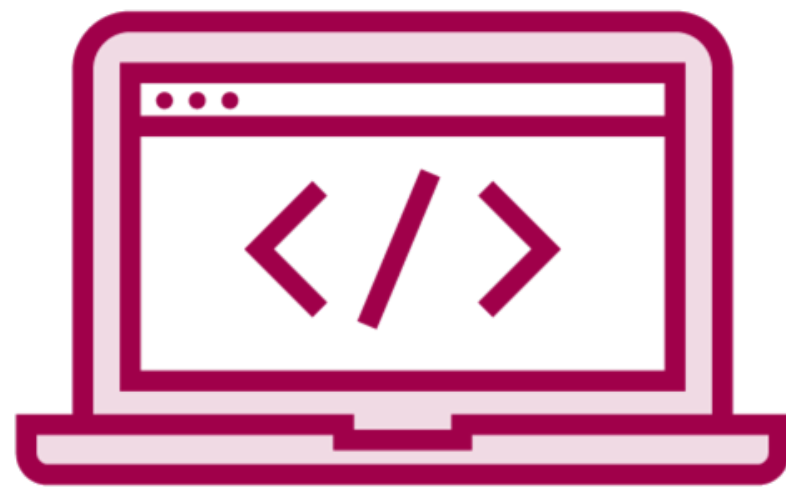Feature

Pull request

Master

Pull Request Workflow

Pull Request Workflow

Jenkins X streamlines the pull request workflow

jx create pullrequest

Command-line driven mechanism to create a pull request in GitHub

Uses GitHub API behind the scenes

GitHub Jenkins X Pull Request Integration

Introducing Prow

Kubernetes CI/CD system

Orchestrates Jenkins X pipelines via GitHub events

Automates interactions with pull requests

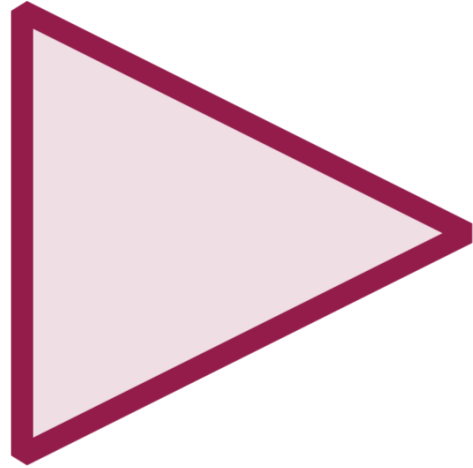**Enables ChatOps driven development**

GitHub only, to be superseded by Lighthouse

Core Prow, Jenkins X and GitHub Integration Features

Core Prow, Jenkins X and GitHub Integration Features

Triggering builds

How Pull Request Pipelines Are Triggered

Workstation

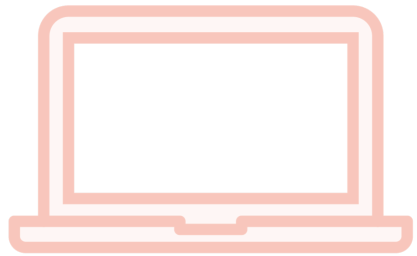# How Pull Request Pipelines Are Triggered

Workstation

GitHub

Push

How Pull Request Pipelines Are Triggered

Workstation

GitHub

Prow

Push

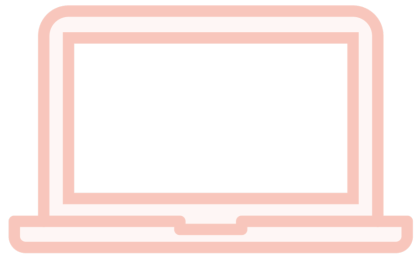Trigger
Webhook

How Pull Request Pipelines Are Triggered

Workstation   **GitHub**   **Prow**

Push   Trigger
Webhook
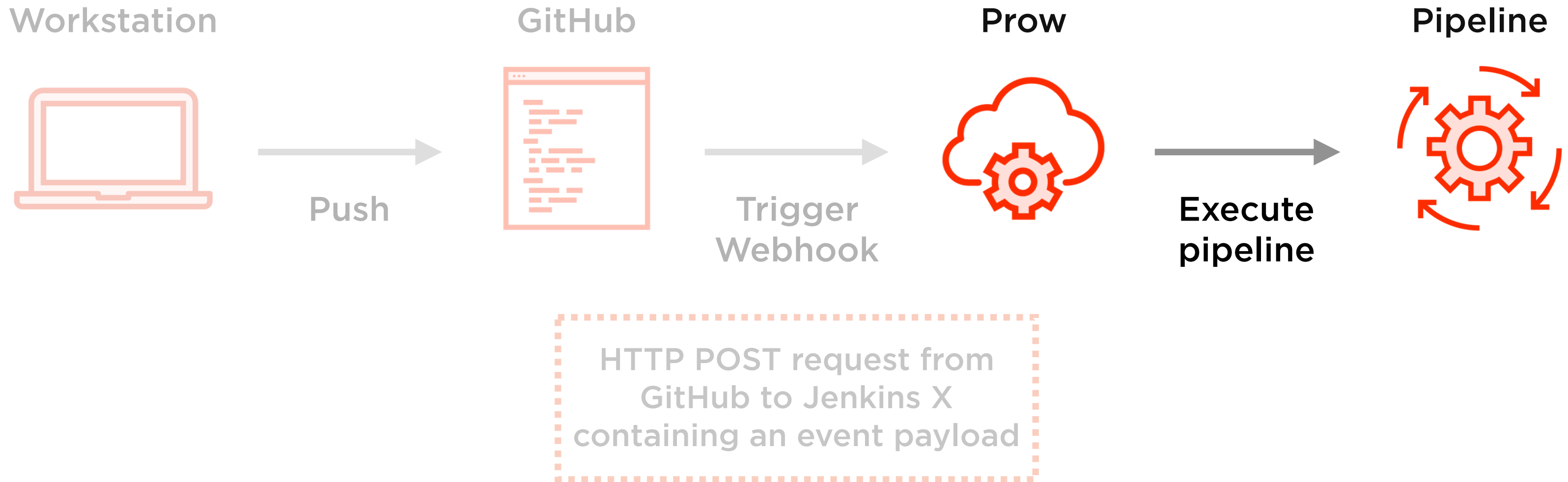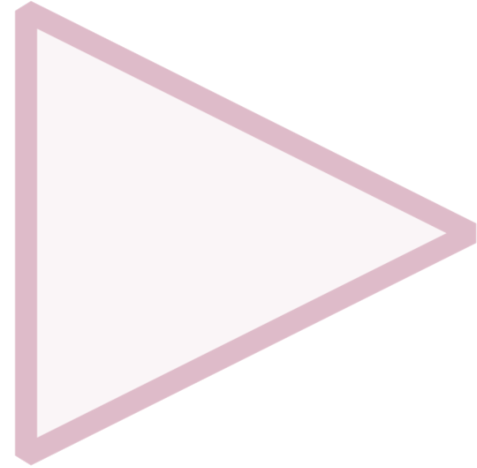
HTTP POST request from
GitHub to Jenkins X
containing an event payload

How Pull Request Pipelines Are Triggered

Workstation

GitHub

Prow

Pipeline

Push

Trigger
Webhook

**Execute
pipeline**

HTTP POST request from
GitHub to Jenkins X
containing an event payload

Core Prow, Jenkins X and GitHub Integration Features

Triggering builds
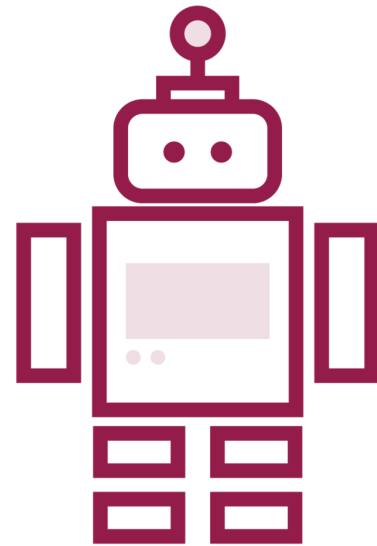
Automated PR interactions

Automated Pull Request Interactions

Jenkins X leverages the GitHub API to...

Comments

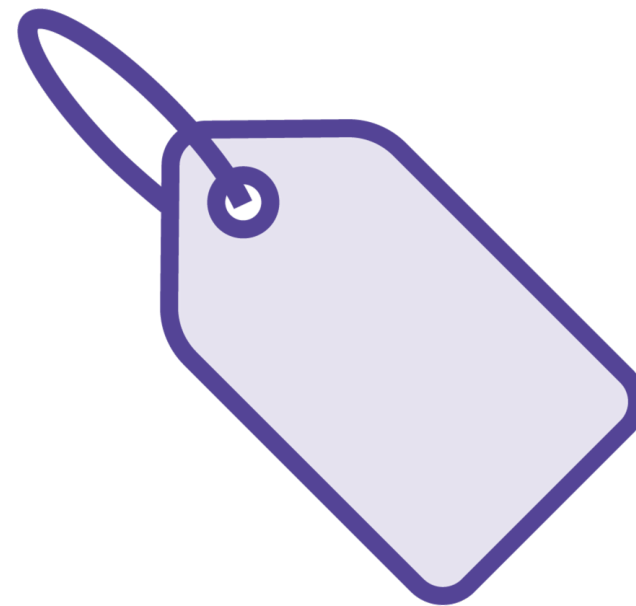**Pipeline bot communicates PR status**

Automated Pull Request Interactions

Jenkins X leverages the GitHub API to...

Comments

Pipeline bot communicates PR status

Labelling
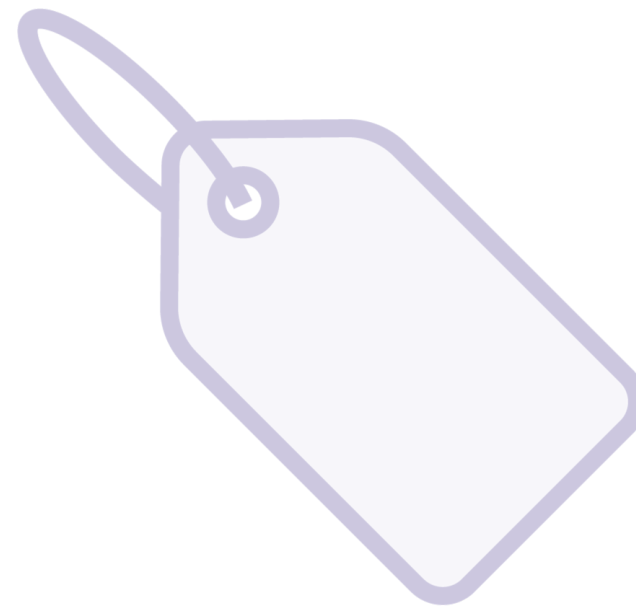
Adds labels based on project source

Automated Pull Request Interactions

Jenkins X leverages the GitHub API to...

Comments

Pipeline bot communicates PR status

Labelling
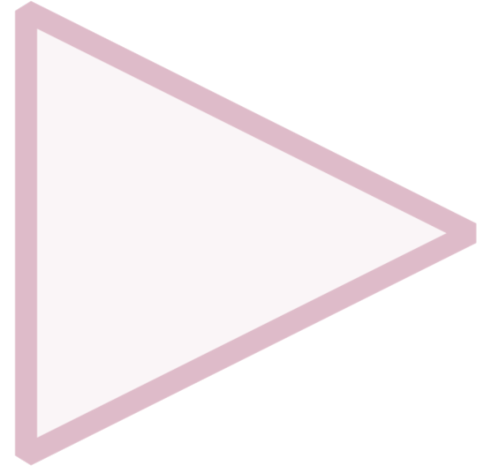
Adds labels based on project source

Track build progress
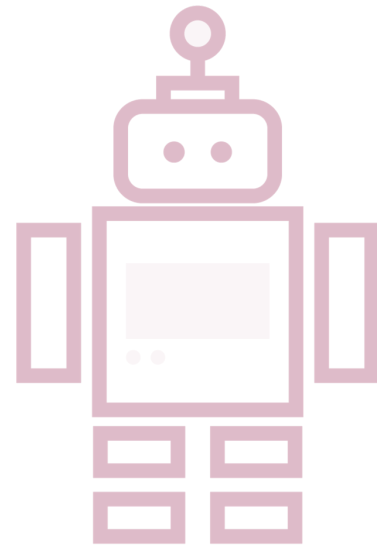
Keeps track of whether a PR can be merged

Core Prow, Jenkins X and GitHub Integration Features

Triggering builds

Automated interactions with PR

Managing ownership
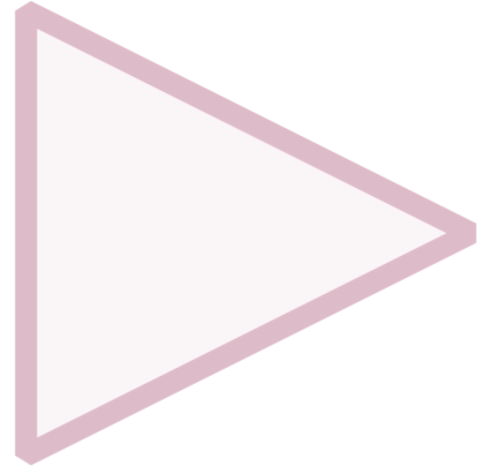
Owners File

Defines who can review and approve pull requests

Listed users must be project collaborators
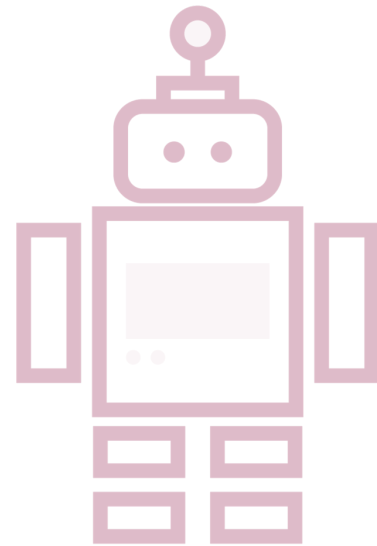
Automatic assignment of reviewers

Auto-merges when all checks are complete
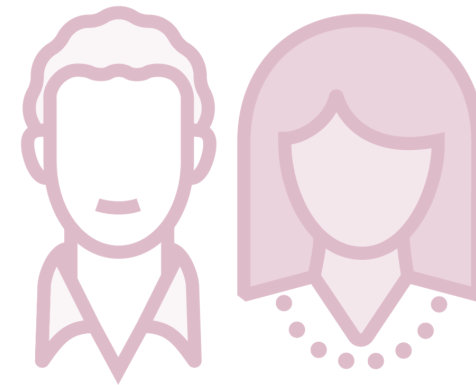
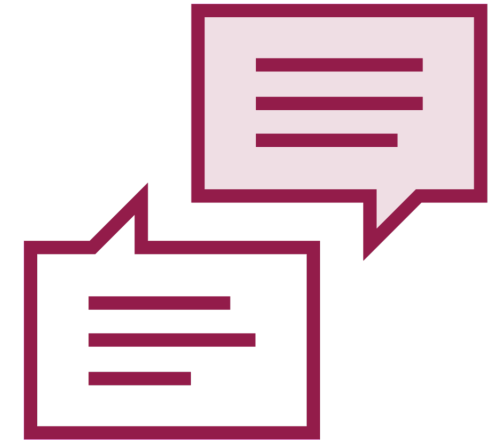# Core Prow, Jenkins X and GitHub Integration Features

Triggering builds

Automated interactions with PR

Managing ownership

ChatOps

Introducing ChatOps

Ability to perform changes to pull requests through comments

Commands are denoted through a forward slash

Each command is sent to Prow via a WebHook

Advantages include full audit trail and multi-step commands

```
/assign user          ◄ Assigns user as reviewer

/unassign user        ◄ Unassigns user as reviewer

/approve              ◄ Approves the PR

/hold                 ◄ Prevents merging

/close                ◄ Closes the PR

/re-open              ◄ Opens the PR

https://prow.k8s.io/command-help   ◄ Remaining commands linked to within the
                                     PR at this URL
```

Demo

Create a pull request using jx

Analysis of all the comments, checks & labels added to the pull request

Analysis of the owners file

Try out ChatOps

Reviewing and approving the pull request
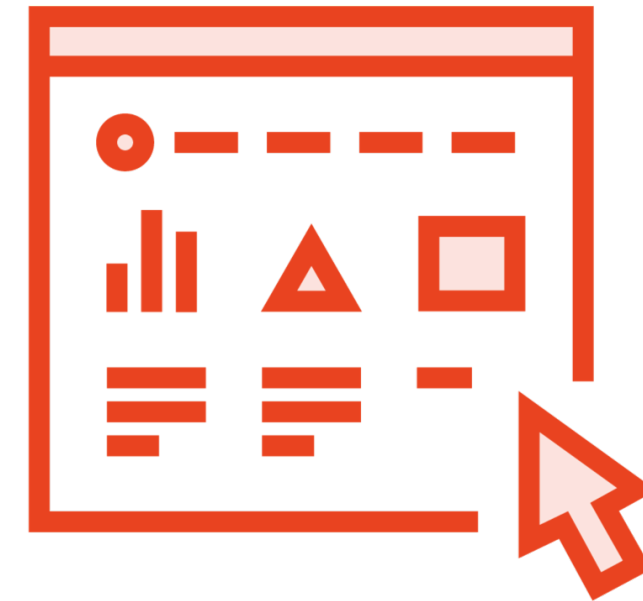
Jenkins X Pull Request Review Process

Viewing code and comments

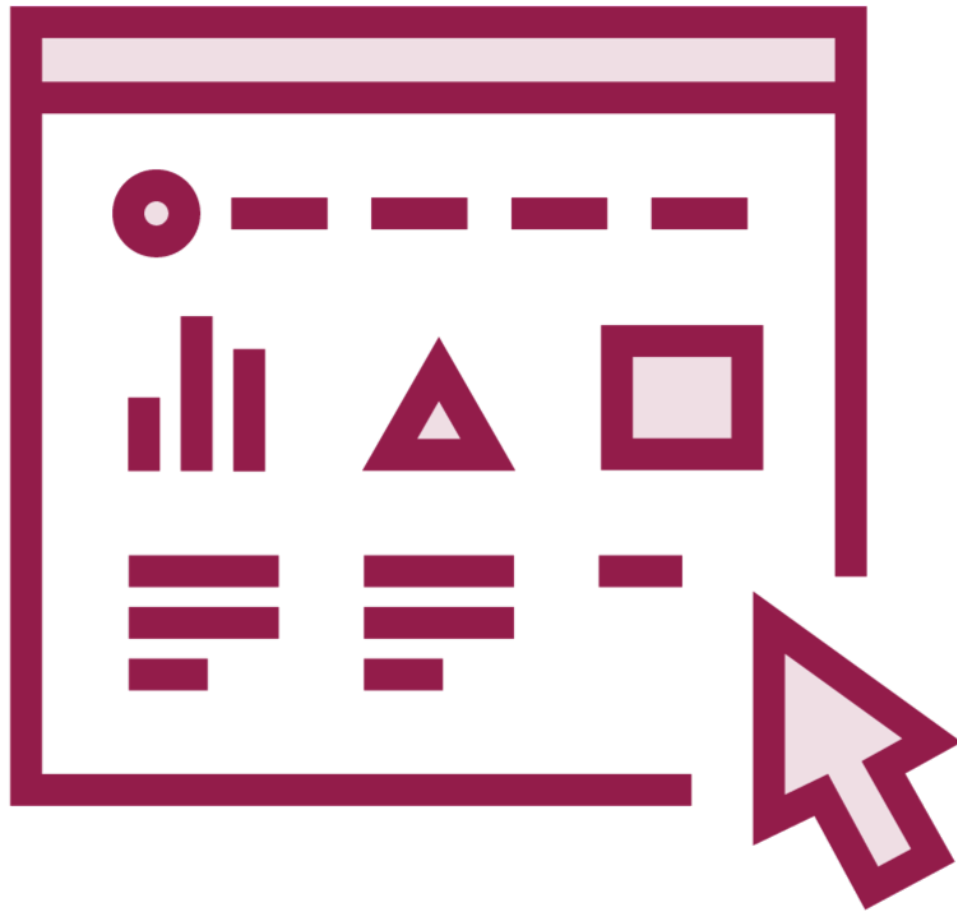# Jenkins X Pull Request Review Process

Viewing code and comments

Previewing instance of application

Introducing Preview Environments

Dedicated instance of application for review purposes

Built from code in PR branch

Runs in dedicated Kubernetes namespace

Configured through Helm chart preview directory

Automatically cleaned by Jenkins X cron

Demo

Create a pull request

Analysis of the broken preview environment

Fixing our preview Helm chart

Verify our preview environment now functions

Summary

Jenkins X streamlines the pull request workflow

- Automatically triggered builds

- Annotates PR with comments, labels, and checks

- Allows us to orchestrate Jenkins X with ChatOps

- Creates preview environments for testing