

# Automating Tasks with GitHub Actions

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# Overview



**Understanding GitHub Actions**

**Automating tasks**

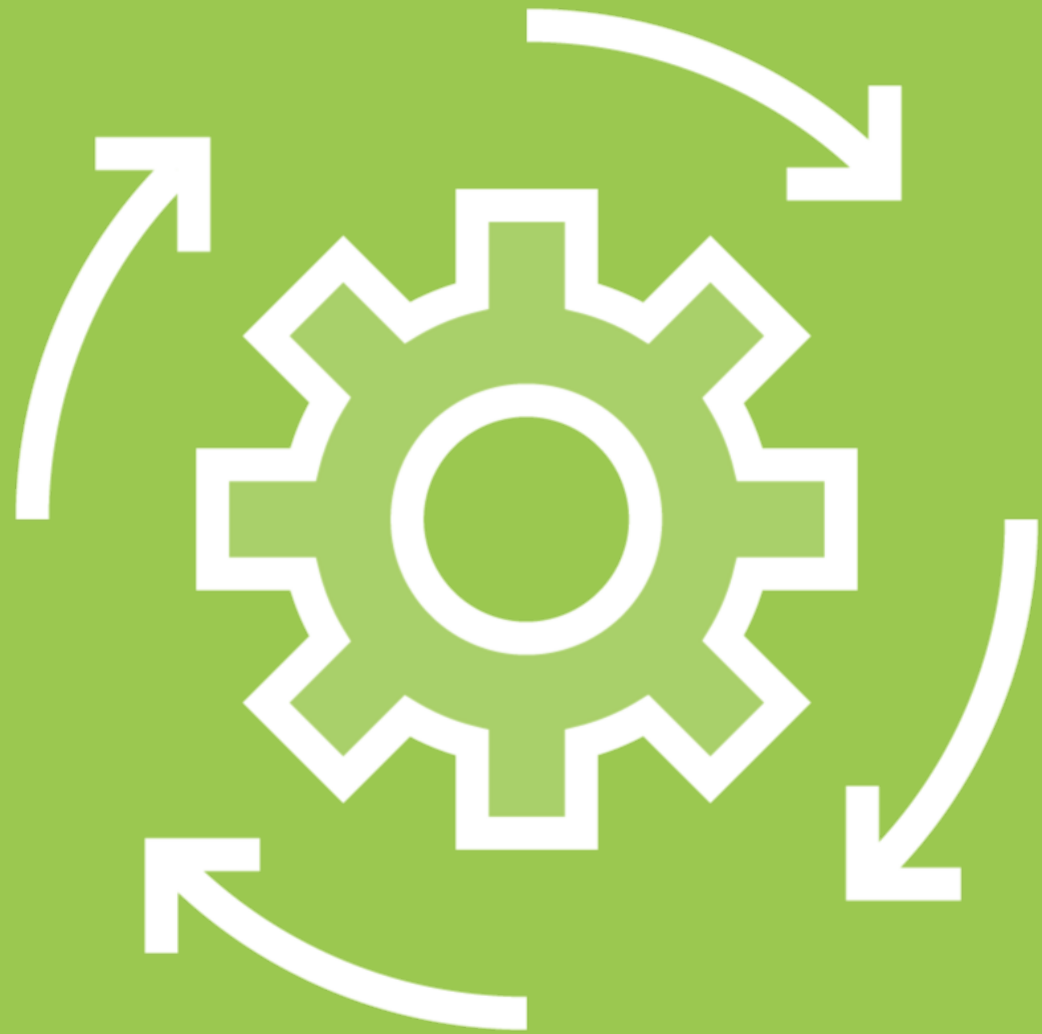
**Setting up continuous integration**



# Understanding GitHub Actions

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# Introducing GitHub Actions

We can use GitHub for many parts of  
the SDLC

*Software Development Life Cycle*

Tasks can be automated



# Introducing GitHub Actions



**Automate different tasks**



**Event-driven, will trigger tasks**



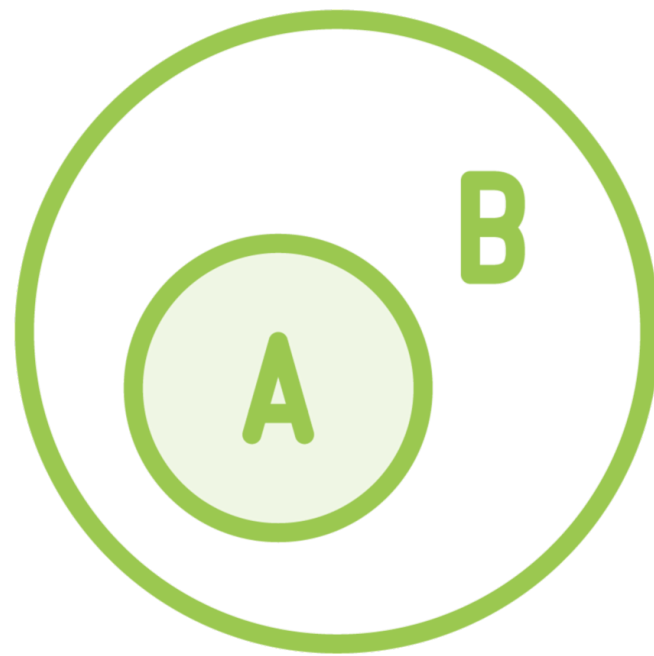
**Live in the repository**



**Based on YAML syntax**



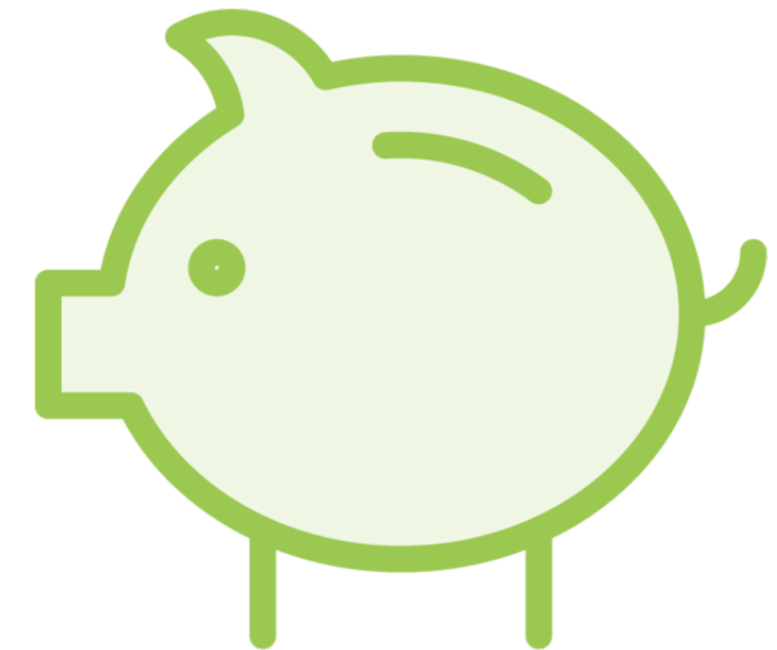
# Introducing GitHub Actions



**Part of GitHub**



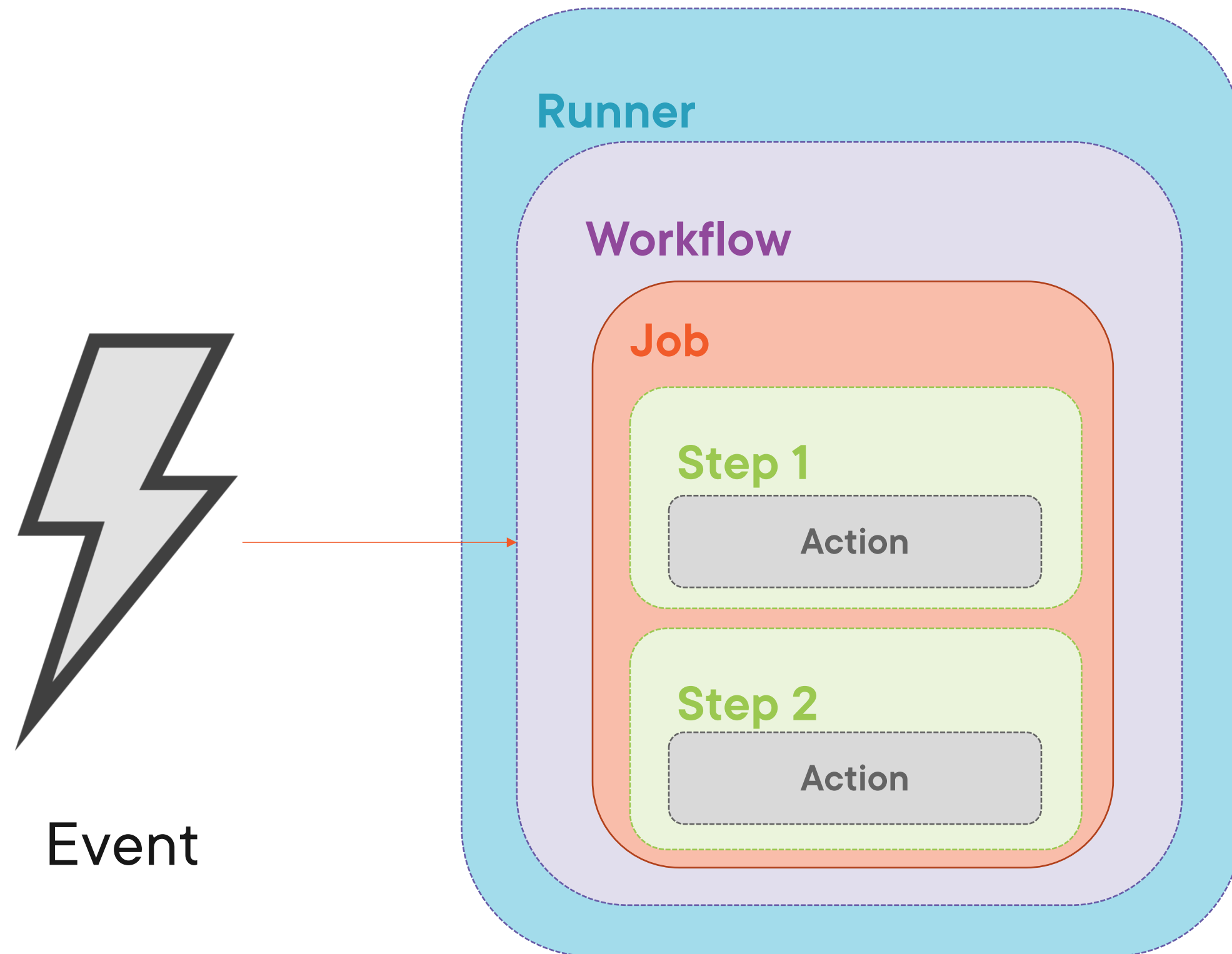
**Templates**



**Available in free plan**



# Components of GitHub Actions




# Creating an Action in YAML

```
name: first-github-action
on: [push]
jobs:
  check-bats-version:
    runs-on: ubuntu-latest
    steps:
      - uses: actions/checkout@v2
      - uses: actions/setup-node@v1
      - run: npm install -g bats
      - run: bats -v
```





# Creating Actions on GitHub



[Pull requests](#) [Issues](#) [Marketplace](#) [Explore](#)

[GillCleeren / refactored-telegram](#) Private

Unwatch 2 Star 0 Fork 1

[Code](#) [Issues](#) 7 [Pull requests](#) 1 [Actions](#) [Projects](#) 1 [Wiki](#) [Security](#) [Insights](#) [Settings](#)

Workflows

New workflow

All workflows

Label issues

install-netlify-package

sample-workflow

All workflows

Showing runs from all workflows

Filter workflow runs

6 workflow runs

	Event	Status	Branch	Actor
label tester				
Label issues #2: Issue #21 opened by GillCleeren				
Create label-issues.yml			main	
sample-workflow #3: Commit 737aea0 pushed by GillCleeren				
Create label-issues.yml			main	
install-netlify-package #2: Commit 737aea0 pushed by GillCleeren				
Create netlify.yml			main	
sample-workflow #2: Commit 0f78c95 pushed by GillCleeren				
Create netlify.yml			main	
install-netlify-package #1: Commit 0f78c95 pushed by GillCleeren				
Create sample-workflow.yml			main	
sample-workflow #1: Commit c35700a pushed by GillCleeren				



# Exploring the Results of the Flow Execution

The screenshot shows the GitHub Actions interface for a workflow named 'sample-workflow #1' in the repository 'GillCleeren / refactored-telegram'. The workflow is in a 'Completed' state, indicated by a green checkmark. The left sidebar shows the 'Summary' and 'Jobs' sections. The 'Jobs' section lists the job 'explore-first-github-workflow' with a green checkmark. The main content area displays the job details for 'explore-first-github-workflow', which succeeded 12 hours ago in 5s. The job log shows a series of steps, each with a green checkmark and a duration. The steps are: 'Set up job' (3s), 'Run echo "🚀 The job was automatically triggered by a push event."' (0s), 'Run echo "🌐 This job is now running on a Linux server hosted by GitHub!"' (0s), 'Run echo "💡 The name of your branch is refs/heads/main and your repository is GillCleeren/refactored-telegram."' (0s), 'Check out repository code' (1s), 'Run echo "💡 The GillCleeren/refactored-telegram repository has been cloned to the runner."' (0s), 'Run echo "💻 The workflow is now ready to test your code on the runner."' (0s), 'List files in the repository' (0s), 'Run echo "🍏 This job's status is success."' (0s), 'Post Check out repository code' (1s), and 'Complete job' (0s).

Search or jump to... Pull requests Issues Marketplace Explore

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Code Issues 7 Pull requests 1 Actions Projects 1 Wiki Security Insights Settings

✓ Create sample-workflow.yml sample-workflow #1 Re-run jobs

Summary

Jobs

✓ explore-first-github-workflow

explore-first-github-workflow succeeded 12 hours ago in 5s Search logs

- > ✓ Set up job 3s
- > ✓ Run echo "🚀 The job was automatically triggered by a push event." 0s
- > ✓ Run echo "🌐 This job is now running on a Linux server hosted by GitHub!" 0s
- > ✓ Run echo "💡 The name of your branch is refs/heads/main and your repository is GillCleeren/refactored-telegram." 0s
- > ✓ Check out repository code 1s
- > ✓ Run echo "💡 The GillCleeren/refactored-telegram repository has been cloned to the runner." 0s
- > ✓ Run echo "💻 The workflow is now ready to test your code on the runner." 0s
- > ✓ List files in the repository 0s
- > ✓ Run echo "🍏 This job's status is success." 0s
- > ✓ Post Check out repository code 1s
- > ✓ Complete job 0s



# Demo



**Creating a simple workflow**

**Exploring the results of the flow**

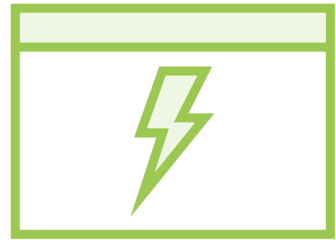


# Automating Tasks

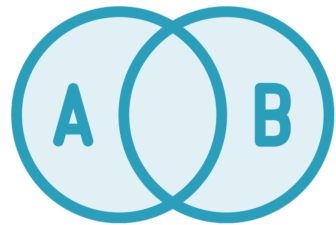
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# Types of Events



**Event within GitHub**



**Combination**



**Scheduled**



**Webhook events**



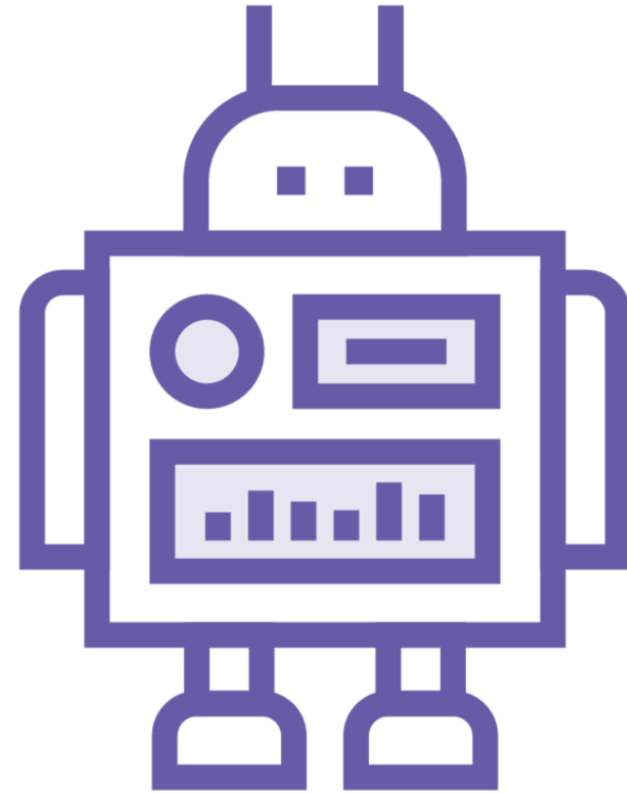


## Actions

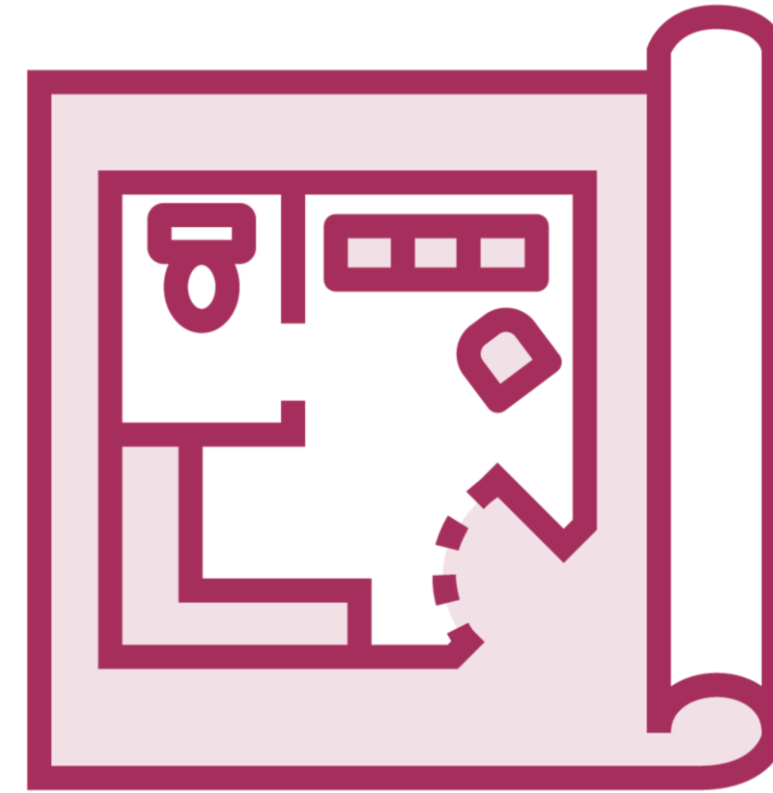
- Can create own actions
- Use community
  - Marketplace for actions



# Types of Workflows



**Automation**



**CI/CD**



# Understanding CI/CD

Continuous integration

Continuous deployment





# Demo



**Adding a label using a flow to an issue**

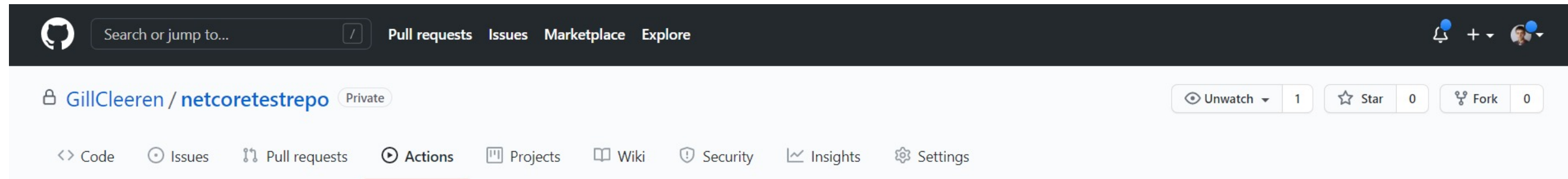


# Setting Up Continuous Integration

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# Using Templates



## Choose a workflow template

Build, test, and deploy your code. Make code reviews, branch management, and issue triaging work the way you want. Select a workflow template to get started.

Skip this and [set up a workflow yourself](#) →

### Workflows made for your C# repository Suggested

#### .NET

By GitHub Actions

Build and test a .NET or ASP.NET Core project.

[Set up this workflow](#)

```
dotnet restore
dotnet build --no-restore
dotnet test --no-build --verbosity normal
```

actions/starter-workflows

C#

#### .NET Desktop

By GitHub Actions

Build, test, sign and publish a desktop application built on .NET.

[Set up this workflow](#)

```
dotnet test
msbuild $env:Solution_Name /t:Restore /p:Configuration=$env:Configuration
$px_cert_byte = [System.Convert]::FromBase64String("${ secrets.Base64_Encoded_Pfx }")
```

actions/starter-workflows

C#



# Demo



## Setting up a build for .NET Core



# Summary



**Actions can be used to automate tasks within GitHub**

**Used often for setting up CI/CD**





**Up next:**  
Creating a wiki for the repo

