

# GitHub Actions Workflows, Jobs, and Steps

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GitHub Actions is a powerful automation tool that allows you to build, test, and deploy your code right from your GitHub repository. Understanding the key building blocks — workflows, jobs, and steps — is essential for effective automation.

## Workflows

A workflow is a customizable, automated process that you can define in your repository. It's typically used for continuous integration (CI), continuous deployment (CD), and other automation tasks. Here are the important aspects of workflows:

- **Trigger:** Workflows are triggered by specific events, such as pushes, pull requests, or scheduled events. You define when and how a workflow runs. See the [triggering-workflows](#) folder for more information about triggering workflows.
- **YAML Configuration:** Workflows are defined in a YAML file (e.g., `.github/workflows/main.yml`) within your repository. This configuration file specifies the workflow's name, triggers, jobs, and steps.

## Jobs

A job is a unit of work within a workflow. You can have multiple jobs in a workflow, and they can run in parallel or sequentially. Here are the key points about jobs:

- **Runs-On:** Each job specifies the runner environment, such as Ubuntu, macOS, or Windows. You choose the environment that best suits your workflow.
- **Parallelism:** You can configure jobs to run concurrently, which can speed up your workflow's execution time.

## Steps

A step is an individual task within a job. Steps are the smallest building blocks of a workflow and are where the actual work happens. Here are the important aspects of steps:

- **Name:** Each step has a name that helps identify its purpose. It appears in the GitHub Actions log to provide clarity during execution.
- **Run Commands:** Steps execute commands or scripts. These can include shell commands, script files, or even invoking actions from external sources (GitHub Marketplace, your own custom actions, etc.).
- **Inputs and Outputs:** Steps can have inputs and produce outputs, allowing them to communicate and share data with other steps.

## SimpleWorkflow

```
name: Simple Workflow
on: push
```

```
jobs:
  my-first-job:
    runs-on: ubuntu-latest
    steps:
      - run: echo "Hello World"
  my-second-job:
    runs-on: ubuntu-latest
    steps:
      - run: echo "Bye World"
```