

🔧 What is GitHub Actions?

GitHub Actions is GitHub's automation platform.

It lets you automate tasks like:

- Running tests
- Building and deploying code
- Creating releases
- Sending notifications
- Linting code
- Tagging versions

It's a feature provided by GitHub — kind of like a powerful engine that can run scripts for you automatically.

📄 What is a Workflow?

A workflow is a YAML file (e.g., `.github/workflows/deploy.yml`) that defines:

1. When it runs (e.g., on push, on PR, on schedule)
2. What it runs (jobs and steps)
3. Where it runs (e.g., Ubuntu, Windows, etc.)

A workflow is like a recipe or automation script that uses actions to do the work.

🧩 What is an Action?

An Action is a reusable unit of work inside a workflow.

For example:

- `actions/checkout@v4` → clones your code
- `softprops/action-gh-release` → creates a GitHub release
- `actions/setup-node` → installs Node.js

You can also write your own custom action, or use community-made ones.

🔄 Relationship Summary

Concept	What it is	Where it's used
GitHub Actions	The full automation platform	It's the system that runs everything
Workflow	A <code>.yaml</code> script that defines when/how to automate something	Lives in <code>.github/workflows/*.yaml</code>
Action	A small piece of logic that does a task (used inside workflows)	Used inside a <code>workflow</code> step

- ✅ Workflows use actions.
- ❌ Actions do not contain workflows.

💡 Example

Here's a simple workflow:

```
yaml
name: Example Workflow

on: push

jobs:
  say-hello:
    runs-on: ubuntu-latest
    steps:
      - uses: actions/checkout@v4      # This is an action
      - run: echo "Hello, world!"     # This is a custom shell step
```

✅ Final Analogy

- GitHub Actions = The factory 🏭
- Workflow = Your factory's instruction sheet 📄
- Actions = The machines/tools inside the factory 🔧

Let me know if you'd like a visual diagram or real project example next!

