✅ Day 12: GitHub Actions – Automate Everything

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📌 What Is It?

GitHub Actions is GitHub's built-in automation tool that lets you **automate workflows** for your repository.

From running tests on every push to deploying websites or sending notifications — GitHub Actions helps you **automate tasks directly in your dev flow**.

💡 Why It's Useful

- ⚙️ Automate CI/CD pipelines

- ✅ Run tests, builds, and deploys on every push or PR

- 📧 Send Slack/Discord/webhook notifications

- 📁 Generate release notes or tag versions

- 🧪 Trigger custom workflows using cron, labels, or comments

🛠️ How to Use GitHub Actions

1️⃣ Create a folder in your repo:

.github/workflows/

2️⃣ Inside that folder, add a .yml file (example: build.yml)

📜 Sample Workflow (Node.js CI)

name: Node.js CI

```
on: [push, pull_request]

jobs:
  build:
    runs-on: ubuntu-latest

    steps:
    - uses: actions/checkout@v3
    - name: Setup Node.js
      uses: actions/setup-node@v3
      with:
        node-version: 18
    - run: npm install
    - run: npm test
```

This runs every time you push or open a PR. It installs dependencies and runs tests on a clean Ubuntu environment 💡

🚀 Real Use Cases

- ⚡ Auto-lint your code on every commit
- 🧪 Run unit tests before merging
- 🚀 Deploy to GitHub Pages or Firebase
- 📦 Publish npm packages or Docker containers
- 📧 Alert your team in Slack on build failure

🧠 Pro Tips

- Use [GitHub Marketplace](#) to find 1000s of prebuilt actions

- Combine multiple jobs: test → build → deploy

- Reuse steps across workflows with **composite actions**

- Add caching to speed up builds

🔗 Resources to Explore

- GitHub Actions Docs: https://docs.github.com/en/actions

- Actions Marketplace: https://github.com/marketplace

- Starter Workflow Templates: https://github.com/actions/starter-workflows

🙌 Final Thought

"Don't repeat manual steps. Automate your workflow and focus on what matters — building."