CoGrammar

Welcome to this session:

Automation with GitHub Actions

The session will start shortly...

Questions? Drop them in the chat.
We'll have dedicated moderators
answering questions.

Safeguarding & Welfare

We are committed to all our students and staff feeling safe and happy; we want to make sure there is always someone you can turn to if you are worried about anything.

If you are feeling upset or unsafe, are worried about a friend, student or family member, or you feel like something isn't right, speak to our safeguarding team:

Ian Wyles
Designated Safeguarding Lead

Simone Botes

Nurhaan Snyman

Rafiq Manan

Ronald Munodawafa

Tevin Pitts

Scan to report a safeguarding concern

or email the Designated Safeguarding Lead:
Ian Wyles
safeguarding@hyperiondev.com

CoGrammar HyperionDev

Skills Bootcamp Cloud Web Development

- The use of disrespectful language is prohibited in the questions, this is a supportive, learning environment for all - please engage accordingly. **(Fundamental British Values: Mutual Respect and Tolerance)**
- No question is daft or silly - **ask them!**
- There are **Q&A sessions** midway and at the end of the session, should you wish to ask any follow-up questions. Moderators are going to be answering questions as the session progresses as well.
- If you have any questions outside of this lecture, or that are not answered during this lecture, please do submit these for upcoming Academic Sessions. You can submit these questions here: **Questions**

Skills Bootcamp Cloud Web Development

- For all **non-academic questions**, please submit a query:
  www.hyperiondev.com/support
- **Report a safeguarding incident: *www.hyperiondev.com/safeguardreporting***
- We would love your feedback on lectures: *Feedback on Lectures*
- If you are hearing impaired, please kindly use your computer's function through Google chrome to enable captions.

Learning Outcomes

- Explain what GitHub Actions is and its role in CI/CD
- Create a simple GitHub Action workflow
- Use GitHub Actions to build and deploy a React application

What is the primary goal of CI/CD?

A. Write cleaner code
B. Running applications in the cloud
C. Automating software development workflows
D. Making deployments faster but unreliable

Which of the following tools is NOT typically used for CI/CD

A. GitHub Actions
B. Docker Compose
C. Jenkins
D. GitLab CI/CD

What is CI/CD?

- **Continuous Integration (CI):** Automated testing and integration of new code changes.
- **Continuous Delivery (CD):** Ensures the latest version of code is always ready for deployment.
- **Continuous Deployment (CD):** Automates the release process.

Why CI/CD?

- Reduces manual errors
- Speeds up software delivery
- Ensures consistency and reliability
- Enables quick rollback in case of failure

Overview of Github actions

What is GitHub Actions?

- A **workflow automation** tool built into GitHub
- Uses **YAML configuration files** to define automation steps
- Can be triggered by events (push, pull request, etc.)

Key Concepts

- **Workflows**: Define automation processes
- **Jobs**: Independent tasks inside a workflow
- **Steps**: Commands executed within a job
- **Actions**: Prebuilt or custom automation scripts
- **Runners**: Machines that execute jobs

Setting Up a Github Actions Workflow

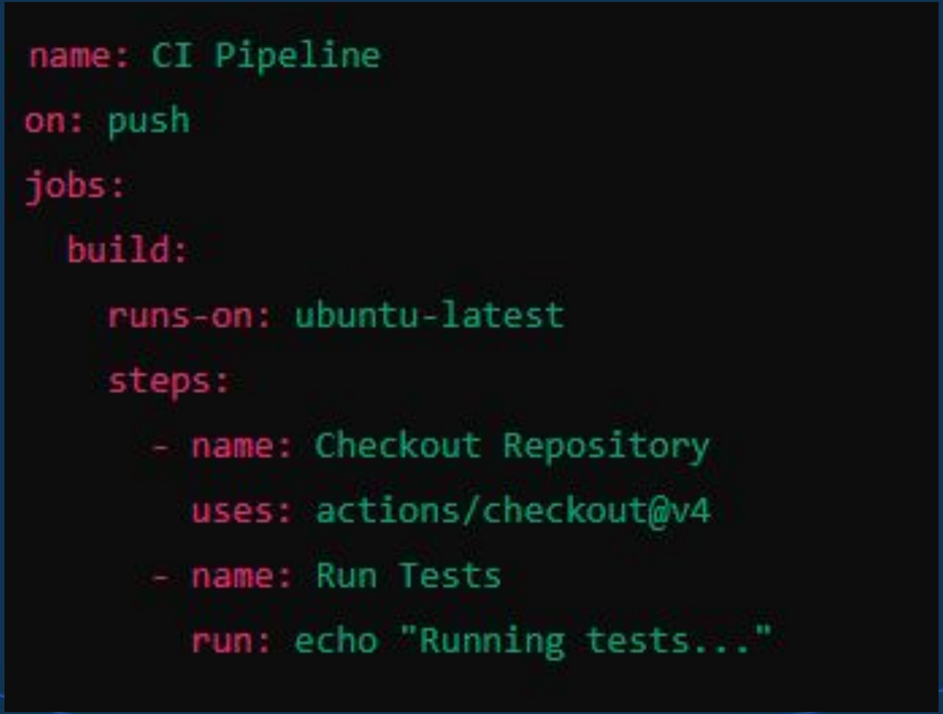
Step 1: Creating a Workflow File

1. In a GitHub repository, navigate to .github/workflows/.
2. Create a new .yml file, e.g., ci-cd-pipeline.yml.

Step 2: Writing a Basic CI/CD Workflow:

Visit next slide...

Example Workflow



```yaml
name: CI Pipeline
on: push
jobs:
  build:
    runs-on: ubuntu-latest
    steps:
      - name: Checkout Repository
        uses: actions/checkout@v4
      - name: Run Tests
        run: echo "Running tests..."
```

Example Explanation

❖ **name -** The name we give to the pipeline

❖ **on -** The repository event that will trigger the pipelines execution

❖ **jobs -** The set of steps that will be performed

❖ **build -** The name of the job that is being performed

❖ **runs-on -** The operating system for the VM that will be generated to run our pipeline

❖ **steps -** The operations that make up a single job

❖ **- name -** The name that is used to identify a specific step

❖ - **uses -** Imports tools that are required for a specific job

❖ **run -** Runs a command in the environments command line

Questions and Answers

CoGrammar

Thank you for attending

CoGrammar

SKILLS FOR LIFE
SKILLS BOOTCAMPS

Department for Education