

(TR-102) MASTERING THE SEMANTIC WEB –

Training Day 20 Report :

10 July 2024

Introduction to CI/CD Pipeline:

A CI/CD pipeline is a series of automated steps that software goes through to get from development to deployment. CI stands for Continuous Integration, and CD stands for Continuous Deployment (or Continuous Delivery).

- Continuous Integration (CI): Automates the process of merging code changes from multiple contributors into a shared repository, where automated builds and tests run to ensure the changes integrate well.
- Continuous Deployment/Delivery (CD): Automates the deployment of the code to production or staging environments after it passes the tests.

Why CI/CD Pipeline is used?

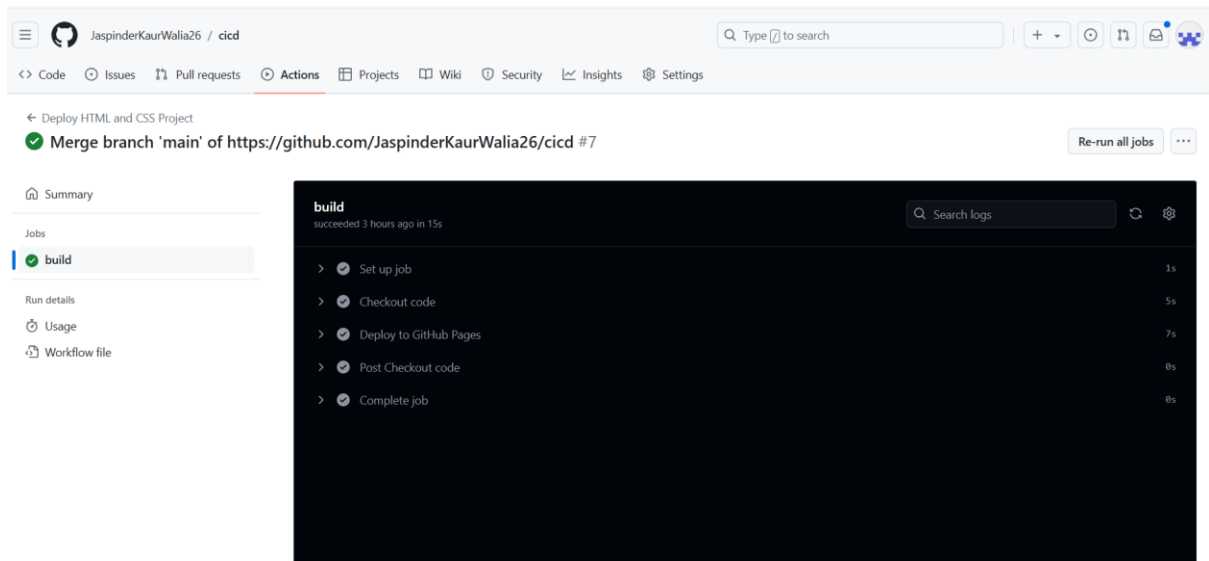
- Efficiency: Automates repetitive tasks, saving time.

- Consistency: Ensures the same process is followed every time, reducing errors.
- Quality: Automated testing catches issues early, improving code quality.
- Speed: Speeds up the release cycle, getting features and fixes to users faster.

Setting up a CI/CD pipeline using GitHub Actions:

- Create a GitHub Repository:
 - Go to GitHub and create a new repository.
- Add a Workflow File:
 - In the repository, create a .github/workflows directory.
 - Inside this directory, create a file called ci.yml (or any name can be used).
- Define the Workflow:
 - Open ci.yml and define the workflow.
- Commit and Push:
 - Commit the workflow file and push it to the repository.
- Automated Process:
 - Now, whenever user will push changes to the main branch, GitHub Actions will automatically run the steps defined in the workflow file.

Setup for CI/CD Pipeline:



The screenshot displays the GitHub Actions interface for a workflow named 'build' in the repository 'JaspinderKaurWalia26 / cicd'. The workflow is shown as 'succeeded 3 hours ago in 15s'. The left sidebar contains navigation links: Summary, Jobs (selected), Run details, Usage, and Workflow file. The 'Jobs' section lists the 'build' job with a green checkmark. The main area shows the job's steps: 'Set up job' (1s), 'Checkout code' (5s), 'Deploy to Github Pages' (7s), 'Post Checkout code' (0s), and 'Complete job' (0s). Each step is preceded by a green checkmark, indicating successful completion. At the top right of the workflow view, there are buttons for 'Re-run all jobs' and a three-dot menu.