

(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?

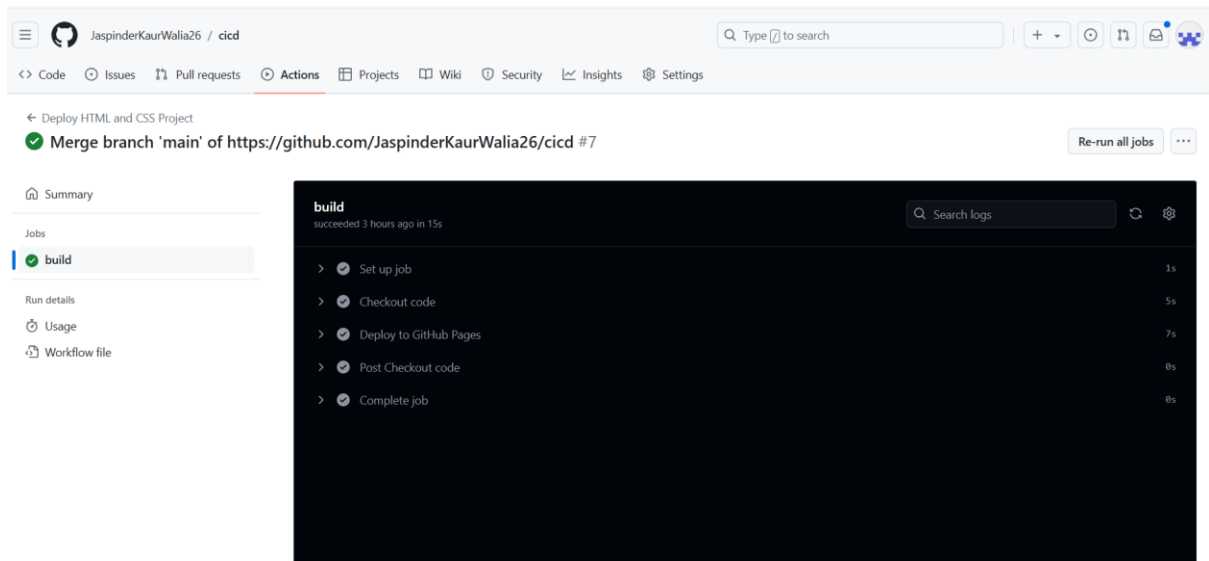
- Efficiency: Automates repetitive tasks, saving time.

- 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 repository named 'JaspinderKaurWalia26 / cicd'. The top navigation bar includes links for Code, Issues, Pull requests, Actions (highlighted), Projects, Wiki, Security, Insights, and Settings. Below the navigation bar, the workflow run is identified as 'Deploy HTML and CSS Project' and 'Merge branch 'main' of https://github.com/JaspinderKaurWalia26/cicd #7'. A 'Re-run all jobs' button is visible. The left sidebar shows the 'Summary' section with a 'Jobs' list containing a single job named 'build'. The main content area shows the 'build' job details, indicating it 'succeeded 3 hours ago in 15s'. A 'Search logs' input field is present. The job steps are listed as follows:

Step	Duration
> Set up job	1s
> Checkout code	5s
> Deploy to Github Pages	7s
> Post Checkout code	0s
> Complete job	0s