

## Development Environments & CI/CD – Interview Q&A;

### 1. Typical Development Environments

Development (Dev/Local):

Runs on the developer machine for rapid coding, debugging, and experimentation.

QA/Testing (SIT/UAT):

Integrated code from all developers is tested here for functionality and stability.

Staging (Pre-Prod):

Replica of Production used for final validation, UAT, and performance testing.

Production (Prod):

Live environment where end users interact with the application.

### 2. Why Staging Must Mimic Production

Staging prevents configuration drift by matching environment variables, Node versions, and database setups.

Ensures accurate performance testing under production-like load.

Validates deployment steps before pushing to Production.

### 3. Continuous Integration (CI)

CI reduces integration conflicts by merging code frequently.

Automated tests and linting detect issues early.

Ensures stable develop/master branches and automates repetitive checks.

### 4. Continuous Delivery (CD)

CD automates deployment steps to Staging and Production.

Enables fast release of critical hotfixes.

Ensures consistent, reliable, and error-free deployments.