

# DevOps Lifecycle

## 1. Planning

- **Objective:** Define the project scope, requirements, and goals.
- **Activities:** Sprint planning, backlog grooming, requirement gathering.
- **Tools:** Jira, Confluence, Trello.



## 2. Code

- **Objective:** Writing and managing the application code.
- **Activities:** Coding, version control, code review.
- **Tools:** Git, GitHub, GitLab, Bitbucket.



## 3. Build

- **Objective:** Compiling code and converting it into executable formats.
- **Activities:** Building code, managing dependencies, packaging.
- **Tools:** Maven, Gradle, Jenkins.



## 4. Test

- **Objective:** Automated and manual testing to ensure quality.
- **Activities:** Unit testing, integration testing, performance testing.
- **Tools:** Selenium, JUnit, TestNG, Postman.



## 5. Release

- **Objective:** Preparing the software for deployment.
- **Activities:** Versioning, release planning, configuration management.
- **Tools:** Jenkins, Ansible, Docker, Kubernetes.



## 6. Deploy

- **Objective:** Deploying the application to production or staging environments.
- **Activities:** Automated deployment, blue-green deployments, canary releases.
- **Tools:** Kubernetes, Docker, AWS, Azure, GCP.



## 7. Operate

- **Objective:** Managing and monitoring the software in production.
- **Activities:** Performance monitoring, system management, incident response.
- **Tools:** Prometheus, Grafana, Splunk, Datadog, Nagios.



## 8. Monitor

- **Objective:** Continuously monitor application performance and user feedback.
- **Activities:** Logging, alerting, performance analytics.
- **Tools:** ELK Stack (Elasticsearch, Logstash, Kibana), New Relic, PagerDuty.



## 9. Feedback

- **Objective:** Gathering user feedback and operational data to improve the software.
- **Activities:** Analyzing logs, user feedback, and performance metrics.
- **Tools:** Jira (for tracking feedback), custom dashboards, analytics tools.



## 10. Repeat

- **Objective:** Continuously improve and iterate on the software.
- **Activities:** Reviewing feedback, updating plans, and restarting the cycle.
- **Tools:** All previously mentioned tools.