

CI/CD for Android Developers

Course Duration: 24 Hours

Course code: Mobile Application Development

1. Course Overview

This course equips Android developers with the skills to implement Continuous Integration (CI) and Continuous Delivery/Deployment (CD) pipelines for Android applications. Participants will learn to automate building, testing, and deploying apps using modern CI/CD tools and best practices.

2. What you'll learn?

- Understand CI/CD concepts and benefits in mobile development.
- Automate Android builds and testing with Gradle and CI/CD tools.
- Implement version control workflows using Git and GitHub/GitLab.
- Configure CI/CD pipelines using tools like Jenkins, GitHub Actions, Bitrise, and CircleCI.
- Automate testing (unit, UI, integration) and code quality checks.
- Deploy apps to Google Play Store and internal distribution platforms.
- Monitor, debug, and optimize pipelines for efficiency.

3. Target Audience

- Android developers seeking automated build and deployment pipelines.
- DevOps engineers working with mobile applications.
- IT teams managing Android app releases and updates.
- Students and professionals preparing for modern mobile development workflows.

4. Pre-Requisites

- Basic Android development experience (Java/Kotlin, Android Studio).
- Familiarity with Git and version control workflows.

- Basic understanding of Gradle and Android build system.
- Knowledge of testing fundamentals (unit and UI tests) is recommended.

5. Course content

Module 1 – DevOps

- What is DevOps
- Why Use DevOps
- DevOps Lifecycle

Module 2 – GitHub

- Introduction to Git
- Working with Git
- Difference Between Git and GitHub
- Initialize Repository
- Commit Repository
- Working with Remote Repository
- Git Tag
- Git Branches
- Pull Requests

Module 3 – Introduction to App Center

- Introduction to App Center
- Creating an App Center Account
- Connecting App Center
- Crashing the Application
- Tracking All Kinds of Events
- Tracking Events with Better Context

Module 4 – Continuous Integration (CI)

- Why Use Continuous Integration

- Working with Feature Branches
- First CI Build – Android
- Adding Checks to Pull Requests
- Cleaning up the Connections
- Using Checks to Protect Branches
- Complete CI Flow

Module 5 – Continuous Quality (CQ)

- Introduction to Continuous Quality
- Prepare Solution for Tests
- Installing the App Center CLI
- Uploading the Android Tests
- Running Automatic Tests

Module 6 – Continuous Delivery (CD)

- Introduction to Continuous Delivery
- Creating an Android Distribution Group
- Configuring Android Continuous Delivery
- Installing from App Center
- Creating a First Manual Store Release
- Continuous Delivery to the Play Store
- Continuous Integration / Continuous Delivery