CHENNAI INSTITUTE OF TECHNOLOGY

(Autonomous)

COURSE REVIEW

Presentedby:

NARESH KUMAR N

Registration No – 24IT0105

B.TECH- INFORMATION TECHNOLOGY

Chennai Institute of Technology, Chennai – 69

INTRODUCTION

This presentation outlines my journey through the Android Basics with Compose
Course offered byAICTE in collaboration with Google. The course provided a comprehensive introduction to Android app development, covering both the theoretical concepts and hands-on projects. Key topics included:

- The course has equipped me with key Android development skills, enabling me to create scalable and robust mobile applications.

Android Studio setup Activity
lifecycle UI components
Kotlin programming
Navigation and layout design

Backend connectivity and data persistence

OBJECTIVE

Course Goals:

- Understandthe Android app architecture
- Build user-friendly and efficient mobile applications
- Learn and apply **Kotlin**, the primary language for Android Gain real-
- time experience using **Android Studio** Develop full-fledged apps
- with interactive UI and integrated backend

This course helped enhanced practical Learning, programming logic, and mobile development proficiency.

KEY RESPONSIBILITIES

- Setting up Android Studio and configuring emulators
- Building and managing UI layouts using XML
- Handling activity lifecycle and state management Implementing user interactions and navigation
- Writing Kotlin code to manage logic and UI control
- Debugging and testing Android applications Submitting hands-on assignments and quizzes

METHODOLOGY

The learning was structured with:

- Video tutorials and reading material
- Interactive quizzes and practical assignments
- Mini-projects at the end of modules A capstone project that combined all acquired skills

Each concept was reinforced through coding challenges, which helped solidify my understanding of real-time application development.

PROJECT IMPLEMENTATION

Title: DigiClassifier–Real-Time Image Classification App

- ✓ Developed a real-time image classification Android app using and **Jetpack Compose** **Google MediaPipe**. Enabled users to capture or select images and
- ✓ Designed a simple and responsive UI with Compose, ensuring **user-friendly interaction**.
- ✓ Integrated features like **live camera feed**, **state management**, and **result display**for a seamless experience.

Demonstrated practical application of Android development skills gained through the course.

TECHNOLOGIES USED

- **Programming Language:Kotlin**

  UsedastheprimarylanguageforAndroid development due to its concise syntax, safety features, and fullinteroperabilitywithJava.

- **UI Toolkit: Jetpack Compose**

  ModerndeclarativeUItoolkitfor building fast and responsive user interfaces with simplified code structure and dynamic updates.

- **IDE: Android Studio**

  TheofficialIDEforAndroid development, offering robust tools for coding, debugging, previewing UI, and testing apps efficiently.

- **Libraries Used:**

Room: For local database management using SQLite.
Retrofit: To handle API calls and fetch remote data.
DataStore: To store user preferences and small data securely.
MediaPipe: Integrated for real-timeimage classification.
Coil: Lightweight library to load and display images.

PLATFORM AND TASK

Platform: Tasks Performed:

- ✓ Google for Developers via Eduskills
- ✓ Builtappsusing**Kotlin**and **JetpackCompose**

Implemented components like Used **Room**and **DataStore**for data handling Fetched and displayed remote data using **Retrofit**and Applied **WorkManager**for background task scheduling **lists forms**, and **Coil**

Completed a final project (DigiClassifier) demonstrating all key concepts

,

EXPERIENCE AND LEARNING

EXPERIENCE:

- Workedonreal-world Android projects with modern development tools.
- Builtcompleteapps withfeatureslikeUI navigation,data storage,andimage processing. Created and tested a real-time app using **MediaPipe**for image classification.

LEARNING:

- Learned to design and build apps using clean architecture. Gained
- hands-on experience with **Jetpack Compose**, **ViewModel**, and **StateFlow**. Improved skills in testing, debugging, and performance
- optimization. Developed confidence in deploying functional Android
- applications.

CHALLENEGS AND SOLUTIONS

Challenges Faced:

- Understandingcomplextopics like state management and navigation

  Integrating real-time image classification with Compose

  Debugging background tasks and asynchronous operations

Solutions Implemented:

- Watched additional video lessons and referred to official documentation Practiced coding regularly and
- used Android Studio’s debugging tools Applied **ViewModel**, **StateFlow**, and **WorkManager**effectively
- to handle state and background work

CONCLUSION

The Android Development course gave me a strong foundation in building apps using Kotlin and Jetpack Compose. I learned how to create user-friendly, scalable apps by following modern Android architecture. Through the DigiClassifier project, I applied what I learned in a real-world scenario, which improved my coding, design, and problem-solving skills. Overall, this experience boosted my confidence and prepared me for future development projects.

THANK-YOU

NARESH KUMAR N

nareshkumarn.it2024@citchennai.net