Week 1: Getting Started with Kotlin

Session 1: Introduction to Android Development and Kotlin

- Overview of Android development
- Introduction to Kotlin programming language
- Setting up Android Studio

Session 2: Kotlin Basics and OOP Fundamentals

- Variables, data types, and operators
- Control flow (if, when, loops)
- Functions and lambdas
- Classes and objects
- Inheritance and interfaces
- Properties and methods

Week 2: Android Fundamentals

Session 1: Android Project Structure and UI Basics

- Understanding project structure
- Understanding the declarative UI paradigm
- Setting up a Compose project
- Basic compostables (Text, Button, Image, etc)
- Layout in Compose (Column, Row, Box)
- State Management basics
- Project: Building a Simple UI with Compose

Session 2: Activities, Intents, and Views

- Activity lifecycle
- Creating and navigating between activities
- Using intents to pass data
- Common views (TextInput, ImageView, etc.)
- Lists and LazyColumn
- **Project**: Unit Converter App

Week 3: Advanced UI and User Input

Session 1: Complex Layouts

- LazyColumns with data being passed in.
- **Project**: QuickNote App (Part 1)

Session 2: Navigation and User Input

- Introduction to NavHost and Navigation component on Compose
- Navigating between composable
- Handling user input
- Form validation
- **Project**: QuickNote App (Part 2)

Week 4: Data Storage and Networking

Session 1: SharedPreferences, SQLite, and Room

- Saving data with SharedPreferences
- Introduction to SQLite
- Setting up Room Database
- CRUD operations
- Integrating Room with LazyColumn
- **Project**: QuickNote App (Part 3)

Session 2: Networking with Retrofit

- Introduction to Retrofit
- Making network requests
- Parsing JSON responses
- **Project**:Netflix App (Part 1)

Week 5: Advanced Android Components

Session 1: Services, Broadcast Receivers, and Background Tasks

- Introduction to services

- Creating and using services
- Broadcast receivers and intents
- Introduction to WorkManager
- **Project**: Netflix App (Part 2)

Session 2: Firebase Integration

- Setting up Firebase
- Firebase Authentication
- Realtime Database
- **Project**: Instagram App (Part 1)

Week 6: Testing and Debugging

Session 1: Debugging, Error Handling, and Unit Testing

- Using Android Studio debugger
- Handling runtime errors
- Best practices for debugging
- Writing unit tests in Kotlin
- Testing Android components
- **Project**: Instagram App (Part 2)

Session 2: UI Testing

- Introduction to Espresso
- Writing UI tests
- **Project**: Instagram App (Part 3)

Week 7: Polishing and Publishing

Session 1: UI/UX Enhancements and App Performance Optimization

- Material Design principles
- Customizing UI elements
- Analyzing app performance
- Memory management
- Improving app performance
- **Project**: Finalize and polish projects

Session 2: Preparing for Release

- Signing the app
- Creating a release build
- Publishing on Google Play Store

Week 8: Major Project Development

Session 1: E-Learning App Development

- Finalize the design and architecture of the E-Learning App
- Implement core features such as browsing courses, purchasing courses, and tracking course completion.
- Work on integrating any additional features such as user authentication or payment processing

Session 2: Testing, Debugging, and Presentation

- Thoroughly test the E-Learning App
- Debug and fix issues
- Present the E-Learning App
- Review and receive feedback
- Reflect on learning and future steps