🟢 **Week 1 — Getting Started with Android & Kotlin**

* What is Android? Versions, architecture, and ecosystem
* Android Studio installation and setup
* Emulator vs real device testing
* Android project structure (manifest, res, java, gradle)
* Introduction to Kotlin programming

Variables, data types, and operators

Basic input/output

Conditionals and loops

Hands-On:

* Create “Hello World” app
* Write simple Kotlin console programs (sum calculator, loops)

Mini-Project:

* ✅ *Simple Calculator App* (basic arithmetic in Kotlin)

**Week 2 — Kotlin Fundamentals & Android UI Basics**

* Functions and parameters
* Classes, objects, and inheritance
* Collections (Lists, Sets, Maps)
* Android Layouts (LinearLayout, ConstraintLayout, FrameLayout)
* Views: TextView, EditText, Button, ImageView
* XML basics and view hierarchy

Hands-On:

* Design static UI with XML
* Handle Button clicks using setOnClickListener()

Mini-Project:

* ✅ *Login Screen UI* (Email + Password fields, Login button, Toast message)

**Week 3 — Activities, Intents & App Navigation**

* Activity lifecycle (onCreate, onStart, onResume, etc.)
* Explicit & Implicit Intents
* Passing data between Activities (Intent.putExtra)
* Back navigation & finishing activities
* Toasts, Snackbars, and basic dialogs

Hands-On:

* Create multiple screens (e.g., Home → Profile → Settings)
* Share data via Intent

Mini-Project:

* ✅ *User Profile App* (enter data on one screen, show details on another)

🟡 **Week 4 — Lists & RecyclerView**

* RecyclerView introduction
* Adapter & ViewHolder pattern
* LayoutManager (Linear, Grid)
* Click listeners for list items
* CardView design

Hands-On:

* Display static data list
* Load data from Kotlin model classes

Mini-Project:

* ✅ *Contact List App* (display name, phone, and image in RecyclerView)

🟡 **Week 5 — Data Storage (SharedPreferences, SQLite, Room)**

* SharedPreferences for simple key-value storage
* SQLite Database basics
* Room Database setup (Entities, DAO, Database class)
* CRUD operations (Create, Read, Update, Delete)

Hands-On:

* Save user preferences (dark mode toggle, etc.)
* Build Room database

Mini-Project:

* ✅ *Notes App* (add, view, delete notes using Room DB)

🟡 **Week 6 — Networking & APIs (Retrofit + JSON)**

* What is REST API
* Understanding JSON
* Retrofit library setup
* GET requests and parsing JSON
* Displaying API data in RecyclerView
* Handling errors and loading states

Hands-On:

* Call a public API (like OpenWeather or News API)
* Display response data in a list

Mini-Project:

* ✅ *Weather App* (fetch current weather data using OpenWeather API)
* Jetpack overview

**Week 7 — Jetpack Components & Modern Android**

* ViewModel and LiveData
* Navigation Component
* Fragments (replacing multiple activities)
* BottomNavigationView
* ViewBinding & DataBinding

Hands-On:

* Convert multi-activity app to Fragment-based navigation
* Use LiveData for dynamic UI updates

Mini-Project:

* ✅ News App (multiple fragments for categories, using ViewModel + LiveData)

🔵 **Week 8 — Firebase, App Deployment & Final Project**

* Firebase setup in Android Studio
* Firebase Authentication (Email/Google Sign-In)
* Firestore Database (store/retrieve user data)
* Firebase Storage (upload images/files)
* App signing, APK vs AAB
* Play Store publishing process

Hands-On:

* Build a simple Firebase login and save user data

Final Project:

✅ *Chat App / Todo App with Firebase*  
— Login + Add tasks/messages + Sync across devices