

Android App Development

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About Course

Android App is a **Software Designed to run on an Android device or emulator**. The term also refers to an APK file which stands for Android package. ... Android apps can be written in Kotlin, Java, and C++ and are run inside Virtual Machine.

Android App Development Curriculum

Introduction of Android Development

Learning Objectives : In this module, you will learn the basic architecture of Android platform, download the tools used by any Android application developer and use them to create your first Android app. You will also learn how to run android application on emulator & on your own device. We will deep dive into Android application lifecycle and understand the working of event listener

Topics :

Basics of Android, Android Architecture, Android Studio Setup - Modifying project parameters in Android Studio and Gradle build files, Adding dependencies in Android Studio and Gradle build files, DDMS, Activity Lifecycle, Event Listener

Android Layout, Widgets and Implementing Event receivers

Learning Objectives : In this module, you will learn to create a user interface by using the visual tools and the underlying XML. We will deep dive into core of Android layouts and impressive and easy to code android widgets along with Implementing Event Receivers.

Topics : LinearLayout, RelativeLayout - Adding a widget to the user's home screen and updating active home screen widgets, FrameLayout, TableLayout, WebView, CheckBox , RadioButtons, Spinner, AutoCompleteTextView, CardView, TimePicker, DatePicker Dialog, BroadcastReceivers (System & Custom), LocalBroadcastManager

Activities, Intents, Fragments and notifications

Learning Objectives : In this module, you will be able to create applications with multiple activities and learn to share information between multiple activities with the help of Intents and fragments. Also you will be able to generate notifications in android.

Topics :

Activities - Persisting application state during configuration changes and creating activity hierarchies, Fragments, Explicit and Implicit intents - Navigating between activities using intents, Using NotificationCompat to Show Notifications - Using PendingIntent to package and send a delayed action, Services for executing background work, Using JobScheduler for syncs and periodic tasks, and Scheduling time sensitive tasks with alarms

Customizing Widgets and Constructing Options Menu

Learning Objectives : In this module you will learn to implement different collections widgets available in android like GridView, ListView and RecyclerView. We will also learn to implement one of the four essential components of Android development, which is Broadcast Receivers. We will also deep diving into Android canvas framework, which lets you draw different shapes on the screen.

Topics : GridView, ListView - Building layouts using XML and Java code and Grouping common UI design elements with styles, RecyclerView - Handling item touch interactions in a RecyclerView, DrawerLayout - Providing alternative resources for device configuration changes, Canvas & Paint - Customizing the application theme, Extending framework UI components to create custom views and validating application layouts properly respond to accessibility events, Constructing Option menus for action bar navigation

Storage, Media and Animations

Learning Objectives : In this module you will learn most important persistent frameworks in Android system, which is Shared Preference, and Android File System. We will learn to implement different types of animations provided by android system to create impressive android applications.

Topics :

Internal & External File Storage, SharedPreference - Creating settings UI using the preferences framework and reacting to changes in a Shared Preferences instance, MediaPlayer & Video View, Tween Animation, View Property Animation, Frame Animation

WebServices.

Learning Objectives : In this module, at times you will need to perform tasks that should prevent blocking the user from performing other

tasks in the application. Here is when services and broadcast receivers come into play. You will learn the highly acclaimed API of Android framework, which is AsyncTask. We will also learn to implement SOAP Services. You will understand the concept of Retrofit library used for performing these Asynchronous tasks.

Topics :

An overview of SAS, Application of SAS, SAS Environment, Interface, Components, SAS Libraries, Programs, Data Step, Proc Step, Key Concepts - Data Set, Descriptor, Portion, Data Portion, Observation, Variables etc

Location and Google Maps

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Database Framework and Third Party Libraries

Learning Objectives : In today's world what app doesn't make use of saving and retrieving data? You will be learning most common mechanisms for doing this. You will learn to use android SQLite framework. Also you will see how the data can be saved in database asynchronously. After completing database we will learn how to use few of the most famous and efficient third party libraries in our application like image loading, database implementation while writing minimal code.

Topics :

Using SQLiteOpenHelper - Accessing static bundled data in assets (e.g. premade databases, config files), SQLite Data Types, Mapping between Table & Widgets using CursorAdapters, Async CursorLoader , Palette for extracting colors from images, Picasso for Image Loading & Caching, ButterKnife for Injecting Views, TimesSquare for showing Calendar View, Cupboard for ORM

Localization, Sensors and Social Media Integration

Learning Objectives :

Facebook, DropBox & Google Drive are some of the essential applications which are present on almost all user devices, we will learn to integrate them in our application. We will be learning Single Sign on, uploading files to Google Drive. We will also learn how to target international audience using localization and various sensors available in Android devices like compass, Accelerometer etc.

Topics :

Localization, Facebook Integration, Dropbox Integration, Google Drive Integration, Exploring Android Sensors

End-to-End App Development and Publishing

Learning Objectives : In this final lesson, you will learn to use Android Studio much more efficiently; we will create one live application end to end to revise the concepts we learnt earlier. We will be signing the application using our newly generated keystore and then you will learn how to submit an application to Google Play to share with the world.

Topics :

Debugging Applications, End to End App Development including writing and executing automated unit tests on the local JVM, writing and executing automated instrumentation tests on an Android device, using the system log output (andlogcattools) to trace code execution, locating an error from the stack trace of an uncaught exception and using Strict Mode to locate and report threading violations and leaks,

Using Proguard to obfuscate applications, Generating Signing Keys, Publish the application on Google Play Store (Live Demo), Doubts & Queries Using Proguard to obfuscate applications.