Hello Everyone, in this video, you will learn about Android Studio, the android development IDE, it's components, and various files, which play a very important role in Android app development.

One of the reasons behind the popularity of the android operating system is due to its highly ergonomic applications. The availability of free tools to develop android apps makes it accessible to more developers and users. Android Studio is a well-known IDE to develop android Apps. Android Studio contains three sections: SDK Location, Project and Modules. **SDK Location which** sets the location of the JDK, Android SDK, and Android NDK that your project uses. **Project** Sets the version for Gradle and the Android plugin for Gradle and the repository location name. **Modules** Allow you to edit module-specific build configurations, including the target and minimum SDK, the app signature, and library dependencies.

Let's see what are Android NDK and SDK? The Android NDK is a toolset that allows you to implement parts of your app in native code using languages like C and C++. Certain kinds of apps find it useful to reuse code libraries written in these languages. Whereas, Android SDK tool is an important component of Android SDK. It Includes a complete set of development and debugging tools. Below are the SDK developer tools:
Android SDK Build tool.
Android Emulator.
Android SDK Platform-tools.
Android SDK Tools.

Here you can see few difference between Android SDK and NDK
SDK Uses Java as Programming Language whereas NDK Uses C/C++
SDK Uses APIs for Performance whereas NDK Uses Complexity Functionality
SDK is Used to develop apps for One Platform whereas NDK is Used for Multiplatform
SDK is used because it includes a Rich set of Libraries and Automatic Memory Management whereas NDK is Used because C/C++ Code can be ported to Android and can develop apps for multi-platforms like iOS and Android

Android Studio Project files are organized by modules and file types to simplify navigation between key source files of your project, hiding certain files or directories that are not commonly used.
Within each Android app module, files are shown in the following groups:

Manifest	contains the AndroidManifest.xml
java	contains the Java source code files, separated by package names, including JUnit test code.
Res	Contains all non-code resources, such as XML layouts, UI strings, and bitmap images, divided into corresponding sub-directories.

We will learn about few of these files later in this video.

When you select **Project** view, you can see a lot more files and directories. The most important of which are the following:

build/	Contains build outputs.
libs/	Contains private libraries.
src/	Contains all code and resource files for the module in the following subdirectories:
android Test/	Contains code for instrumentation tests that run on an Android device.
main/	Contains the "main" source set files
AndroidManifest.xml	Describes the nature of the application and each of its components
Java/	Contadins Java code sources.
jni/	Contadins native code using the Java Native Interface (JNI).
gen/	Contains the Java files generated by Android Studio, such as your R.java
res/	Contains application resources,
assets/	Contains file that should be compiled into an .apk file as-it- is.
build.gradle (module)	This defines the module-specific build configurations.
build. gradle (project)	This defines your build configuration that apply to all modules.

The android applications can be identified by their extensions. apk. It stands for **Android Application Package**. These files are compressed archive files, which contain other files and folders.
Let's understand some of the important files used or created during Android app development. AndroidManifest.XML file holds most of the configuration details about the app. It also includes the package name, details about the app components that are used in the app, security settings for each app component, and permissions that are requested by the application, classes.dex file contains the Dalvik Bytecode generated from the source code This DEX file is executed on the device when the app runs.

resources. arsc file holds the compiled resources and The Res folder consists of raw resources that are required by the application. For example, the app icons

The assets folder allows a developer to place the files of his interest such as music, video, preinstalled databases, and so on. These files are bundled with the app being developed META-INF folder contains the application certificate along with the SHA1 digests of all the files used in the application.

Thank You.