

# Development of Native Mobile Application Using Android Studio for Education and Learning Glimpse of Cross Platform Apps

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## ABSTRACT

This paper describe about the EDU application developed using Android Studio new version. It also include about the Cross Platforms on which development of android and IOS both platforms application can be done. Cross platforms Paper also includes an example of Cab application which will show its working and its uses. ADU Application is an Android Application which is build in Android Studio Dolphin (2021.3.1). Android Studio is a official integrated development tool or environment for Google's Android operating system. It is build on Jet Brains' IntelliJ IDEA software. The main motive of building this Application is to provide employment and also make peoples life easy. In this Application number of services available, so the customer can easily select the services..

**Keywords:** Android Studio, EDU Application, Cross PlatformApplication.

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## INTRODUCTION

Now a day's everyone is in a need of smart phones majorly people uses androids phones for day to day communication. Many applications are developed for unlimited fun for people lives and the android system has become popular in the market of smart phones. Paper includes all about the ADTS application development and difference between cross platform apps and native apps. Android is a operating system used for the smart phones based on android and for development of android application, android studio tool is used. It is developed by Google. On other hand Cross-platform mobile development refers to the development of mobile apps that can be used on multiple mobile platforms with a single coding. There are lots of cross-platform tools which are available online nowadays being the major challenge understand which one is the best to achieve the goals of a certain user or company. Moreover, cross-platform tools are still evolving tools have flaws and limitations, but represent a straight forward solution to solve the platform fragmentation problem. A more often application of the MDE concepts in this area may represent a good solution not only to develop cross-platform apps, but also to ease the development and captivate a larger number of users through the use of domain concepts. As future work, an extension to this survey can be made, namely increasing the setof analyzed toolsand comparison factors [1].

## CROSS PLATFORM APPS AND NATIVE APPS

Now days 99.6% of phones runs on either IOS or Android. Companies now treat mobile apps as a channel for raising their brand and advertise more for the marketing purpose about the apps. A native mobile app is an application which only looks for particular operating system by using their IDE and SDK. Native apps have the ability to use device-specific hardware and software and can provide quality with huge performance rates. The advantages of native mobile apps include – High performance, Ultimate user experience and Greater app store visibility [3]. A cross platform application isa mobile app which is compatible with multiple operating systems and can therefore run on any smart phones or tablets. The advantages of cross platform mobile app include:

Table No. 1

	Native	Cross-Platform
Multiple Support	OSNo	Yes
User Interfacd Quality	High	Medium to High

<b>Cost</b>	High	Medium
<b>Ownership</b>		
<b>Application Update</b>	Native Market	Native Market
<b>Application Maintenance</b>	High	Medium
<b>Development Language</b>	Java, C, C++, Objective C++	Java, HTML, CSS, JavaScript

- Shorter Development time: It will need development or coding for one time and it will support the entire applications platform.
- Cost- effectiveness.

### METHOD

The application which is discussed in this paper is EDU Application whose name is Abhinav Driving And Training School. For develop this app platform used is 3.1-7.0.x and the language used is JAVA and XML. SQLite and Firebase is used at the backend side.

The first step is to download the new version of android studio that is 3.1 with its android SDK and android Virtual Device. After installing the studio and its setting up its environment, API level setting has been done. The procedure of setting API level is New click on file>new>New project to create a new project. In the Create, click on new project window, and enter the belowgiven values-

Application Name :- **ADTS**  
 Company domain: 'logitrix'

These all data will be used to create the package name for example- com. adts This will include all the data of the development of android, it is said to be android package file which is needed to upload on the google play store. At the last,enter the path to save the file of application.

If developer wants to create a new application with another new requirements, then developer need to choose Empty Activity for the project template. Click on Next. Accept the Default Activity name (Main Activity). Click Finish. These all are said to be android package file which you need to beuploadto the Google play store.

In the last field you will enter the path where you want to save. If you want to create your application according to you, so you need to select the blank activity from the activity module. Like this Activity you will add more things to your application which you want to show. When you open your application in Android Studio you have to See two file, first one is 'activity\_main.xml' and the other one is 'content main.xml'. Basically both do the same Thing, but the activity\_main.xml contains the basic layout when you selected Basic Activity. In content\_main.xml you can edit the content.

In Android there is a bunch of option called 'Widgets' in which you can drag and drop things. In Android Studio, it is not showing XML code, but rather a rendering how the layout will appear on the screen. If you want to define the behavior of your application then you need to open MainActivity.java. You have found those tabs under Application>Java. After setting your code or layout design you need to run your application. First, you test your application you can run on Android Virtual Device called Emulator. After successful testing you need to test your application on a real device. So first you connect yourdevice to your development machine with USB cable. Open Developer option and then enable USB debugging option on your device. After that, In Android Studio, you can click the application module in the project window and then click on Run in the toolbar. In the Select Deployment Target window, you will select your device and then click OK button. Android Studio installs the application on your connected device and starts it. Now you will see the application running which you have created on your device.

Android Activity Lifecycle is controlled by 7 methods ofAndroid App Activity class.

- **On Create:** Called when activity is first created.
- **On Start:** Called when activity is becoming visible tothe user.
- **On Resume:** Called when activity will startinteracting with the user.
- **On Pause:** Called when activity is not visible to theuser.
- **On Stop:** Called when activity is no longer visible tothe user.
- **On Restart:** Called after your activity is stopped, priorto start.

- **On Destroy:** Called before the activity is destroyed.

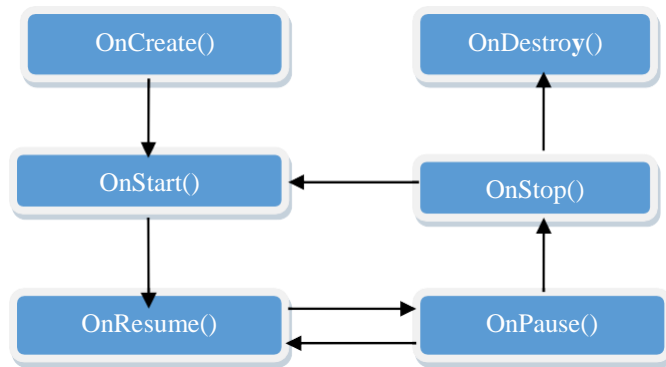


Figure1. Activity lifecycle

Intent is used as a message to move from one Activity to Another in a proper way.



Figure 2. Android Intent to navigate from oneactivity to another

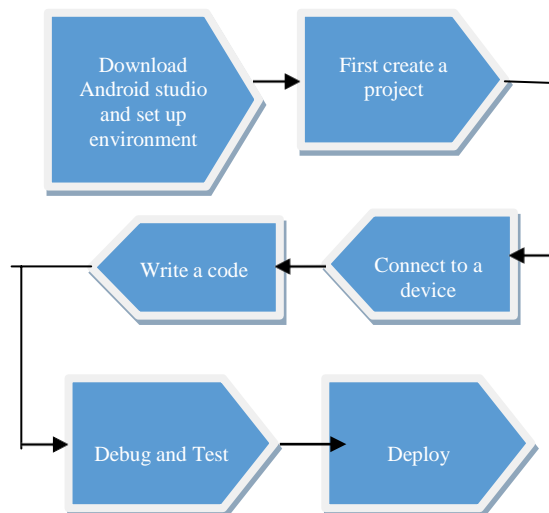


Figure 3. Process to build an Android app

**DESIGN MODULES OF ADTS APPLICATION**

Application divided into two phases one is USER and anotheris ADMIN:

**A. User Side:**

User side includes splash screen, registration screen, home screen with menu bar, payment gateways. Below are the details of the categories.

**Splash Screen**

Initially, when android application is started, at a very first splash screen has been opened, which will blink for 30 Sec. Splash screen includes application names with its logo. Basically android studio tool has inbuilt feature of the splash screen and after selecting the splash screen module it directly opens the inbuilt design of the screen which can be changed according to the requirements.

**Registration Screen**

After splash screen, the next screen will be a registration screen. The user has to register himself for the further process, registration screen includes full name, email Id, Mobile number and full address. Then after clicking on Proceed button, the next screen will open which is a search screen. If the user forgets the password, then he will get

forget password link on the registered email id by which user can update the password.

### **Home Screen/ Menu Screen**

Home screen will open from the left side of the application, which includes different different options for the users to open. Home screen contains registered logo and user name with his contact number which user can edit as per the need. .

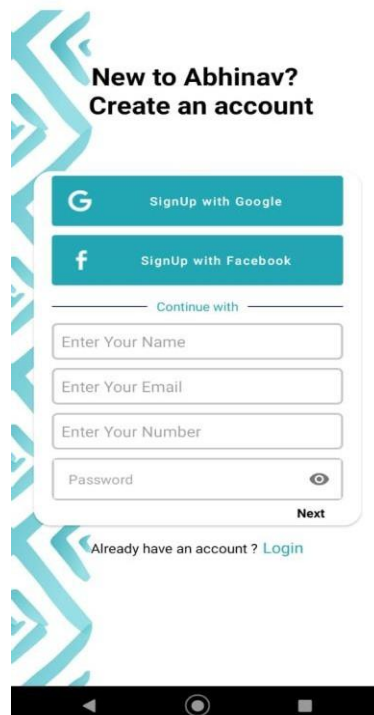
### **Payment**

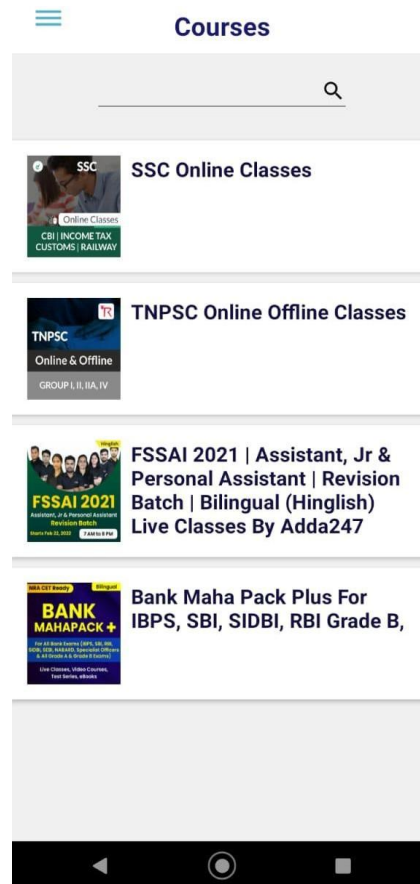
User can book purchase any available course option for online payment of fares, Payment gateway has been used in this application which include BHIM, PAYTM, PAYUMONEY etc. user can use this all payment gateways forthe online payment.

### **Splash Screen**



### **Login Screen**





## CONCLUSION

EDU application made the life quite easier. Some apps even learning drivers within month. .

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