

All in one App for College Certificates and OD by Kotlin Programming Language in Android Studio

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ABSTRACT

This paper proposes a new idea to application. In existing system there is no particular app for students detail information about certificates and their original degree. In this paper, create an application by using a new language Kotlin, it is similar as java but it having lot of advantages than compare to java. In any university there is no website or app for applying certificates and original degree. Kotlin language support in android developing application in easy manner.java programming language is a widely used language for the development of android applications. However recent approach proves this java suffers from certain drawbacks. Kotlin language can reduce compilation time, execution time and increase conciseness when integrated with java.

Keywords : Android, Kotlin, Java, Application, Original Degree, Certificates.

I. INTRODUCTION

The goal of this paper is to give application for college certificates and original degree applying process. Basically, more people use smart phone. They can download applications from app store, it is easy to carry and applying student certificates rather than applying certificates in their college. It is very long process after compilation of their courses. Everyone go to their college, waiting for the principal signs, pay the challan in nearer bank, fill the application form, instead of this just apply to their mobile phones using an application. Here, an application developing by using kotlin language in android studio.

The rest of this paper is organized as follows. Section 2 describes the existing system, disadvantages. Proposed systems, advantages are given in section 3.conclusions are finally drawn in section 4 along with future reference.

II. EXISTING SYSTEM

In existing system there is no proper website or application to applying student certificates rather than applying certificates in their college. It is very long process after compilation of their courses. Everyone go to their college, waiting for the principal signs, pay the challan in nearer bank, and fill the application form.

Disadvantages:-

1. Time taking process, go to college and applying for their certificates.
2. Everyone is busy with their works, at that time it is risky.
3. Java is one of disadvantage in android development, technology changes day by day.
4. App get struck by using java language.
5. Not portable.

III. PROPOSED SYSTEM

In proposed system , developing application an both certificates and original degree by kotlin programming language in android studio .To overcome the existing technology, compare to java kotlin language is best because now a days technology increase rapidly, so every best language having some disadvantages, to overcome those problems, kotlin is introduced after the research.

Developing an app, it's portable to everyone, everyone having mobile phones and apps in their mobile phones, so it is reached fastly. In recent, no application for that.

Android:

Android is a Linux based operating system designed especially for touch screen mobile devices and smart phones and tablet computers .This project is Initially developed by An- droid, Inc., which Google backed financially later . Android was unveiled in 2007 along with the open handset alliance: an association of hardware, software, and telecommunication companies devoted to

Advancing open standards for mobile devices. Android is a platform for software development kit

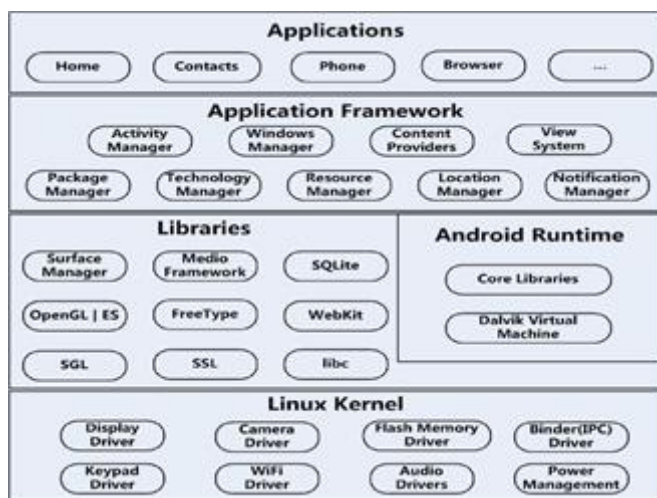


Fig 1. Android Architecture

(SDK) an application framework and key applications. Android is an open source. Most parts of the Android application code is released by the Google under apache license. This open source code and permissive license make users allow to modify the software and is distributed by the device manufactures, and also allows to build new versions of android. One of those modified versions called Cyanogen mod. The first commercially available phone to run android was HTC dream.

The process of developing an application is

Step 1: install android studio 3.0 step 2: make design for an application using xml (UI) user interface.

Step 3: write code for user interface by using kotlin language. Step 4: connect the database by using SQLite database

Step 5: finally deploy the app in Google play store.

Software requirements:

Android SDK

The Android SDK provides the API libraries and developer tools necessary to build, test, and debug apps for Android. For a new Android developer, it is recommend to download the ADT Bundle. It includes the essential Android SDK components and a version of the Eclipse IDE with built-in ADT (Android Developer Tools) to streamline Android app development.

ADT bundle includes the following

- Eclipse + ADT plugin
- Android SDK Tools
- Android Platform-tools
- The latest Android platform
- The latest Android system image for the emulator

The entire application written on Android may not consists of the native code (programming code that is configured to run on a specific processor). Most parts of the Android API can be accessed through only

java code. We need java skeleton for invoking the native functions .These functions can be invoked only through JNI(Java native interface) .JNI allows you to load shared C/ C++ libraries into Java applications at run time .In the application body you have to specify the signature of the methods without their body. The method has to be marked with a native keyword if it is not implemented in java, but in native code.

Kotlin:

Kotlin (Android_and_Kotlin) is a statically-typed programming language that runs on the Java Virtual Machine and also can be compiled to JavaScript source code. Its primary development is from a team of Jet Brains programmers based in Saint Petersburg, Russia (the name comes from Kotlin Island, near St. Petersburg).

While Java is one of the world's most widely used programming languages and the official language of Android development, there are many reasons why Java might not always be the best option for your Android projects. Java was one of the most usable languages, back in its heyday. But today, and the Java I use on Android doesn't even have support for lambdas, method references, streams, try-with-resources (min SDK \geq 19). I still have to use the java time APIs from the old Java 6/7 worlds. One of the biggest flaws in Java is the way it handles "null," leading to the dreaded NullPointerException (NPE), popularly known as The Billion Dollar Mistake).

Developers love clean, concise code. Less code takes less time to write, less time to read, and is less susceptible to bugs. But with Java, you must write a lot of code to get even the simplest things done. You've probably already experienced this if you're an Android developer but Kotlin is exactly opposite to java. Advantages of Kotlin

1. Interchangeability With Java

You can do java and Kotlin code existing side by side in the same project. Compiler support both cord to compile. User will able to know which part of your

project is written in java and which part are written in kotlin.

If you have project in java which is already working on you can trial kotlin in a small part of the project without affecting the rest of your code base. If one you decide to continue with kotlin, you can either migrate the hold project existing java code to kotlin one file at a time.

2. No NULL Pointer Exceptions

It's a most common reason for crashes in our application.

It's most time consuming process to fix all of the NullPointerException. It's an also boring task. In the kotlin you don't need to worry about null Pointer Exceptions because Null Safely is baked into kotlin type system.

3. Easy to Learning

Kotlin is an enhancement of Java.

If you want to create a new class in kotlin is very similar to java.

```
class MainActivity : AppCompatActivity() {  
    override fun onCreate(savedInstanceState: Bundle?) {  
        super.onCreate(savedInstanceState)  
        setContentView(R.layout.activity_main)  
        println("Hello Akshay!")  
    }  
}
```

How to Install Kotlin in Android Studio

Following some Step to Install Kotlin in Android Studio.

Step 1: Create Project

Step 2: Go To File Menu -> Select New Project Option. Following Screen is Appear.

Step 3: Click on Next Button after Give the Application Name and Project Location. Select the form

Factors your app will run on

Step 4: Click on Next Button. Select Activity Form The List.

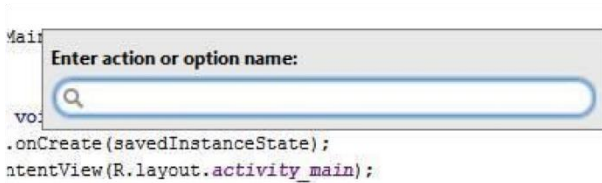
Step 5: Click on Next Button. Give the Activity Name.

Step 6: Click on Finish Button. Your Project is Create Successfully.

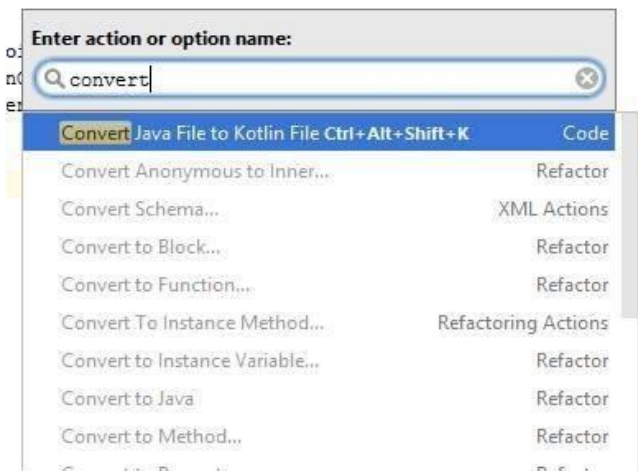
In Android Studio 3.0, you can choose to create the activity in Kotlin right away, so you can skip the "Converting Java code to Kotlin" step. Earlier versions will create an activity in Java, and you can use the automated converter tool to convert it.

Converting Java code to Kotlin

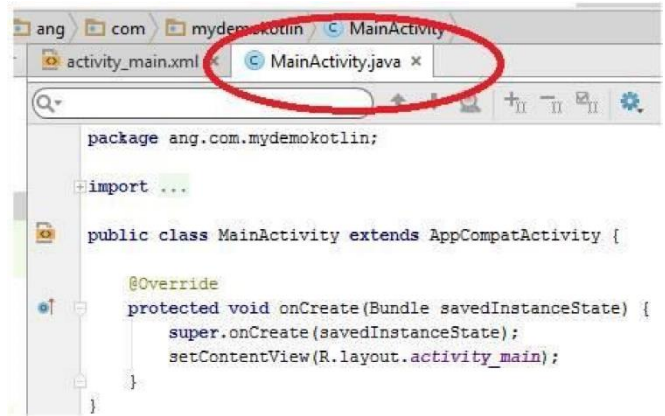
Open MainActivity.java file. Then invoke action Convert Java File to Kotlin File. There is multiple way but one is easiest way is Find Action (Ctrl + Shift + A). The pop-up window that opens, shows the suggestion list of matching names.



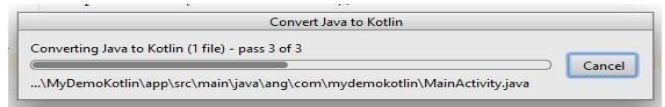
Start typing the desired action name. As you type, the suggestion list displays the matching names of actions. The actions that are not valid in the current context are displayed gray.



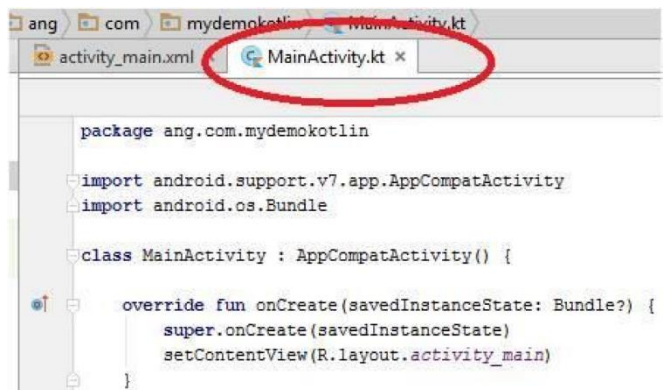
You can also Press Ctrl + Alt + Shift + K option in state of Find Action. Before converting java to kotlin file extension of main activity is MainActivity.Java.



Now we can convert Java code to Kotlin using Ctrl + Alt + Shift + K option.



Now you can see the extension of MainActivity.java is replaced by MainActivity.kt. After the conversion you should have an activity written in Kotlin.



How to use an application:

- Step 1:download app from Google play store.
- Step 2: install an app

Step 3: register a user for proper details like roll number, university, and date of birth, name, and course.

Step4: a server can check the details about students in a database.

Step5: if user details is correct generate an OTP and go to next page, otherwise send and dialog box to the user. (Process repeat to step 3)

Step 6: once user is correct, apply for what they need either certificates or original degree.

Step 7: make sure to tick needed certificates, year of ending and date of month.

Step 8: again check the details and generate an OTP to the user mobile number.

Step 9: cross check the certificates id and make payment.

Step 10: after payment, process running and courier to that particular address.

IV. CONCLUSION AND FUTURE WORK

It is easy to maintain and applying in application, both certificates and original degree by using kotlin language in android studio.

In future, by using same kotlin language in android studio, developing faculty details, feedbacks and their certificates, experience certificate also generate based on their period. Queries about subject doubts, syllabus and material maintain, college updates.

V. REFERENCES

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