**Cat and Dog prediction ml android app**

**Requirements**

* Android studio
* Java jdk
* Mobile or virtual device

**Skill Requirements:**

1. Basic of java
2. Android studio
3. Xml
4. Tflite

**Download and set up android studio**

To download android studio:

<https://developer.android.com/studio>

## Windows

To install Android Studio on Windows, proceed as follows:

1. If you downloaded an .exe file (recommended), double-click to launch it.

If you downloaded a .zip file, unpack the ZIP, copy the **android-studio** folder into your **Program Files** folder, and then open the **android-studio > bin** folder and launch studio64.exe (for 64-bit machines) or studio.exe (for 32-bit machines).

1. Follow the setup wizard in Android Studio and install any SDK packages that it recommends.

That's it. The following video shows each step of the setup procedure when using the recommended .exe download

<studio-install-windows.mp4>

As new tools and other APIs become available, Android Studio tells you with a pop-up, or you can check for updates by clicking **Help > Check for Update**.

## For more details about installing android studio on windows, mac, and Linux visit this link <https://developer.android.com/studio/install>

## Java installation

## Check java is installed already on your operating system

## Go to the search bar and type cmd and on the command prompt is opened you can just type java --version.

## After that your system is not installed java then it will show "java is not recognized as an internal command" or if you already installed java its show the java version

## If you does not have java

## If your system does not have java so just download it on "Java SE Development Kit 7 downloads - Oracle.com". The download link in below

## <https://www.oracle.com/in/java/technologies/javase-jdk16-downloads.html>

## Download the .exe file from the site when you download it then install. And don’t forget the installation path

## Why do we set paths after the installation of JDK?

Java Development kit( **JDK)**is a software kit which is used to develop java applications. To get output on console we use java and javac commands. These commands are in the bin folder .So we need to specify their location to execute these commands. Set path conatains path of these commands.

If you save your .java file in java bin folder then you dont need to specify the path as OS will automatically take the path.

## Set up java jdk path

Go to the search bar and type cmd and on the command prompt is opened you can just type edit the system environment variables after that it will open the environment variables box.

User variables-->then click the path-->click edit-->it will open a new edit environment variable page-->then click new-->and paste the java jdk bin folder path-->click okay

## Set up java jdk home path

Go to the search bar and type cmd and on the command prompt is opened you can just type edit the system environment variables after that it will open the environment variables box.

System variables--> click new option--> variable name = JAVA\_HOME --> variable value = the path up to the jdk folder -->then click ok

**Convert .pb file to .tflite file**

1. Install tensorflow==1.15 on your env

**pip install tensorflow==1.15**

1. after that run the[**pbfile\_to\_tflitefile.py**](pbfile_to_tflitefile.py)file

python pbfile\_to\_tflitefile.py

1. when the program is running the way it will ask the .pb file location, that time type the .pb file location --> enter--> after that it will generate a .tflite file
2. **ANDRID PROJECT OPEN**

* **Xml path (UI design)**

Android 🡪 app 🡪 res 🡪 layout

* **Create new Xml (UI design)**

Android 🡪 app 🡪 res 🡪 right click on layout 🡪 new 🡪 XML 🡪 Layout xml file 🡪 set your xml page 🡪 click finish

* **Java page path**

Android 🡪 app 🡪 java 🡪 come.example.<your\_project\_name>

* **Create new Java page**

Android 🡪 app 🡪 java 🡪right click on come.example.<your\_project\_name> 🡪 new 🡪 java class 🡪 java class name

after creating the java class go to that page

**public class** my\_java\_class\_name **extends** Activity {  
} // “extends Activity” are extra added and after that put cursor on my\_java\_class\_name then click Alt+Enter then it will show a popup and click on Add activity to manifest

**by creating a new empty project**

To migrate your project into Android Studio by creating a new empty project, proceed as follows:

🡺Open Android Studio, and click File --> New Project --> select one activity --> click next --> set your project name (name=project\_name) and if you want to change the path do it and select the language (java or kotlin ) -->click finish it will generate a new project

**open an existing project in android studio**

To migrate your project into Android Studio by open an existing project in android studio, proceed as follows:

🡺Open Android Studio, and click -->open --> set your existing project directory --> click ok --> after that, your project will open on android studio

1. **when you get a Gradle file error, check your Gradle file path settings are correct**

Error = Connection refused: no further information error :-

1. file -> settings -> gradle ->gradle user home = <F:/android\_studio/plugins/.gradle > // put a . before gradle (/.gradle ) android studio installed path
2. file -> settings -> gradle -> gradle jdk=C:\Program Files\Java\jdk-15.0.2 // (java jdk path)
3. **import .tflite file**

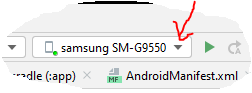
File 🡪 new 🡪 other 🡪 Tenserflow Lite Model 🡪 give the tflite model location 🡪 finish

When the .tflite file is imported it will open one page. The page will contains two sets of code one is java code and another one is kotlin code. you can use it on any function

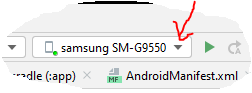
**Run on your phone**

connect your phone to the system using a USB cable --> go to phone settings --> developer options --> enable USB debugging --> after that system will identify your phone --> after that click on the run symbol it will on the right side of the top --> then you can check your app on the phone

**download virtual device**

click on🡪 🡪 click AVD manager🡪create virtual device🡪click one pixel 🡪click next 🡪 then click download 🡪after the download click finish🡪

**Run on your virtual device**

click on🡪 🡪 select you virtual device name 🡪 click run symbol on the right side

**Build application APK file**

Click Ctrl+F9 --> after the processing click on build --> build bundle(s) /APK(s) -->

Build APK(s)

**Location of build APK** = project🡪app🡪build🡪outputs🡪apk🡪debug