**Formative Assignment 6**

**Task 1**: Read Exif information from image, and use api to look for location.

Additional permissions

<**uses-permission android:name="android.permission.READ\_EXTERNAL\_STORAGE"**/>  
<**uses-permission android:name="android.permission.INTERNET"** />  
<**uses-permission android:name="android.permission.ACCESS\_NETWORK\_STATE"** />

MainActivity.java

**package** com.example.lesgo.a6t1;  
  
**import** android.graphics.BitmapFactory;  
**import** android.media.ExifInterface;  
**import** android.os.StrictMode;  
**import** android.support.v7.app.AppCompatActivity;  
**import** android.os.Bundle;  
**import** android.util.Log;  
**import** android.view.View;  
**import** android.widget.Button;  
**import** android.widget.ImageView;  
**import** android.widget.TextView;  
  
**import** org.json.JSONArray;  
**import** org.json.JSONException;  
**import** org.json.JSONObject;  
**import** org.w3c.dom.Text;  
  
**import** java.io.File;  
**import** java.io.IOException;  
**import** java.io.InputStream;  
**import** java.io.InputStreamReader;  
**import** java.io.Reader;  
**import** java.net.HttpURLConnection;  
**import** java.net.URL;  
**import** java.net.URLEncoder;  
  
**public class** MainActivity **extends** AppCompatActivity {  
  
 Button **btn**;  
 TextView **lat**,**longt**,**add**;  
 String **path** = **"/sdcard/sample\_image.jpg"**;  
 ImageView **img**;  
  
  
 @Override  
 **protected void** onCreate(Bundle savedInstanceState) {  
 **super**.onCreate(savedInstanceState);  
 setContentView(R.layout.***activity\_main***);  
  
 StrictMode.ThreadPolicy policy = **new** StrictMode.ThreadPolicy.Builder().permitAll().build();  
 StrictMode.*setThreadPolicy*(policy);  
  
 **btn** = (Button)findViewById(R.id.***get***);  
 **lat** = (TextView)findViewById(R.id.***lat***);  
 **longt** = (TextView)findViewById(R.id.***longt***);  
 **add** = (TextView)findViewById(R.id.***add***);  
 **img** = (ImageView)findViewById(R.id.***img***);  
  
  
 **btn**.setOnClickListener(**new** View.OnClickListener() {  
 @Override  
 **public void** onClick(View v) {  
  
 File file = **new** File(**path**);  
 **if**(file.exists())  
 {  
 **img**.setImageBitmap(BitmapFactory.*decodeFile*(file.getAbsolutePath()));  
 }  
  
 **try**{  
 ExifInterface ex = **new** ExifInterface(**path**);  
 **float**[] latLong = **new float**[2];  
 ex.getLatLong(latLong);  
  
 **lat**.setText(String.*valueOf*(latLong[0]));  
 **longt**.setText(String.*valueOf*(latLong[1]));  
  
 JSONObject aaa;  
  
 aaa = callApi(String.*valueOf*(latLong[0]),String.*valueOf*(latLong[1]));  
  
 JSONArray result = aaa.getJSONArray(**"results"**);  
 JSONObject first = result.getJSONObject(0);  
 String address = first.getString(**"formatted\_address"**);  
  
  
 **add**.setText(address);  
 Log.*d*(**"return"**,address);  
  
  
  
 }**catch**(Exception e)  
 {  
 e.printStackTrace();  
 }  
  
 }  
 });  
 }  
  
 **private** JSONObject callApi(String lat,String longt) **throws** IOException {  
 InputStream is = **null**;  
 JSONObject obj = **new** JSONObject();  
  
  
 String link = **"https://maps.googleapis.com/maps/api/geocode/json?latlng="**+ lat +**","**+ longt + **"&key=AIzaSyC\_UDyD3aVsmQOwoukNljsXSpaMqTcN-dg"**;  
 **try**{  
 StringBuilder stringBuilder = **new** StringBuilder();  
  
 URL url = **new** URL(link);  
 HttpURLConnection conn = (HttpURLConnection) url.openConnection();  
 conn.setReadTimeout(10000 );  
 conn.setConnectTimeout(15000);  
 conn.setRequestMethod(**"GET"**);  
 conn.setDoInput(**true**);  
  
  
 conn.connect();  
 **int** response = conn.getResponseCode();  
 Log.*d*(**"RESPONSE"**, **"The response is: "** + response);  
 is = conn.getInputStream();  
  
 **int** b;  
 **while**((b = is.read())!= -1){  
 stringBuilder.append((**char**)b);  
 }  
  
 **try**{  
 obj = **new** JSONObject(stringBuilder.toString());  
 } **catch** (JSONException e)  
 {  
 e.printStackTrace();  
 }  
  
 } **finally** {  
 **if** (is != **null**) {  
 is.close();  
 }  
 }  
 **return** obj;  
  
 }  
}