Ganpat University

U.V. Patel College of Engineering

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Department of Computer

Engineering/Information Technology

Create an application to create JSON URL for Contact which have field(id, Name(First Name, Last Name), Phone No, Address) and should be minimum five contact details & display received contact data in listview.

Activity_main.xml:

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <ListView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:padding="10dp"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintBottom_toBottomOf="parent"
        android:id="@+id/listView"
        android:dividerHeight="8dp"
        android:divider="#00FFFFFF"
        />

    <com.google.android.material.floatingactionbutton.FloatingActionButton
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/refresh_btn"
        android:src="@drawable/ic_baseline_refresh_24"
        android:tint="@color/white"
        android:backgroundTint="@color/purple_500"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        android:layout_marginBottom="30dp"
        android:layout_marginEnd="30dp"
        />
</androidx.constraintlayout.widget.ConstraintLayout>
```

```kotlin
import android.os.AsyncTask
import androidx.appcompat.app.AppCompatActivity
import android.os.Bundle
import android.util.Log
import android.widget.ListView
import android.widget.Toast
import android.widget.Toolbar
import com.google.android.material.floatingactionbutton.FloatingActionButton
import org.json.JSONArray
import org.json.JSONException
import org.json.JSONObject
import java.lang.Exception

class MainActivity : AppCompatActivity() {
    private lateinit var listView : ListView
    private lateinit var faBtn : FloatingActionButton

    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)

        listView = findViewById(R.id.listView)
        faBtn = findViewById(R.id.refresh_btn)

        faBtn.setOnClickListener {
            val task = GetContacts()
            task.execute("http://192.168.43.245:4000/api/get/contacts")
        }
    }
    fun fetchURLJsonString(jsonStr : String?){
        val contactList = ArrayList<Contact>()
        try{
            val jsonArray = JSONArray(jsonStr)
            for(i in 0 until jsonArray.length()){
                val jsonObject = jsonArray[i] as JSONObject
                val contact = Contact(jsonObject)
                contactList.add(contact)
            }
            listView.adapter = ListViewAdapter(this,contactList)
        }catch(e:Exception){
            Log.e(HttpHandler.TAG,e.message!!)
        }
    }

    inner class GetContacts : AsyncTask<String?,Void?,String?>(){
        override fun onPostExecute(result: String?) {
            super.onPostExecute(result)
```

```kotlin
            if(result == null) return
            runOnUiThread{ fetchURLJsonString(result) }
        }
        override fun doInBackground(vararg params: String?): String? {
            val sh = HttpHandler()
            return sh.makeServiceCall(params[0]!!)
        }
    }

}
```

item_box.xml:

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    xmlns:app="http://schemas.android.com/apk/res-auto">

    <androidx.cardview.widget.CardView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="15dp"
        android:backgroundTint="@color/black"
        app:cardCornerRadius="10dp"
        >

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical"
        android:padding="10dp"
        >

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Name"
            android:textSize="15sp"
            android:id="@+id/name"
            android:textColor="#717171"
            android:layout_marginBottom="10dp"
            />

        <TextView
            android:layout_width="wrap_content"
```

```xml
            android:layout_height="wrap_content"
            android:text="Phone"
            android:textSize="13sp"
            android:textColor="#717171"
            android:id="@+id/phone"
            android:layout_marginBottom="10dp"
            />

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Address"
            android:textSize="10sp"
            android:textColor="#717171"
            android:id="@+id/address"
            android:layout_marginBottom="10dp"
            />


    </LinearLayout>

</androidx.cardview.widget.CardView>

</androidx.constraintlayout.widget.ConstraintLayout>
```

Contact.kt:

```kotlin
package com.example.practical_12_20012532001

import org.json.JSONObject

class Contact(contact : JSONObject) {

    var id:String
    var name:String
    var phone:String
    var address:String

    init{
        id = contact.getString("_id")
        val contactName = JSONObject(contact.getString("name"))
        name = contactName.getString("firstname") + " " + contactName.getString("lastname")
        phone = contact.getString("phone")
        address = contact.getString("address")
```

```
}
}
```

ListViewAdapter.kt:
```kotlin
package com.example.practical_12_20012532001

import android.content.Context
import android.view.LayoutInflater
import android.view.View
import android.view.ViewGroup
import android.view.animation.Animation
import android.view.animation.AnimationUtils
import android.widget.BaseAdapter
import android.widget.TextView

class ListViewAdapter(
    private val context:Context,
    private val arrayList: ArrayList<Contact>
) : BaseAdapter() {

    private lateinit var name: TextView
    private lateinit var phone: TextView
    private lateinit var address: TextView

    override fun getCount(): Int {
        return arrayList.size
    }

    override fun getItem(position: Int): Any {
        return position
    }

    override fun getItemId(position: Int): Long {
        return position.toLong()
    }

    override fun getView(position: Int, convertView: View?, parent: ViewGroup?): View {
        val convertView: View? = LayoutInflater.from(context).inflate(R.layout.item_box,parent,false)

        val animation : Animation = AnimationUtils.loadAnimation(context,R.anim.scale_item)
        convertView?.startAnimation(animation)

        this.name = convertView!!.findViewById(R.id.name)
        this.phone = convertView.findViewById(R.id.phone)
        this.address = convertView.findViewById(R.id.address)

        val contact = arrayList[position]
```

```kotlin
        name.text = contact.name
        phone.text = contact.phone
        address.text = contact.address


        return convertView
    }
}
```

HttpHandler.kt:

```kotlin
package com.example.practical_12_20012532001

import android.util.Log
import java.io.*
import java.lang.StringBuilder
import java.net.HttpURLConnection
import java.net.URL

class HttpHandler {
    companion object{
        const val TAG = "HttpHandler"
    }
    fun makeServiceCall(reqUrl : String) : String? {
        var response : String? = null
        try{
            val url = URL(reqUrl)
            val conn = url.openConnection() as HttpURLConnection
            conn.requestMethod = "GET"

            val `in` : InputStream = BufferedInputStream(conn.inputStream)
            response =  convertStreamToString(`in`)

        }catch(e : Exception){
            Log.e(TAG,"Exception : "+e.message)
        }
        return  response
    }
    private fun convertStreamToString(`is` : InputStream) : String{
        val reader = BufferedReader(InputStreamReader(`is`))
        val sb = StringBuilder()
        var line : String
        try{
            while(reader.readLine().also { line = it } != null){
                sb.append(line).append('\n')
            }
        }catch(e:Exception){
```

```
        Log.e(TAG, e.message!!)
    } finally {
        try {
            "is".close()
        } catch(ie:IOException){
            Log.e(TAG, ie.message!!)
        }
    }
    return sb.toString()
}
```

AndroidManifest.xml:

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.practical_12_20012532001">

    <uses-permission android:name="android.permission.INTERNET" />
    <uses-permission android:name="android.permission.ACCESS_NETWORK_STATE" />
    <uses-permission android:name="android.permission.ACCESS_WIFI_STATE" />

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Practical_12_20012532001">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>

</manifest>
```

Output:

Cecelia Velazquez

+91 9250 481 2953

[address illegible]

Floyd Navarro

+91 840 461 1211

[address illegible]

Leah Gibbs

+91 889 139 1913

[address illegible] New Jersey

Brock Gallagher

+91 938 559 2073

[address illegible] San Diego

Walters Gilmore

+91 967 561 1752

[address illegible]

Rodgers Hartman

+91 811 578 1240