



**Ganpat
University**
॥ विद्यया समाजोत्कर्षः ॥

**U.V. Patel
College of
Engineering**

Practical - 12

AIM: 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.

B.Tech. Semester - V
Computer Engineering/ Information Technology
Academic Year: 2021 (Odd Sem.)

Prepared By:

HINGRAJIYA ACHAL A.: 19012021012

Department of Information Technology Engineering

UVPCE - Ganpat University

Table Of Contents

Aim:	1
Project structure:	2
Source Code:	3
Project Files	3
src\main\AndroidManifest.xml	3
Main Activity	4
com\example\practical12_19012021012\MainActivity.kt	4
com\example\practical12_19012021012\UserData.kt	6
com\example\practical12_19012021012\ ContactsAdapter.kt	7
res\layout\activity_main.xml	8
res\layout\contact_card.xml	9
Output:	11

Table of figures

1. JSON-Data	1
2. Project Structure-1.....	2
3. Main Activity Layout.....	8
4. Contact Card Layout	9
5. Main Activity Output (before fetching data)	11
6. Main Activity Output-2 (After fetching data).....	11
7. Main Activity Output-3 (After scrolling down).....	11
8. Main Activity Output-4 (After scrolling down more)	11

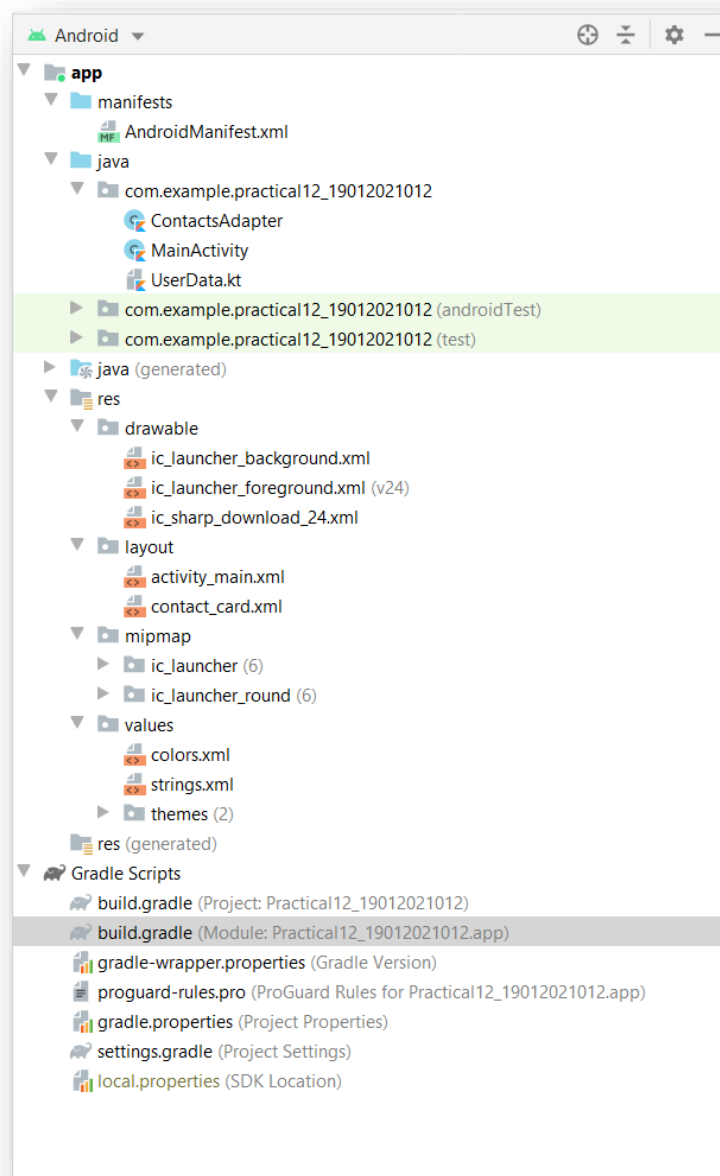
PRACTICAL – 12

Aim: 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.

```
{
  "users": [
    {
      "id": 0,
      "name": {
        "lastname": "Bridges",
        "firstname": "Short"
      },
      "phone": "+95 45232 046",
      "address": "Portland Avenue, Noblestown, Nevada"
    },
    {
      "id": 1,
      "name": {
        "lastname": "Mcgee",
        "firstname": "Ina"
      },
      "phone": "+88 45992 695",
      "address": "Brigham Street, Madaket, Virginia"
    },
    {
      "id": 2,
      "name": {
        "lastname": "Love",
        "firstname": "Becky"
      },
      "phone": "+80 65132 704",
      "address": "Cypress Avenue, Morningside, Federated States Of Micronesia"
    },
    {
      "id": 3,
      "name": {
        "lastname": "Rivera",
        "firstname": "Emma"
      },
      "phone": "+87 55502 019",
      "address": "Bayview Place, Tecolotito, Minnesota"
    },
    {
      "id": 4,
      "name": {
        "lastname": "Holloway",
        "firstname": "Cox"
      },
      "phone": "+87 45913 747",
      "address": "Jewel Street, Canby, Kansas"
    },
    {
      "id": 5,
      "name": {
        "lastname": "Pollard",
        "firstname": "Carissa"
      },
      "phone": "+82 26003 863",
      "address": "Dewitt Avenue, Valle, American Samoa"
    },
    {
      "id": 6,
      "name": {
        "lastname": "Rollins",
        "firstname": "Ramirez"
      },
      "phone": "+86 14872 274",
      "address": "Fiske Place, Worton, Alaska"
    },
    {
      "id": 7,
      "name": {
        "lastname": "Pierce",
        "firstname": "Lesley"
      },
      "phone": "+98 94402 604",
      "address": "Guider Avenue, Summerfield, Massachusetts"
    },
    {
      "id": 8,
      "name": {
        "lastname": "Drake",
        "firstname": "Violet"
      },
      "phone": "+94 95333 501",
      "address": "Will Place, Weedville, Missouri"
    },
    {
      "id": 9,
      "name": {
        "lastname": "Hernandez",
        "firstname": "Todd"
      },
      "phone": "+99 64813 456",
      "address": "Colonial Court, Cuylerville, Oregon"
    },
    {
      "id": 10,
      "name": {
        "lastname": "Mcperson",
        "firstname": "Julie"
      },
      "phone": "+97 55862 742",
      "address": "Ingraham Street, Cartwright, Colorado"
    },
    {
      "id": 11,
      "name": {
        "lastname": "Jordan",
        "firstname": "Kathryn"
      },
      "phone": "+81 24113 661",
      "address": "Kings Place, Wikieup, Illinois"
    },
    {
      "id": 12,
      "name": {
        "lastname": "Savage",
        "firstname": "Barron"
      },
      "phone": "+82 25363 140",
      "address": "Lamont Court, Waumandee, Delaware"
    },
    {
      "id": 13,
      "name": {
        "lastname": "Shannon",
        "firstname": "Lora"
      },
      "phone": "+85 34273 086",
      "address": "Devoe Street, Worcester, Washington"
    },
    {
      "id": 14,
      "name": {
        "lastname": "Alvarado",
        "firstname": "Rodgers"
      },
      "phone": "+84 55782 033",
      "address": "Fane Court, Frizzleburg, Connecticut"
    },
    {
      "id": 15,
      "name": {
        "lastname": "Gamble",
        "firstname": "Marta"
      },
      "phone": "+93 35603 049",
      "address": "Howard Avenue, Clarktown, Nebraska"
    },
    {
      "id": 16,
      "name": {
        "lastname": "Morris",
        "firstname": "Finley"
      },
      "phone": "+98 65702 798",
      "address": "Wolf Place, Sterling, Ohio"
    },
    {
      "id": 17,
      "name": {
        "lastname": "Fletcher",
        "firstname": "Santos"
      },
      "phone": "+91 35193 226",
      "address": "Oliver Street, Fairhaven, Puerto Rico"
    },
    {
      "id": 18,
      "name": {
        "lastname": "Robbins",
        "firstname": "Donovan"
      },
      "phone": "+87 24203 093",
      "address": "Duffield Street, Waterford, Arizona"
    },
    {
      "id": 19,
      "name": {
        "lastname": "Simon",
        "firstname": "Holt"
      },
      "phone": "+98 45713 150",
      "address": "Tillary Street, Romeville, Hawaii"
    }
  ]
}
```

1. [JSON-Data](#)

Project structure:



2. Project Structure-1

Source Code:

Project Files

src\main\AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.practical12_19012021012">

    <uses-permission android:name="android.permission.ACCESS_NETWORK_STATE"/>
    <uses-permission android:name="android.permission.INTERNET"/>
    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportRtl="true"
        android:theme="@style/Theme.Practical12_19012021012">
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

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

</manifest>
```

Main Activity

Used to display contacts inside listview fetched from JSON-API.

com\example\practical12_19012021012\MainActivity.kt

```
package com.example.practical12_19012021012

import android.os.Bundle
import android.os.StrictMode
import android.widget.Button
import android.widget.ListView
import androidx.appcompat.app.AppCompatActivity
import okhttp3.OkHttpClient
import okhttp3.Request
import org.json.JSONArray
import org.json.JSONObject

class MainActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)
        supportActionBar?.hide()

        val btn = findViewById<Button>(R.id.btn_fetch)
        val policy = StrictMode.ThreadPolicy.Builder().permitAll().build()
        StrictMode.setThreadPolicy(policy)

        val lvContacts = findViewById<ListView>(R.id.lv_users)
        val contactsAdapter = ContactsAdapter(this, UserData.arrOfUser)
        lvContacts.adapter = contactsAdapter

        btn.setOnClickListener {
            val BASE_URL = "https://api.json-generator.com/templates/JHOkVc1Jartq/data?access_token=pyabkeewzr4u8cbil1drcd8voa1t8gi6bjvxcznm"

            val client = OkHttpClient()
            val request = Request.Builder().url(BASE_URL).get().build()

            val response = client.newCall(request).execute()
            val jsonString = response.body()?.string()

            val json = JSONObject(jsonString)
            if (!response.isSuccessful) {
                val errors = json.getJSONArray("errors").join(", ")
                throw Exception(errors)
            }
        }
    }
}
```

```
val jsonArray: JSONArray = json.getJSONArray("users")

for (i in 0 until jsonArray.length()) {

    val userInfo = jsonArray.getJSONObject(i)

    val id = userInfo.getString("id").toLong()

    val name = userInfo.getJSONObject("name")
    val firstName = name.getString("firstname")
    val lastName = name.getString("lastname")

    val phone = userInfo.getString("phone")
    val address = userInfo.getString("address")

    val user = User(
        id,
        Name(
            firstName,
            lastName
        ),
        phone,
        address
    )

    UserData.arrOfUser.add(user)

    contactsAdapter.notifyDataSetChanged()
}
}
```

com\example\practical12_19012021012\UserData.kt

```
package com.example.practical12_19012021012
```

```
class UserData {  
    companion object {  
        var arrOfUser = ArrayList<User>()  
  
        fun addUser(user : User){  
            arrOfUser.add(user)  
        }  
    }  
}
```

```
class User(  
    var id: Long,  
    var name: Name,  
    var phone: String,  
    var address: String  
) {  
}
```

```
class Name(  
    var firstName: String,  
    var lastName: String  
) {  
    fun getName() :String{  
        return this.firstName + this.lastName  
    }  
}
```


com\example\practical12_19012021012\ ContactsAdapter.kt

```
package com.example.practical12_19012021012

import android.annotation.SuppressLint
import android.content.Context
import android.view.LayoutInflater
import android.view.View
import android.view.ViewGroup
import android.widget.BaseAdapter
import android.widget.TextView

class ContactsAdapter(private val context: Context, private val dataSource : ArrayList<User>) : BaseAdapter() {
    override fun getCount(): Int {
        return dataSource.size
    }

    override fun getItem(p0: Int): User {
        return dataSource[p0]
    }

    override fun getItemId(p0: Int): Long {
        return getItem(p0).id
    }

    @SuppressLint("ViewHolder")
    override fun getView(p0: Int, p1: View?, p2: ViewGroup?): View {

        val inflater = context.getSystemService(Context.LAYOUT_INFLATER_SERVICE) as LayoutInflater

        val rowView = inflater.inflate(R.layout.contact_card, p2, false)

        val tvName = rowView.findViewById<TextView>(R.id.tv_name)
        val tvPhone = rowView.findViewById<TextView>(R.id.tv_phone)
        val tvAddress = rowView.findViewById<TextView>(R.id.tv_address)

        val user = getItem(p0)
        tvName.text = user.name.getName()
        tvPhone.text = user.phone
        tvAddress.text = user.address

        return rowView
    }
}
```

res\layout\activity_main.xml

```

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
    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">

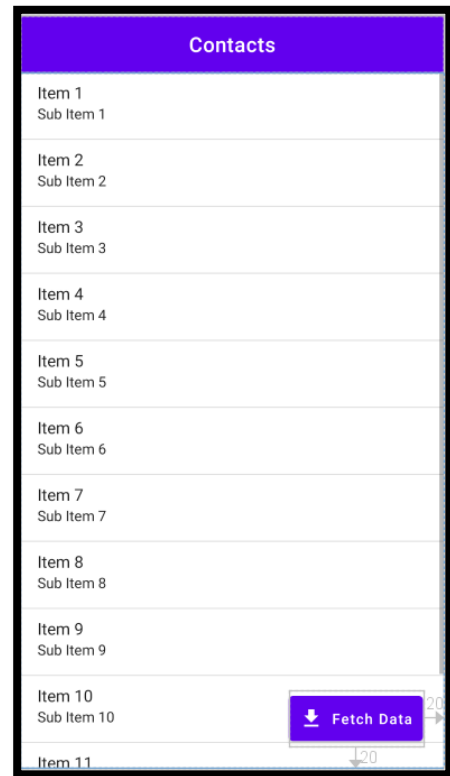
    <com.google.android.material.appbar.AppBarLayout
        android:id="@+id/topAppBarLayout"
        android:layout_width="match_parent"
        android:layout_height="wrap_content">

        <com.google.android.material.appbar.MaterialToolbar
            android:id="@+id/topAppBar"
            android:layout_width="match_parent"
            android:layout_height="?attr/actionBarSize"
            app:title="Contacts"
            app:titleCentered="true"
            style="@style/Widget.MaterialComponents.Toolbar.Primary"
            />
    </com.google.android.material.appbar.AppBarLayout>

    <ListView
        android:id="@+id/lv_users"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_below="@+id/topAppBarLayout"/>

    <Button
        android:id="@+id/btn_fetch"
        style="@style/Widget.MaterialComponents.Button.Icon"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentBottom="true"
        android:layout_alignParentRight="true"
        android:layout_alignParentEnd="true"
        android:layout_marginBottom="20dp"
        android:layout_marginRight="20dp"
        app:icon="@drawable/ic_sharp_download_24"
        android:text="Fetch Data"
        android:textAllCaps="false"
        android:padding="10dp"
        android:layout_marginEnd="20dp"
        android:elevation="5dp"/>
</RelativeLayout>

```



3. Main Activity Layout

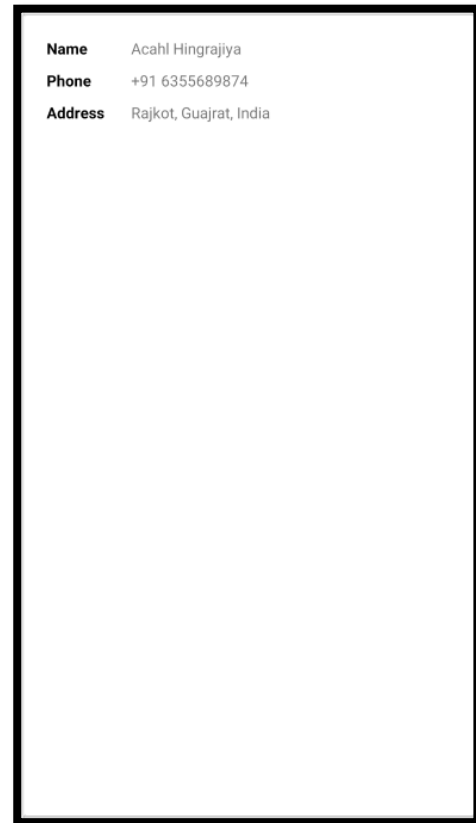
res\layout\contact_card.xml

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.cardview.widget.CardView
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <RelativeLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:padding="20dp">
        <TextView
            android:id="@+id/lbl_name"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Name"
            android:textColor="@color/black"
            android:textStyle="bold"
            android:layout_alignParentTop="true"
            android:layout_alignParentLeft="true"
            android:layout_alignParentStart="true"
            android:layout_marginRight="40dp"
            android:layout_marginEnd="40dp"
            android:layout_marginBottom="10dp"/>
        <TextView
            android:id="@+id/tv_name"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="Achal Hingrajiya"
            android:layout_alignBaseline="@+id/lbl_name"
            android:layout_toRightOf="@+id/lbl_name"
            android:layout_toEndOf="@+id/lbl_name"
            />
        <TextView
            android:id="@+id/lbl_phone"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Phone"
            android:textStyle="bold"
            android:textColor="@color/black"
            android:layout_below="@id/lbl_name"
            android:layout_alignLeft="@id/lbl_name"
            android:layout_alignStart="@id/lbl_name"
            android:layout_marginBottom="10dp"/>

```



4. Contact Card Layout

```
<TextView
    android:id="@+id/tv_phone"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="+91 6355689874"
    android:layout_alignLeft="@id/tv_name"
    android:layout_below="@id/tv_name"
    android:layout_alignBaseline="@+id/lbl_phone"
    android:layout_alignStart="@id/tv_name" />

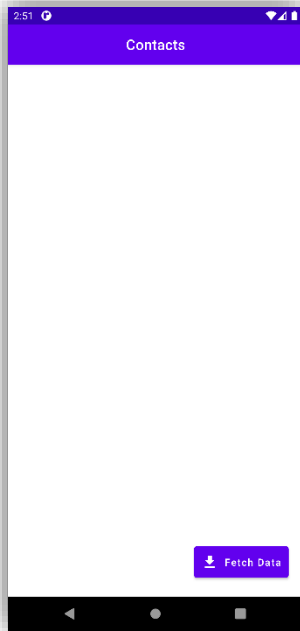
<TextView
    android:id="@+id/lbl_address"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Address"
    android:textStyle="bold"
    android:textColor="@color/black"
    android:layout_below="@id/lbl_phone"
    android:layout_alignLeft="@id/lbl_phone"
    android:layout_alignStart="@id/lbl_phone" />

<TextView
    android:id="@+id/tv_address"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Rajkot, Guajrat, India"
    android:layout_below="@id/tv_phone"
    android:layout_toRightOf="@+id/lbl_address"
    android:layout_toEndOf="@+id/lbl_address"
    android:layout_alignBaseline="@+id/lbl_address"
    android:layout_alignLeft="@+id/tv_phone"
    android:layout_alignStart="@+id/tv_phone" />

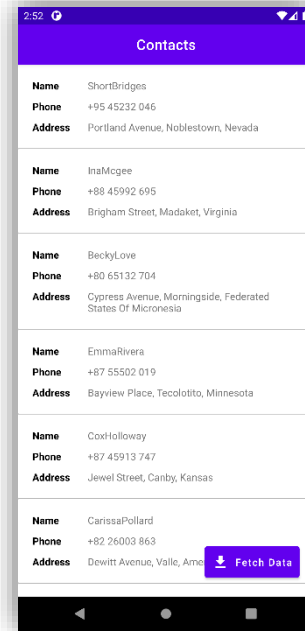
</RelativeLayout>

</androidx.cardview.widget.CardView>
```

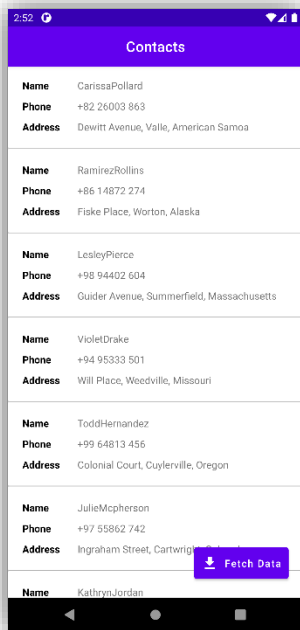
Output:



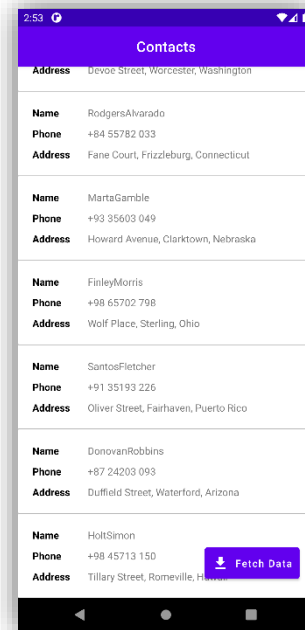
5. Main Activity Output (before fetching data)



6. Main Activity Output-2 (After fetching data)



7. Main Activity Output-3 (After scrolling down)



8. Main Activity Output-4 (After scrolling down more)