

## **Practical 10**

**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 RecyclerView. Add Google Map Activity which displays location which is received in JSON Data in google Maps activity and set the zoom level to 10.**

**To Generate JSON Data, Refer: <https://app.json-generator.com/>**

- 1. Create MainActivity according to below UI design. 2. Use link generated from website for JSON Data**
- 3. Create MapActivity by using this instructions.**
- 4. Create Class Person with member Variables like id, Name, Phone No, Email Id, Address, Latitude, Longitude. This class should be inherited from Serializable class.**
- 5. Generate JSON data format according to below image.**
- 6. Use RecyclerView or ListView Adapter**
- 7. Add Internet Permission in Manifest file**
- 8. Create Class HttpRequest for communicating with Web URL**

**Code:**

**MainActivity.kt:**

```
package com.example.mad_practical_10_21012021003
```

```
import android.util.Log import java.io.*
import java.net.HttpURLConnection
import java.net.MalformedURLException
import java.net.ProtocolException import
java.net.URL
```

```
class HttpRequest {
    private val TAG = "HttpRequest"
    fun makeServiceCall(reqUrl: String?, token: String? = null): String? {
        var response: String? = null        try {
            val url = URL(reqUrl)
            val conn = url.openConnection() as HttpURLConnection
            if(token != null){
                conn.setRequestProperty("Authorization", "Bearer $token");
                conn.setRequestProperty("Content-Type", "application/json");
            }
            conn.requestMethod = "GET"
            response = convertStreamToString(BufferedInputStream(conn.inputStream))
        } catch (e: MalformedURLException) {
            Log.e(TAG, "MalformedURLException: " + e.message)
```

```
        } catch (e: ProtocolException) {
            Log.e(TAG, "ProtocolException: " + e.message)
        } catch (e: IOException) {
            Log.e(TAG, "IOException: " + e.message)
        } catch (e: Exception) {
            Log.e(TAG, "Exception: " + e.message)
        }
        return response
    }

    private fun convertStreamToString(iss : InputStream): String {
        val reader = BufferedReader(InputStreamReader(iss))
        val sb = StringBuilder()
        var line: String?
        try {
            while (reader.readLine().also { line = it } != null) {
                sb.append(line).append("\n")
            }
        } catch (e: IOException) {
            e.printStackTrace()
        } finally {
            try {
                iss.close()
            } catch (e: IOException) {
                e.printStackTrace()
            }
        }
        return sb.toString()
    }
}
```

### **HttpRequest.kt:**

```
package com.example.mad_practical_10_21012021003
```

```
import android.util.Log import java.io.*
import java.net.HttpURLConnection
import java.net.MalformedURLException
import java.net.ProtocolException import
java.net.URL
```

```
class HttpRequest {    private val
TAG = "HttpRequest"
    fun makeServiceCall(reqUrl: String?,token:String?=null): String? {
        var response: String? = null
        try {
```

```

        val url = URL(reqUrl)
        val conn = url.openConnection() as HttpURLConnection
        if(token != null){
            conn.setRequestProperty("Authorization","Bearer $token");
            conn.setRequestProperty("Content-Type","application/json");
        }
        conn.requestMethod = "GET"
        response = convertStreamToString(BufferedInputStream(conn.inputStream))
    } catch (e: MalformedURLException) {
        Log.e(TAG, "MalformedURLException: " + e.message)
    } catch (e: ProtocolException) {
        Log.e(TAG, "ProtocolException: " + e.message)
    } catch (e: IOException) {
        Log.e(TAG, "IOException: " + e.message)
    } catch (e: Exception) {
        Log.e(TAG, "Exception: " + e.message)
    }
    return response
}

private fun convertStreamToString(iss : InputStream): String {
    val reader = BufferedReader(InputStreamReader(iss))
    val sb = StringBuilder()
    var line: String?
    try {
        while (reader.readLine().also { line = it } != null) {
            sb.append(line).append('\n')
        }
    } catch (e: IOException) {
        e.printStackTrace()
    }
    finally {
        try {
            iss.close()
        } catch (e: IOException) {
            e.printStackTrace()
        }
    }
    return sb.toString()
} }

```

### MapsActivity:

```

package com.example.mad_practical_10_21012021003 import
androidx.appcompat.app.AppCompatActivity import
android.os.Bundle

```

```
import com.google.android.gms.maps.CameraUpdateFactory
import com.google.android.gms.maps.GoogleMap import
com.google.android.gms.maps.OnMapReadyCallback import
com.google.android.gms.maps.SupportMapFragment import
com.google.android.gms.maps.model.LatLng import
com.google.android.gms.maps.model.MarkerOptions
import com.example.mad_practical_10_21012021003.databinding.ActivityMapsBinding
```

```
class MapsActivity : AppCompatActivity(), OnMapReadyCallback {
```

```
    private lateinit var mMap: GoogleMap    private
lateinit var binding: ActivityMapsBinding    private
    var lat:Double = 0.0    private var log:Double = 0.0
    private var title = ""
```

```
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
```

```
        binding = ActivityMapsBinding.inflate(layoutInflater)
        setContentView(binding.root)
        val obj = intent.getSerializableExtra("Object") as Person
        //Log.i(TAG,"onCreate:Object:$obj")
        lat = obj.latitude
        log = obj.longitude
        title = obj.name
        // Obtain the SupportMapFragment and get notified when the map is ready to be used.
        val mapFragment = supportFragmentManager
            .findFragmentById(R.id.map) as SupportMapFragment
        mapFragment.getMapAsync(this)
    }
    override fun onMapReady(googleMap: GoogleMap) {
        mMap = googleMap
```

```
        // Add a marker in Sydney and move the camera
        val sydney = LatLng(lat, log )
        mMap.addMarker(MarkerOptions().position(sydney).title(title))
        mMap.moveCamera(CameraUpdateFactory.newLatLng(sydney))
    } }
```

```
Pers
on.kt
:
```

```
package com.example.mad_practical_10_21012021003
```

```
import org.json.JSONObject
import java.io.Serializable
```

```

class Person(var id:String,
var name:String,      var
emailId:String,      var
phoneNo:String,      var
address:String,      var
latitude:Double,
    var longitude: Double):Serializable {

    constructor(jsonObject:JSONObject):this("", "", "", "", "", 0.0, 0.0) {
        id = jsonObject.getString("id")      emailId =
jsonObject.getString("email")      phoneNo =
jsonObject.getString("phone")      val profileJson =
jsonObject.getJSONObject("profile")      name =
profileJson.getString("name")      address =
profileJson.getString("address")      val locationJson =
profileJson.getJSONObject("location")      latitude =
locationJson.getDouble("lat")
        longitude = locationJson.getDouble("long")
    } }

```

### PersonAdapter.kt:

```
package com.example.mad_practical_10_21012021003
```

```

import android.content.Context
import android.content.Intent import
android.view.LayoutInflater import
android.view.View import
android.view.ViewGroup import
android.widget.AdapterView import
android.widget.Button import
android.widget.TextView
import com.google.android.material.button.MaterialButton
import java.util.ArrayList

```

```

class PersonAdapter(context:Context,val
array:ArrayList<Person>):ArrayAdapter<Person>(context,0,array) {
    override fun getView(position: Int, convertView: View?, parent:
ViewGroup): View {

        val view =
LayoutInflater.from(parent.context).inflate(R.layout.person_item,parent,false)
        val person_data = array.get(position)
        view.findViewById<TextView>(R.id.textView_name).text=person_data.name
        view.findViewById<TextView>(R.id.textView_no).text=person_data.phoneNo
        view.findViewById<TextView>(R.id.textView_email).text=person_data.emailId
        view.findViewById<TextView>(R.id.textView_address).text=person_data.address
    }
}

```

```
view.findViewById<MaterialButton>(R.id.btn_location).setOnClickListener {
    Intent(parent.context,MapsActivity::class.java).putExtra("Object",person_data).apply {
        context.startActivity(this) }
    }
    return view
}
}
```

### **Activity\_main.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:id="@+id/listview_main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent">

    </ListView>

    <com.google.android.material.floatingactionbutton.FloatingActionButton
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"        android:id="@+id/btn_autorenew"
    android:src="@drawable/baseline_autorenew_24"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    android:layout_marginBottom="20dp"
        android:layout_marginEnd="20dp"/>

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

### **Activity\_maps.xml:**

```
<?xml version="1.0" encoding="utf-8"?>
<fragment xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:map="http://schemas.android.com/apk/res-auto"
```

```
xmlns:tools="http://schemas.android.com/tools"
android:id="@+id/map"
    android:name="com.google.android.gms.maps.SupportMapFragment"
    android:layout_width="match_parent"
    android:layout_height="match_parent"    tools:context=".MapsActivity"
/>
```

### Activity\_person\_item.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:layout_editor_absoluteX="0dp"
    tools:layout_editor_absoluteY="15dp">

    <com.google.android.material.card.MaterialCardView
        android:id="@+id/materialCardView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        app:cardCornerRadius="20dp"    app:cardElevation="20dp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent">

        <androidx.constraintlayout.widget.ConstraintLayout
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:padding="20dp">
            <com.google.android.material.button.MaterialButton
                android:id="@+id/btn_person"
                style="?materialIconButtonFilledStyle"
                android:layout_width="60dp"    android:layout_height="60dp"
                android:layout_marginStart="15dp"
                android:backgroundTint="@color/cardview_dark_background"
                android:drawableTint="@color/white"
                app:icon="@drawable/baseline_person_24"
                app:iconGravity="textStart"
                app:iconSize="30dp"
                app:layout_constraintBottom_toBottomOf="parent"
                app:layout_constraintStart_toStartOf="parent"
                app:layout_constraintTop_toTopOf="parent" />
```

```

<TextView
    android:id="@+id/textView_name"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="20dp"
    android:text="Sujal "
    android:textSize="20dp"
    android:textStyle="bold"
    app:layout_constraintBottom_toTopOf="@+id/textView_no"
    app:layout_constraintStart_toEndOf="@+id/btn_person"
    app:layout_constraintTop_toTopOf="parent" />

```

```

<TextView            android:id="@+id/textView_no"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"            android:text="+91
9558297717"
    app:layout_constraintBottom_toTopOf="@+id/textView_email"
    app:layout_constraintStart_toStartOf="@+id/textView_name"
    app:layout_constraintTop_toBottomOf="@+id/textView_name" />

```

```

<TextView            android:id="@+id/textView_email"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="sujalpatel1882@gmail.com"
    app:layout_constraintBottom_toTopOf="@+id/textView_address"
    app:layout_constraintStart_toStartOf="@+id/textView_name"
    app:layout_constraintTop_toBottomOf="@+id/textView_no" />
<TextView            android:id="@+id/textView_address"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="A-2 swastic socity \nsaktinath,bharuch,392001"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintStart_toStartOf="@+id/textView_no"
    app:layout_constraintTop_toBottomOf="@+id/textView_email" />

```

```

<com.google.android.material.button.MaterialButton
    android:id="@+id/btn_location"
    style="?materialIconButtonFilledStyle"
    android:layout_width="60dp"            android:layout_height="60dp"
    android:layout_marginEnd="15dp"
    android:backgroundTint="#0000ff"
    android:drawableTint="@color/white"
    app:icon="@drawable/baseline_location_on_24"
    app:iconGravity="textStart"
    app:iconSize="30dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"

```



```
app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
    </com.google.android.material.card.MaterialCardView>

    <com.google.android.material.divider.MaterialDivider
android:layout_width="wrap_content"
android:layout_height="10dp"
    app:layout_constraintTop_toBottomOf="@+id/materialCardView"
    app:layout_constraintStart_toStartOf="parent"
app:dividerColor="@color/white">
    </com.google.android.material.divider.MaterialDivider>
</androidx.constraintlayout.widget.ConstraintLayout>
```

**Output:**

