1CR18IS147 Shubhankar Rai

**Parsing XML and JSON Data App**

# ACTIVITY.XML FILE

<?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">

<Button

android:id="@+id/btnjson" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_marginBottom="68dp" android:backgroundTint="@color/white" android:text="Parse JSON Data" android:textColor="#e63737"

app:layout\_constraintBottom\_toBottomOf="parent" app:layout\_constraintEnd\_toStartOf="@+id/btnxml" app:layout\_constraintHorizontal\_bias="0.465" app:layout\_constraintStart\_toStartOf="parent" app:layout\_constraintTop\_toBottomOf="@+id/tableLayout" app:layout\_constraintVertical\_bias="0.276" />

<Button

android:id="@+id/btnxml" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_marginEnd="20dp" android:layout\_marginRight="20dp" android:layout\_marginBottom="68dp" android:backgroundTint="@color/white" android:text="Parse XML Data" android:textColor="#4265ed"

app:layout\_constraintBottom\_toBottomOf="parent" app:layout\_constraintEnd\_toEndOf="parent" app:layout\_constraintTop\_toBottomOf="@+id/tableLayout" app:layout\_constraintVertical\_bias="0.276" />

<TableLayout

android:id="@+id/tableLayout" android:layout\_width="411dp" android:layout\_height="377dp" android:layout\_marginTop="28dp"

app:layout\_constraintBottom\_toBottomOf="parent" app:layout\_constraintEnd\_toEndOf="parent" app:layout\_constraintHorizontal\_bias="0.5" app:layout\_constraintStart\_toStartOf="parent" app:layout\_constraintTop\_toTopOf="parent" app:layout\_constraintVertical\_bias="0.0">

<TableRow

android:id="@+id/row1" android:layout\_width="match\_parent" android:layout\_height="match\_parent" android:padding="20dp">

<TextView

android:id="@+id/xtable" android:layout\_width="wrap\_content"

|  |
| --- |
| android:layout\_height="wrap\_content" android:layout\_gravity="center\_horizontal" android:layout\_weight="1" android:text="XML Data" android:textAlignment="center" android:textStyle="bold" />  <TextView  android:id="@+id/jtable"  android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_gravity="center\_horizontal" android:layout\_weight="1" android:text="JSON Data" android:textAlignment="center" android:textStyle="bold" />  </TableRow> <TableRow  android:id="@+id/row2"  android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:padding="20dp">  <TextView  android:id="@+id/xname"  android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_weight="1" />  <TextView  android:id="@+id/jname"  android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_weight="1" />  </TableRow> <TableRow  android:id="@+id/row3"  android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:padding="20dp">  <TextView  android:id="@+id/xlat"  android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_weight="1" />  <TextView  android:id="@+id/jlat"  android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_weight="1" />  </TableRow> <TableRow  android:id="@+id/row4"  android:layout\_width="match\_parent" android:layout\_height="match\_parent" android:padding="20dp">  <TextView  android:id="@+id/xlong"  android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_weight="1" />  <TextView  android:id="@+id/jlong"  android:layout\_width="wrap\_content" |
| android:layout\_height="wrap\_content" android:layout\_weight="1" />  </TableRow> <TableRow  android:id="@+id/row5"  android:layout\_width="match\_parent" android:layout\_height="match\_parent"  android:padding="20dp">  SAURABH CHANDRA  1CR18IS133  6 ‘C’ <TextView  android:id="@+id/xtemp"  android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_weight="1" />  <TextView  android:id="@+id/jtemp"  android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_weight="1" />  </TableRow> <TableRow  android:id="@+id/row6"  android:layout\_width="match\_parent" android:layout\_height="match\_parent" android:padding="20dp">  <TextView  android:id="@+id/xhumid"  android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_weight="1" />  <TextView  android:id="@+id/jhumid"  android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_weight="1" />  </TableRow>  </TableLayout>  </androidx.constraintlayout.widget.ConstraintLayout> |

# ACTIVITY.JAVA

|  |
| --- |
| package com.example.xmljson;  import androidx.appcompat.app.AppCompatActivity; import android.os.Bundle; import android.view.View; import android.widget.Button; import android.widget.TextView; import org.json.JSONObject; import org.w3c.dom.Document; import org.w3c.dom.Element; import org.w3c.dom.NodeList; import java.io.InputStream;  import javax.xml.parsers.DocumentBuilder; import javax.xml.parsers.DocumentBuilderFactory; public class MainActivity extends AppCompatActivity {  Button bx,bj;  TextView tx,tj;  String KEY\_NAME = "name";  String KEY\_LATITUDE = "latitude";  String KEY\_LONGITUDE = "longitude"; |

|  |
| --- |
| String KEY\_TEMPERATURE = "temperature";  String KEY\_HUMIDITY = "humidity";  @Override  protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState); setContentView(R.layout.*activity\_main*); tx=findViewById(R.id.*xtable*); tj=findViewById(R.id.*jtable*);  tx.setVisibility(View.*GONE*); tj.setVisibility(View.*GONE*); bx=findViewById(R.id.*btnxml*); bj=findViewById(R.id.*btnjson*);  //when button is clicked, then this calls the user defined parsing functions  bx.setOnClickListener(this::parseXml); bj.setOnClickListener(this::parseJson);  }  //user defined function to parse xml data private void parseXml(View v){  tx.setVisibility(View.*VISIBLE*); //makes table name visible bx.setVisibility(View.*GONE*); //hide button try{  // getAssets reads the data as sequence of byte from file  InputStream stream = getAssets().open("city\_data.xml"); //DocumentBuilderFactory defines a factory API that enables application to obtain a  //parser that produces DOM(Document Object Model) instance from XML document  DocumentBuilderFactory factory =  DocumentBuilderFactory.*newInstance*();  //DocumentBuillder defines API to obtain DOM instance from XML file  DocumentBuilder db = factory.newDocumentBuilder();  //Document interface represents entire HTML or XML doc  Document dom = db.parse(stream);  //NodeList interface provides the abstraction of an ordered collection of nodes, without defining  //or constraining how this collection is implemented  NodeList city = dom.getElementsByTagName("city"); String name = "";  String latitude = "";  String longitude = "";  String humidity = "";  String temperature = "";  //get the number of nodes in the list  for(int i=0; i<city.getLength(); i++){  //element represents a program element such as package,class or method  Element e = (Element) city.item(i); if(name.equals("")){  name = this.getValue(e,KEY\_NAME);  } if(latitude.equals("")){  latitude = this.getValue(e,KEY\_LATITUDE);  } if(longitude.equals("")){  longitude = this.getValue(e,KEY\_LONGITUDE);  } if(humidity.equals("")){  humidity = this.getValue(e,KEY\_HUMIDITY);  } if(temperature.equals("")){  temperature = this.getValue(e, KEY\_TEMPERATURE );  }  }  ((TextView)findViewById(R.id.*xname*)).setText("Name: "+name); |
| ((TextView)findViewById(R.id.*xlat*)).setText("Latitude:  "+latitude);  ((TextView)findViewById(R.id.*xlong*)).setText("Longitude:"+longitude);  ((TextView)findViewById(R.id.*xhumid*)).setText("Humidity:  "+humidity);  ((TextView)findViewById(R.id.*xtemp*)).setText("Temperature:"+temperature);  }  catch(Exception e){  //method of Throwable class is used to return detailed message of Throwable object  System.*out*.println("Something Went Wrong:"+ e.getMessage());  e.printStackTrace();  } }  private String getValue(Element item, String str) { //get all elements in document with specified tag name NodeList n = item.getElementsByTagName(str);  //get the nodes first child node's value  return n.item(0).getFirstChild().getNodeValue();  }  //Function to parse JSON data private void parseJson(View v){ tj.setVisibility(View.*VISIBLE*); bj.setVisibility(View.*GONE*);  JSONObject city;  try{  InputStream is = getAssets().open("city.json");  //available() return the no. of remaining bytes that can be read from input stream without blocking next method  //call for this input stream int size = is.available(); byte[] buffer = new byte[size]; is.read(buffer); is.close();  //JSONObject class represents immutable JSON object value city = new JSONObject(new String(buffer, "UTF-8")); //getString() returns value mapped by name if exists  ((TextView)findViewById(R.id.*jname*)).setText("Name:  "+city.getString("name"));  ((TextView)findViewById(R.id.*jlat*)).setText("Latitude:  "+city.getString("latitude"));  ((TextView)findViewById(R.id.*jlong*)).setText("Longitude:  "+city.getString("longitude"));  ((TextView)findViewById(R.id.*jtemp*)).setText("Temperature:  "+city.getString("temperature"));  ((TextView)findViewById(R.id.*jhumid*)).setText("Humidity:  "+city.getString("humidity"));  }  catch(Exception ex){ ex.printStackTrace();  }  }  } |

# CITY.XML FILE

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

<city>

<name>Bengaluru</name>

<latitude>12.9716</latitude>

<longitude>77.5946</longitude>

<temperature>28</temperature> <humidity>62</humidity>

</city>

# CITY.JSON

{

"name": "Mysuru",

"latitude": "12.2958",

"longitude": "76.6394",

"temperature": "32",

"humidity": "79"

}

# OUTPUT

