



SIDDAGADDAGANGA INSTITUTE OF TECHNOLOGY, TUMKUR-572103
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
MOBILE APPLICATION DEVELOPMENT LABORATORY(6RCSL02)

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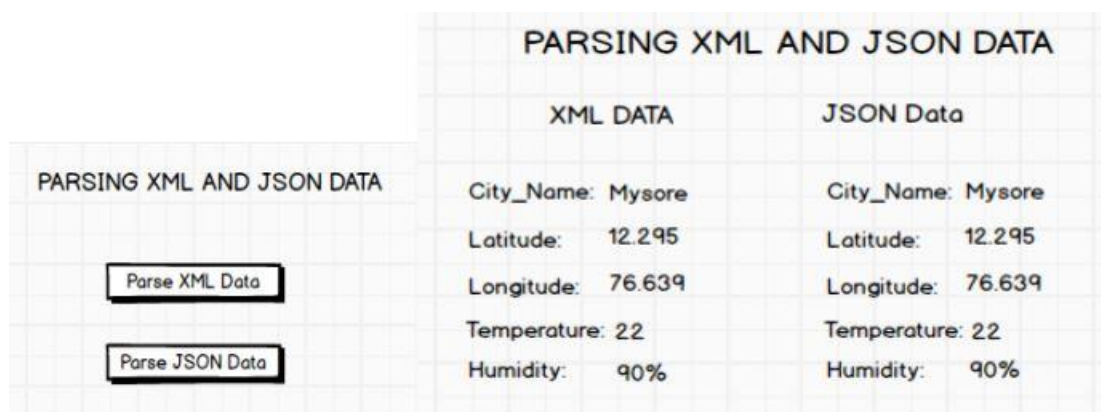
USN: 1SI19CS090

Batch Id: B1

Date: 13-06-22

Program 6

Create two files of XML and JSON type with values for City Name, Latitude, Longitude, Temperature and Humidity. Develop an application to create an activity with two buttons to parse the XML and JSON files which when clicked should display the data in their respective layouts side by side.



FrontEnd - UI Code:

In activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_marginTop="10dp"
        android:text="PARSING XML AND JSON DATA"
        android:textSize="20sp" />

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="fill_parent"
        android:baselineAligned="false"
        android:orientation="horizontal">
```

```

<LinearLayout
    android:layout_width="0dp"
    android:layout_height="fill_parent"
    android:layout_weight="1"
    android:gravity="center"
    android:orientation="vertical">

    <Button
        android:id="@+id/parseXML"
        android:layout_width="match_parent"
        android:layout_height="60dp"
        android:layout_gravity="center"
        android:layout_margin="10dp"
        android:text="Parse XML Data"
        app:backgroundTint="#000000" />        1

    <LinearLayout
        android:id="@+id/resultXML"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:orientation="vertical"
        android:visibility="gone">

        <TextView
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_gravity="center"
            android:layout_weight="0.01"
            android:text="XML Data"
            android:textSize="24sp" />

        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:orientation="vertical"
            android:layout_weight="1"
            >

            <ScrollView
                android:layout_width="match_parent"
                android:layout_height="wrap_content">

                <TextView
                    android:id="@+id/textview1"
                    android:layout_width="match_parent"
                    android:layout_height="wrap_content"
                    android:layout_gravity="center_horizontal"
                    android:layout_marginTop="10dp"
                    android:textColor="@color/black"
                    android:textSize="10sp"
                    tools:ignore="DuplicateIds" />
                </ScrollView>
            </LinearLayout>
        </LinearLayout>
    </LinearLayout>

    <LinearLayout
        android:layout_width="0dp"
        android:layout_height="fill_parent"
        android:layout_weight="1"
        android:gravity="center"
        android:orientation="vertical">

```

```
<Button
    android:id="@+id/parseJSON"
    android:layout_width="match_parent"
    android:layout_height="60dp"
    android:layout_gravity="center"
    android:layout_margin="10dp"
    android:text="Parse JSON Data"
    app:backgroundTint="#000000"
    android:visibility="visible"/>

<LinearLayout
    android:id="@+id/resultJSON"
    android:layout_width="match_parent"
    android:layout_height="10dp"
    android:layout_weight="1"
    android:orientation="vertical"
    android:visibility="gone">

    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:gravity="center"
        android:text="JSON DATA"
        android:textSize="24sp"
        android:layout_weight="0.01"/>

    <ListView
        android:layout_weight="1"
        android:id="@+id/cityData"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        />
    </LinearLayout>
</LinearLayout>
</LinearLayout>
</LinearLayout>
```

In list.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="horizontal"
    android:padding="2dp"
    android:id="@+id/list">

    <TextView
        android:id="@+id/CityName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textColor="#024E46"
        android:textSize="10dp"
        android:text="City_Name:"
        android:textStyle="bold" />
    <TextView
        android:id="@+id/City_Name"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textColor="#024E46"
        android:textSize="10dp"
        android:layout_alignParentRight="true"
        android:textStyle="bold" />

    <TextView
        android:id="@+id/Latitude_data"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/CityName"
        android:text="Latitude:"
        android:textColor="#024E46"
        android:textSize="10dp"
        android:textStyle="bold" />
    <TextView
        android:id="@+id/JSON_latitude"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/City_Name"
        android:layout_alignParentRight="true"
        android:layout_marginEnd="10dp"
        android:layout_marginTop="10dp"
        android:textColor="#A5BAB8"
        android:textSize="10dp" />
    <TextView
        android:id="@+id/Longitude_data"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/Latitude_data"
        android:textColor="#024E46"
        android:textSize="10dp"
        android:text="Longitude:"
        android:textStyle="bold" />
    <TextView
        android:id="@+id/JSON_longitude"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/Latitude_data"
        android:layout_alignParentRight="true"
```

```
        android:textColor="#A5BAB8"
        android:textSize="10dp"
    />
    <TextView
        android:id="@+id/temperature_data"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/JSON_longitude"
        android:textColor="#024E46"
        android:textSize="10dp"
        android:text="Temperature:"
        android:textStyle="bold" />
    <TextView
        android:id="@+id/JSON_temperature"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/JSON_longitude"
        android:layout_alignParentRight="true"
        android:layout_marginTop="10dp"
        android:textColor="#A5BAB8"
        android:textSize="10dp" />
    <TextView
        android:id="@+id/humidity_data"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/JSON_temperature"
        android:textColor="#024E46"
        android:textSize="10dp"
        android:text="Humidity:"
        android:textStyle="bold" />
    <TextView
        android:id="@+id/JSON_humidity"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/JSON_temperature"
        android:layout_alignParentRight="true"
        android:layout_marginTop="10dp"
        android:textColor="#A5BAB8"
        android:textSize="10dp" />
</RelativeLayout>
```

BackEnd - Java Code:

In MainActivity.java

```
package com.example.parser_1si19cs090;

import androidx.appcompat.app.AppCompatActivity;

import android.content.res.AssetManager;
import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.widget.Button;
import android.widget.ListAdapter;
import android.widget.ListView;
import android.widget.SimpleAdapter;
import android.widget.TextView;

import org.json.JSONArray;
import org.json.JSONException;
import org.json.JSONObject;
import org.w3c.dom.Document;
import org.w3c.dom.Element;
import org.w3c.dom.Node;
import org.w3c.dom.NodeList;

import java.io.IOException;
import java.io.InputStream;
import java.util.ArrayList;
import java.util.HashMap;

import javax.xml.parsers.DocumentBuilder;
import javax.xml.parsers.DocumentBuilderFactory;

public class MainActivity extends AppCompatActivity {

    Button parseXML,parseJSON;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        parseXML=(Button) findViewById(R.id.parseXML);
        parseJSON=(Button) findViewById(R.id.parseJSON);

        parseJSON.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String json_city=getListData();

                try {

                    ArrayList<HashMap<String, String>> userList = new ArrayList<>();
                    ListView listview = findViewById(R.id.cityData);

                    JSONObject jsObj = new JSONObject(json_city);
                    JSONArray jsArray = jsObj.getJSONArray("CityDetails");
                    for (int i = 0; i < jsArray.length(); i++) {
                        HashMap<String, String> city = new HashMap<>();
```

```

        JSONObject obj = jsonArray.getJSONObject(i);
        city.put("City_Name", obj.getString("City_Name"));
        city.put("Latitude", obj.getString("Latitude"));
        city.put("Longitude", obj.getString("Longitude"));
        city.put("Temperature", obj.getString("Temperature"));
        city.put("Humidity", obj.getString("Humidity"));
        userList.add(city);
    }
    findViewById(R.id.parseJSON).setVisibility(View.GONE);
    findViewById(R.id.resultJSON).setVisibility(View.VISIBLE);
    ListAdapter simpleAdapter = new SimpleAdapter(getApplicationContext(), userList, R.layout.list, new
String[] {"City_Name", "Latitude", "Longitude", "Temperature", "Humidity"}, new int[] {R.id.City_Name,
R.id.JSON_latitude, R.id.JSON_longitude, R.id.JSON_temperature, R.id.JSON_humidity});
    listView.setAdapter(simpleAdapter);

    } catch (JSONException ex) {
        Log.e("JsonParser ", "Exception", ex);
    }
}

private String getListData() {

    String jsonString = null;
    try {
        AssetManager manager = getApplicationContext().getAssets();
        InputStream is = manager.open("data.json");
        int size = is.available();
        byte[] buffer = new byte[size];
        is.read(buffer);
        is.close();
        jsonString = new String(buffer, "UTF-8");
        //return new String(buffer, "UTF-8");

    } catch (IOException e) {
        e.printStackTrace();
        Log.e("JSONPARSER", "Failed to read asset file: ", e);
        return null;
    }
    return jsonString;
}

});

parseXML.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {

        TextView tv1=(TextView)findViewById(R.id.textview1);

        try {
            InputStream is = getAssets().open("file.xml");

            //        AssetManager manager = getApplicationContext().getAssets();
            //        InputStream is = manager.open("data.xml");

            DocumentBuilderFactory dbFactory = DocumentBuilderFactory.newInstance();
            DocumentBuilder dBuilder = dbFactory.newDocumentBuilder();
            Document doc = dBuilder.parse(is);

            Element element=doc.getDocumentElement();

```

```

        element.normalize();

        NodeList nList = doc.getElementsByTagName("CityDetails");

        for (int i=0; i<nList.getLength(); i++) {

            Node node = nList.item(i);
            if (node.getNodeType() == Node.ELEMENT_NODE) {
                Element element2 = (Element) node;
                tv1.setText( tv1.getText().toString()+"\nCity_Name :"+getValue("City_Name", element2).toString());
                tv1.setText( tv1.getText().toString()+"\nLatitude :"+getValue("Latitude", element2).toString());
                tv1.setText( tv1.getText().toString()+"\nLongitude :"+getValue("Longitude", element2).toString());
                tv1.setText( tv1.getText().toString()+"\nTemperature :"+getValue("Temperature",
element2).toString());
                tv1.setText( tv1.getText().toString()+"\nHumidity :"+getValue("Humidity", element2).toString());
                tv1.setText(String.format("%s-----", tv1.getText()));

            }
        }
        findViewById(R.id.parseXML).setVisibility(View.GONE);
        findViewById(R.id.resultXML).setVisibility(View.VISIBLE);
    } catch (Exception e) {e.printStackTrace();}

}

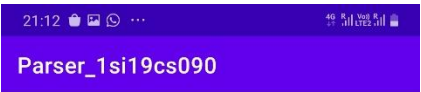
private String getValue(String tag, Element element) {
    NodeList nodeList = element.getElementsByTagName(tag).item(0).getChildNodes();
    Node node = nodeList.item(0);
    return node.getNodeValue();
}

});

}
}

```


Output - Snapshots :



PARSING XML AND JSON DATA

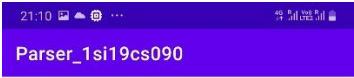
PARSING XML AND JSON DATA XML Data

City_Name :Mysore
Latitude :12.295
Longitude :76.639
Temperature :22
Humidity :
90%

PARSE XML DATA

PARSE JSON DATA

PARSE JSON DATA



PARSING XML AND JSON DATA JSON Data

City_Name: Mysore
Latitude: 12.295
Longitude: 76.639
Temperature: 22
Humidity: 90%

PARSE XML DATA

