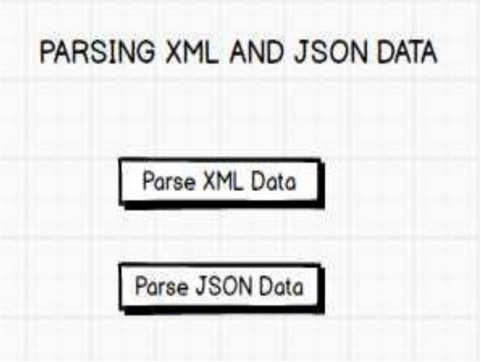
Experiment-6

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.



1) Firstly Create an Application by Name “jsonAndxmlParser”
2) Go to xml code of design change the layout to “RelativeLayout”
3) Add TextView component & change the following properties:

  - Id: textview
  - Text: “PARSING XML AND JSON”
  - Align: Center

- Center-Align

4) Add Two Buttons to Design & change the name “btn_xml” & “btn_json” with following onclick functions:

  - id:btnXml
  - `text="PARSING XML Data"`

  - id: btnJson
  - `text="Parse JSON Data"`
  - `Center-Align`

5) Add TextView component & change the following properties:

- Size: 38dp
- Id: txtXml and txtJson

```
Hint=" XML "

Hint=" JSON"
```

- Center-Align

6) Add Assets folder by following the given hierarchy:
App->new->folder->Assests folder

- Create **a.xml** file inside assets folder and paste the below Xml Data
- Create **a.json** file inside assets folder and paste the below Json Data

7) Inside the assets folder create new files of xml and json using the following hierarchy:

new->file->a.xml

a.xml

```
<records>
<location>
    <place>Mangalore</place>
    <longitude>30</longitude>
    <latitude>25</latitude>
    <temperature>26</temperature>
    <humidity>15</humidity>
</location>
<location>
    <place>Bangalore</place>
    <longitude>40</longitude>
    <latitude>35</latitude>
    <temperature>36</temperature>
    <humidity>25</humidity>
</location>
</records>
```

new->file->a.json

a.json

```
[
        {
      "place": "Mangalore",
      "longitude":30,
      "latitude":25,
      "temperature":26,
      "humidity":15
      },

      {
          "place": "Bangalore",
          "longitude":40,
          "latitude":35,
          "temperature":36,
          "humidity":25
      }
]
```

9) Add Listeners to Button Click Event:

- Create a class which implements OnClickListener interface.
- Override onClick() method of OnClickListener Interface.
- Register the button for click event by calling setOnClickListener() method of View class and pass the object of the class that implemented OnClickListener Interface.

```
package com.example.jsonAndxmlparser;

import androidx.appcompat.app.AppCompatActivity;

import android.annotation.SuppressLint;
import android.os.Build;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import android.widget.Toast;

import org.json.JSONArray;

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.InputStream;
import java.nio.charset.StandardCharsets;

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

public class MainActivity extends AppCompatActivity {

    Button b_xml, b_json;
    TextView displayX,displayJ;

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

        b_xml = findViewById(R.id.btnXml);
        b_json = findViewById(R.id.btnJson);

        displayX = findViewById(R.id.txtXml);
       displayJ = findViewById(R.id.txtJson);

        b_xml.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                try {
                    InputStream is = getAssets().open("a.xml");
                    DocumentBuilderFactory dbf = DocumentBuilderFactory.newInstance();
                    DocumentBuilder db = dbf.newDocumentBuilder();
                Document d = db.parse(is);
                StringBuilder s = new StringBuilder();
                s.append("XML Data");
                s.append("\n-----------------------");
                NodeList nodeList = d.getElementsByTagName("location");
                for (int i = 0; i < nodeList.getLength(); i++) {
                    Node node = nodeList.item(i);
                    if (node.getNodeType() == Node.ELEMENT_NODE) {
                        Element element = (Element) node;
                        s.append("\nPlace: ").append(getValue("place", element));
                        s.append("\nLatitude: ").append(getValue("latitude", element));
                        s.append("\nLongitude: ").append(getValue("longitude", element));
                        s.append("\nTemperature: ").append(getValue("temperature", element));
                        s.append("\nHumidity: ").append(getValue("humidity", element));
                        s.append("\n--------------------");
                    }
                }
                displayX.setText(s.toString());

            } catch (Exception e) {
                e.printStackTrace();
                Toast.makeText(MainActivity.this, "Error Parsing XML",
                Toast.LENGTH_SHORT).show();
            }
        }
    });

    b_json.setOnClickListener(new View.OnClickListener() {
   @Override
 public void onClick(View v) {
     String json;
     StringBuilder jsontxt = new StringBuilder();
     String str=null;
     try {
         InputStream is = getAssets().open("a.json");
         int size = is.available();
         byte[] buffer = new byte[size];
         is.read(buffer);
         json = new String(buffer, StandardCharsets.UTF_8);
         JSONArray jsonArray = new JSONArray(json);
         jsontxt.append("JSON DATA");
         jsontxt.append("\n-------------------");
         for (int i = 0; i < jsonArray.length(); i++) {
             JSONObject jsonObject = jsonArray.getJSONObject(i);
 jsontxt.append("\nPlace: ").append(jsonObject.getString("place"));
jsontxt.append("\nLatitude: ").append(jsonObject.getString("latitude"));
 jsontxt.append("\nLongitude: ").append(jsonObject.getString("longitude"));

jsontxt.append("\nTemperature:").append(jsonObject.getString("temperature"));

jsontxt.append("\nHumidity:").append(jsonObject.getString("humidity"));
 jsontxt.append("\n------------------------");
                            }
                            displayJ.setText(jsontxt.toString());
                            is.close();
                         }
                         catch (Exception e){
                            e.printStackTrace();
Toast.makeText(MainActivity.this,"Error in  reading",Toast.LENGTH_LONG).show();
                                 }
                              }
                           }
          );
       }
       private String getValue (String tag, Element element){
          return
    element.getElementsByTagName(tag).item(0).getChildNodes().item(0).getNodeValue();
       }
    }
```