Write simple Android program for Android Activity Life Cycle.

MainActivity.java

package com.technoboy.androidactivitylifecycle;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.util.Log;

public class MainActivity extends AppCompatActivity {

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

        Log.i("Life Cycle","onCreate Method Called");
    }
    @Override
    protected void onStart() {
        super.onStart();
        Log.i("Life Cycle","onStart Method Called");
    }
    @Override
    protected void onResume() {
        super.onResume();
        Log.i("Life Cycle","onResume Method Called");
    }
    @Override
    protected void onPause() {
        super.onPause();
        Log.i("Life Cycle","onPause Method Called");
    }
    @Override
    protected void onStop() {
        super.onStop();
        Log.i("Life Cycle","onStop Method Called");
    }
    @Override
    protected void onRestart() {
        super.onRestart();
        Log.i("Life Cycle","onRestart Method Called");
    }
    @Override
    protected void onDestroy() {
        super.onDestroy();
        Log.i("Life Cycle","onDestroy Method Called");
    }
}

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Write a simple Android program for Activity overloading

activit_main.xml

```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:text="@string/name"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"/>

    <EditText
        android:id="@+id/edittext1"
        android:layout_width="214dp"
        android:layout_height="wrap_content"/>

    <Button
        android:id="@+id/btn1"
        android:layout_width="106dp"
        android:layout_height="wrap_content"
        android:text="@string/ok"/>

    <Button
        android:id="@+id/btn2"
        android:layout_width="106dp"
        android:layout_height="wrap_content"
        android:text="@string/cancel"/>

</LinearLayout>
```

ActivityMain.java

```java
package com.technoboy.activityoverloading;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.KeyEvent;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    Button btn1,btn2;
    EditText editText;
```

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

    btn1=findViewById(R.id.btn1);
    btn2=findViewById(R.id.btn2);
    editText=findViewById(R.id.edittext1);

    btn1.setOnClickListener(btnListner);
    btn2.setOnClickListener(btnListner);
    editText.setOnFocusChangeListener(
        new View.OnFocusChangeListener() {
            @Override
            public void onFocusChange(View v, boolean hasFocus) {
                Toast.makeText(getBaseContext(), v.getId()+" has focus "+ hasFocus,
Toast.LENGTH_SHORT).show();
            }
        }
    );
}
private View.OnClickListener btnListner=new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        Toast.makeText(getBaseContext(), ((Button)v).getText()+" was Clicked",
Toast.LENGTH_SHORT).show();
    }
};

@Override
public boolean onKeyDown(int keyCode, KeyEvent event) {
    switch (keyCode){
        case KeyEvent.KEYCODE_DPAD_CENTER:
            Toast.makeText(getBaseContext(), "Center was Clicked",
Toast.LENGTH_SHORT).show();
            break;
        case KeyEvent.KEYCODE_DPAD_LEFT:
            Toast.makeText(getBaseContext(), "Left Arrow was Clicked",
Toast.LENGTH_SHORT).show();
            break;
        case KeyEvent.KEYCODE_DPAD_RIGHT:
            Toast.makeText(getBaseContext(), "Right Arrow was Clicked",
Toast.LENGTH_SHORT).show();
            break;
        case KeyEvent.KEYCODE_DPAD_UP:
            Toast.makeText(getBaseContext(), "Up Arrow was Clicked",
Toast.LENGTH_LONG).show();
            break;
        case KeyEvent.KEYCODE_DPAD_DOWN:
            Toast.makeText(getBaseContext(), "Down Arrow was Clicked",
Toast.LENGTH_SHORT).show();
            break;
    }
    return false;   }
}
```

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Write an android code to fetch weburl into mobile screen using webview.

AndroidManifest.xml

<uses-permission android:name="android.permission.INTERNET"></uses-permission>
activity_main.xml

```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">

    <TextView
        android:id="@+id/input_layout_URL_Name"
        android:layout_width="wrap_content"
        android:layout_height="0dp"
        android:layout_marginTop="60dp"
        android:text="@string/welcome_to_webview"
        android:textSize="24sp"
        android:textStyle="bold"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_editor_absoluteX="88dp" />

    <EditText
        android:id="@+id/URL_Name"
        android:layout_width="wrap_content"
        android:layout_height="0dp"
        android:layout_marginTop="44dp"
        android:ems="10"
        android:hint="@string/enter_url"
        android:inputType="textPersonName"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@id/input_layout_URL_Name"
        app:layout_editor_absoluteX="99dp"
        tools:ignore="TextFields" />

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="39dp"
        android:layout_marginTop="72dp"
        android:text="@string/enter"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@id/URL_Name"
        app:layout_editor_absoluteX="161dp" />

    <WebView
        android:id="@+id/webview"
```

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```
    android:layout_width="319dp"
    android:layout_height="192dp"
    android:layout_marginStart="8dp"
    android:layout_marginEnd="8dp"
    android:layout_marginTop="10dp"
    android:layout_marginBottom="8dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@id/button"/>
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```java
package com.technoboy.webview;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.webkit.WebView;
import android.widget.Button;
import android.widget.EditText;

public class MainActivity extends AppCompatActivity {

    EditText editText;
    Button button;
    WebView webView;

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

        editText=findViewById(R.id.URL_Name);
        button=findViewById(R.id.button);
        webView=findViewById(R.id.webview);
        webView.setWebViewClient(new MyBrowser());
        button.setOnClickListener(
            new View.OnClickListener() {
                @Override
                public void onClick(View v) {
                    webView.getSettings().setLoadsImagesAutomatically(true);
                    webView.setScrollBarStyle(View.SCROLLBARS_INSIDE_OVERLAY);
                    webView.loadUrl(editText.getText().toString());
                }
            }
        );
    }
}
```

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MyBrowser.java
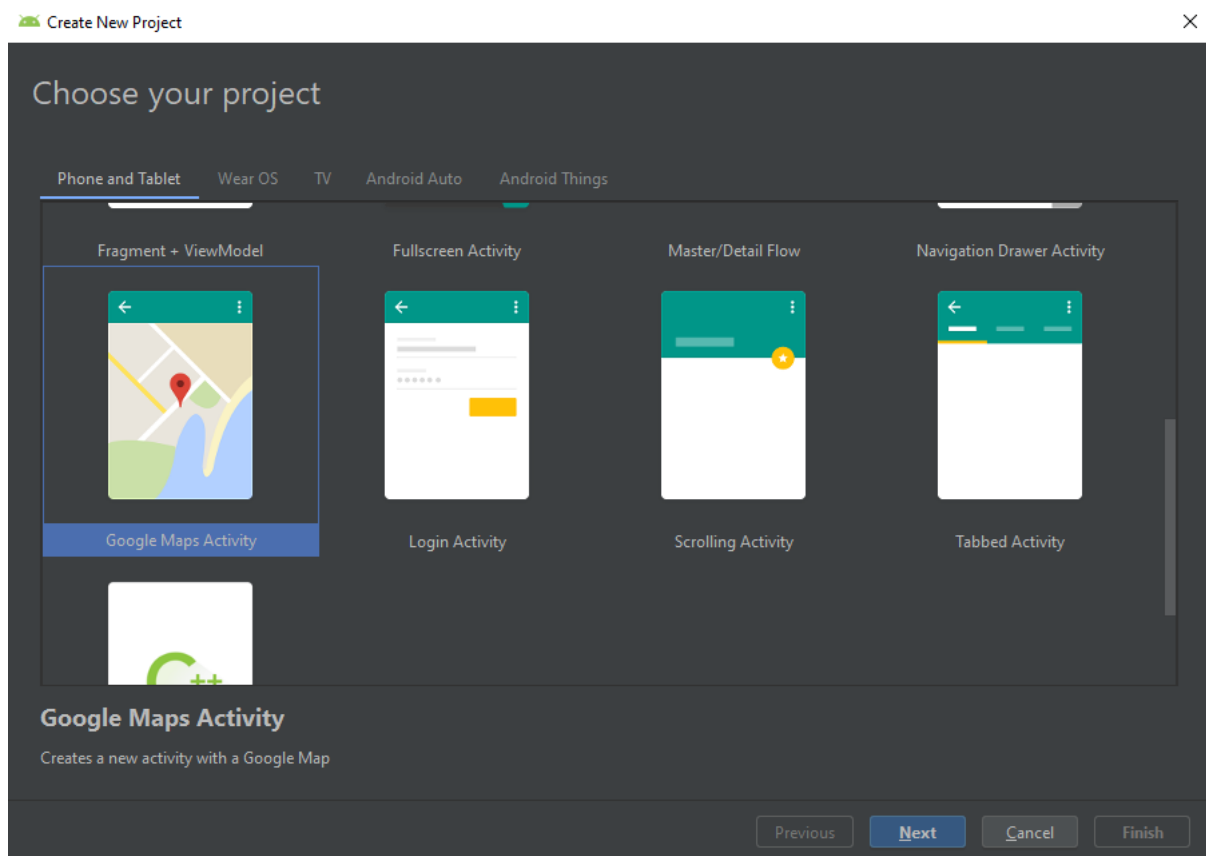
package com.technoboy.webview;

import android.os.Build;
import android.webkit.WebResourceRequest;
import android.webkit.WebView;
import android.webkit.WebViewClient;
import androidx.annotation.RequiresApi;

```java
class MyBrowser extends WebViewClient {
    @RequiresApi(api = Build.VERSION_CODES.LOLLIPOP)
    @Override
    public boolean shouldOverrideUrlLoading(WebView view, WebResourceRequest request) {
        view.loadUrl(request.getUrl().toString());
        return true;
    }
}
```

Write an android code for Android Google Maps Current Location.

For detail: Practical No:21 Link: https://github.com/TechnoJunior/Android-PDF

MapsActivity.java

package com.technoboy.googlemapscurrentlocation;

import androidx.fragment.app.FragmentActivity;

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;

public class MapsActivity extends FragmentActivity implements OnMapReadyCallback {

    private GoogleMap mMap;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_maps);
        // Obtain the SupportMapFragment and get notified when the map is ready to be used.

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```
        SupportMapFragment mapFragment = (SupportMapFragment) getSupportFragmentManager()
                .findFragmentById(R.id.map);
        mapFragment.getMapAsync(this);
    }
    @Override
    public void onMapReady(GoogleMap googleMap) {
        mMap = googleMap;

        // Add a marker in Sydney and move the camera
        LatLng imcost= new LatLng(19.1876505, 72.9548407);
        mMap.addMarker(new MarkerOptions().position(imcost).title("IMCOST
College,Thane"));
        mMap.moveCamera(CameraUpdateFactory.newLatLng(imcost));
    }
}
```

Write an android program for Simple calculator.

Activity_main.xml

```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">

    <EditText
        android:id="@+id/editText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="number"
        android:hint="@string/no1"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.123" />

    <EditText
        android:id="@+id/editText2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="number"
        android:hint="@string/no2"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.241" />

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/add"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toStartOf="@+id/button2"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <Button
        android:id="@+id/button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/minus"
        app:layout_constraintBottom_toBottomOf="parent"
```

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```xml
        app:layout_constraintEnd_toStartOf="@+id/button3"
        app:layout_constraintHorizontal_bias="0.9"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <Button
        android:id="@+id/button3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/multiply"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.693"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <Button
        android:id="@+id/button4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/divide"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.965"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```java
package com.technoboy.simplecalculator;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    Button add,sub,div,mul;
    EditText no1,no2;
    int num1,num2;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        add=findViewById(R.id.button);
        sub=findViewById(R.id.button2);
        mul=findViewById(R.id.button3);
```

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```java
    div mul=findViewById(R.id.button4);

    no1=findViewById(R.id.editText);
    no2=findViewById(R.id.editText2);

    add.setOnClickListener(
        new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                num1= Integer.parseInt(no1.getText().toString());
                num2=Integer.parseInt(no2.getText().toString());
                Toast.makeText(MainActivity.this, "Addition : "+ (num1 + num2),
Toast.LENGTH_SHORT).show();
            }
        }
    );
    sub.setOnClickListener(
        new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                num1= Integer.parseInt(no1.getText().toString());
                num2=Integer.parseInt(no2.getText().toString());
                Toast.makeText(MainActivity.this, "Subtraction : "+ (num1 - num2),
Toast.LENGTH_SHORT).show();
            }
        }
    );
    mul.setOnClickListener(
        new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                num1= Integer.parseInt(no1.getText().toString());
                num2=Integer.parseInt(no2.getText().toString());
                Toast.makeText(MainActivity.this, "Multiplication : "+ (num1 * num2),
Toast.LENGTH_SHORT).show();
            }
        }
    );
    div.setOnClickListener(
        new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                num1= Integer.parseInt(no1.getText().toString());
                num2=Integer.parseInt(no2.getText().toString());
                Toast.makeText(MainActivity.this, "Division : "+ (num1 / num2),
Toast.LENGTH_SHORT).show();
            }
        }
    );
  }
}
```

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Write an android program for temperature converter from Fahrenheit to Celsius and vice versa

activity_main.xml

```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">

    <EditText
        android:id="@+id/editText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="number"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.454"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.179" />

    <Button
        android:id="@+id/button"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="@string/ftc"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.412" />

    <Button
        android:id="@+id/button2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="@string/ctf"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```java
package com.technoboy.temperatureconverter;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
```

-TechnoBoy

```java
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    EditText temp;
    Button ftc,ctf;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        temp=findViewById(R.id.editText);
        ftc=findViewById(R.id.button);
        ctf=findViewById(R.id.button2);


        ftc.setOnClickListener(
            new View.OnClickListener() {
                @Override
                public void onClick(View v) {
                    double temperature=Integer.parseInt(temp.getText().toString());
                    Double b=temperature-32;
                    Double c=b*5/9;
                    String r=String.valueOf(c);
                    Toast.makeText(MainActivity.this,r+"°C",Toast.LENGTH_SHORT).show();
                }});

        ctf.setOnClickListener(
            new View.OnClickListener() {
                @Override
                public void onClick(View v) {
                    double temperature=Integer.parseInt(temp.getText().toString());
                    Double b=temperature*9/5+32;
                    String r=String.valueOf(b);
                    Toast.makeText(MainActivity.this,r+"°F",Toast.LENGTH_SHORT).show();
                }});}}
```

Strings.xml

```xml
<resources>
    <string name="app_name">Temperature Converter</string>
    <string name="ctf">Celsius to Fahrenheit</string>
    <string name="ftc">Fahrenheit to Celsius</string>
</resources>
```

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Write an android program for shared preference to store value in name-value pair.

Activity_main.xml

```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">

    <EditText
        android:id="@+id/editText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:hint="@string/name"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.173" />

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/add"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.526"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/editText"
        app:layout_constraintVertical_bias="0.225" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```java
package com.technoboy.sharedpreferences;

import androidx.appcompat.app.AppCompatActivity;

import android.content.SharedPreferences;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
```

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```java
public class MainActivity extends AppCompatActivity {

    EditText name;
    Button add;

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

        name=findViewById(R.id.editText);
        add=findViewById(R.id.button);

        add.setOnClickListener(
            new View.OnClickListener() {
                @Override
                public void onClick(View v) {
                    SharedPreferences
sharedPreferences=getSharedPreferences("Data",MODE_PRIVATE);
                    String nm=name.getText().toString();
                    SharedPreferences.Editor editor=sharedPreferences.edit();
                    editor.putString("Name",nm);
                    editor.commit();
                    Toast.makeText(MainActivity.this, "Name added in Shared Preferences",
Toast.LENGTH_SHORT).show();
                }
            }
        );
    }
}
```
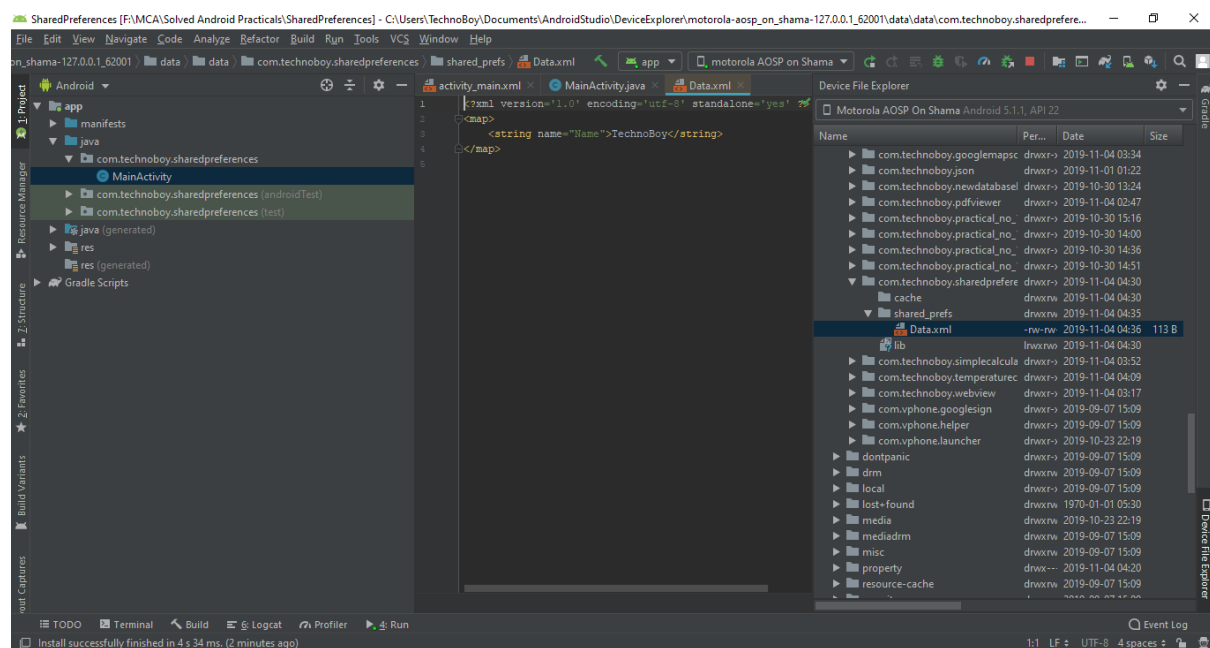
Output:

After clicking on Add Button

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Write a simple Login page program using android code.

Create an application for login form. For successful login, display welcome page and in the cast of failure display alert box indicating the error message and attempts made. Disable the submit button after 3 wrong attempts and display the alert indicating the same.

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">


    <EditText
        android:id="@+id/editText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:hint="@string/username"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.404"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.204"
        android:importantForAutofill="no" />

    <EditText
        android:id="@+id/editText2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="@string/password"
        android:inputType="textPassword"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.404"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.306"
        android:importantForAutofill="no" />

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
```

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```xml
        android:layout_height="wrap_content"
        android:text="@string/login"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.255"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.415" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```java
package com.technoboy.loginpage;

import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;
import android.annotation.SuppressLint;
import android.content.DialogInterface;
import android.content.Intent;
import android.content.SharedPreferences;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

import static android.content.SharedPreferences.*;

public class MainActivity extends AppCompatActivity {

    EditText username,password;
    TextView attempts;
    Button login;
    int counter=3;

    @SuppressLint("SetTextI18n")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        username=findViewById(R.id.editText);
        password=findViewById(R.id.editText2);
        login=findViewById(R.id.button);
        attempts=findViewById(R.id.textView2);
        attempts.setText("No. of Attempts Remaining : "+counter);
```

-TechnoBoy

```java
login.setOnClickListener(
    new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            if(username.getText().length()==0){
                username.setError("Username cannot be Blank");
            }
            else if(password.getText().length()==0){
                password.setError("Password cannot be Blank");
            }
            else{
                if(username.getText().toString().equals("admin") &&
password.getText().toString().equals("admin")){
                    Intent intent=new Intent(MainActivity.this,Welcome.class);
                    startActivity(intent);
                }
                else
                {
                    counter--;
                    attempts.setText("No. of Attempts Remaining : "+counter);
                    if(counter==0){
                        login.setEnabled(false);
                        AlertDialog.Builder builder=new AlertDialog.Builder(MainActivity.this);
                        builder.setMessage("Invalid Login Details")
                            .setPositiveButton("Ok", new DialogInterface.OnClickListener() {
                                @Override
                                public void onClick(DialogInterface dialog, int which) {
                                    dialog.cancel();
                                }
                            })
                            .show();
                    }
                }
            }
        }
    }
);
}
}
```

activity_welcome.xml

```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=".Welcome">

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/welcome"
```

-TechnoBoy

```
        android:textSize="36sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Create a login form with remember me checkbox. Save the user name and password if the check box is checked using shared preference and show the welcome page when login button is clicked.

Activity_main.xml

```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">

    <EditText
        android:id="@+id/editText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:hint="@string/username"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.404"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.204"
        android:importantForAutofill="no" />

    <EditText
        android:id="@+id/editText2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="@string/password"
        android:inputType="textPassword"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.404"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.306"
        android:importantForAutofill="no" />

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/login"
        app:layout_constraintBottom_toBottomOf="parent"
```

-TechnoBoy

```
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />

  <CheckBox
    android:id="@+id/checkBox"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="284dp"
    android:layout_marginEnd="240dp"
    android:layout_marginRight="240dp"
    android:text="@string/remember_me"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintTop_toTopOf="parent" />


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

MainActivity.java

```java
package com.technoboy.loginsharedpreferences;

import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.content.SharedPreferences;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.CheckBox;
import android.widget.CheckedTextView;
import android.widget.EditText;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {

    EditText username,password;
    TextView attempts;
    Button login;
    CheckBox checkBox;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        username=findViewById(R.id.editText);
        password=findViewById(R.id.editText2);
        login=findViewById(R.id.button);
        checkBox=findViewById(R.id.checkBox);

        login.setOnClickListener(
            new View.OnClickListener() {
              @Override
              public void onClick(View v) {
                  SharedPreferences
```

```java
sharedPreferences=getSharedPreferences("LoginDetails",MODE_PRIVATE);
                SharedPreferences.Editor editor=sharedPreferences.edit();

                if(username.getText().length()==0){
                    username.setError("Username cannot be Blank");
                }
                else if(password.getText().length()==0){
                    password.setError("Password cannot be Blank");
                }
                else{
                    if(username.getText().toString().equals("technoboy") &&
password.getText().toString().equals("technoboy")){
                        if(checkBox.isChecked()){
                            editor.putString("username",username.getText().toString());
                            editor.putString("password",password.getText().toString());
                            editor.commit();
                        }
                        Intent intent=new Intent(MainActivity.this,Welcome.class);
                        startActivity(intent);
                    }
                }
            }
        }
    );
  }
}
```

activity_welcome.xml

```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=".Welcome">

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/welcome"
        android:textSize="36sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```
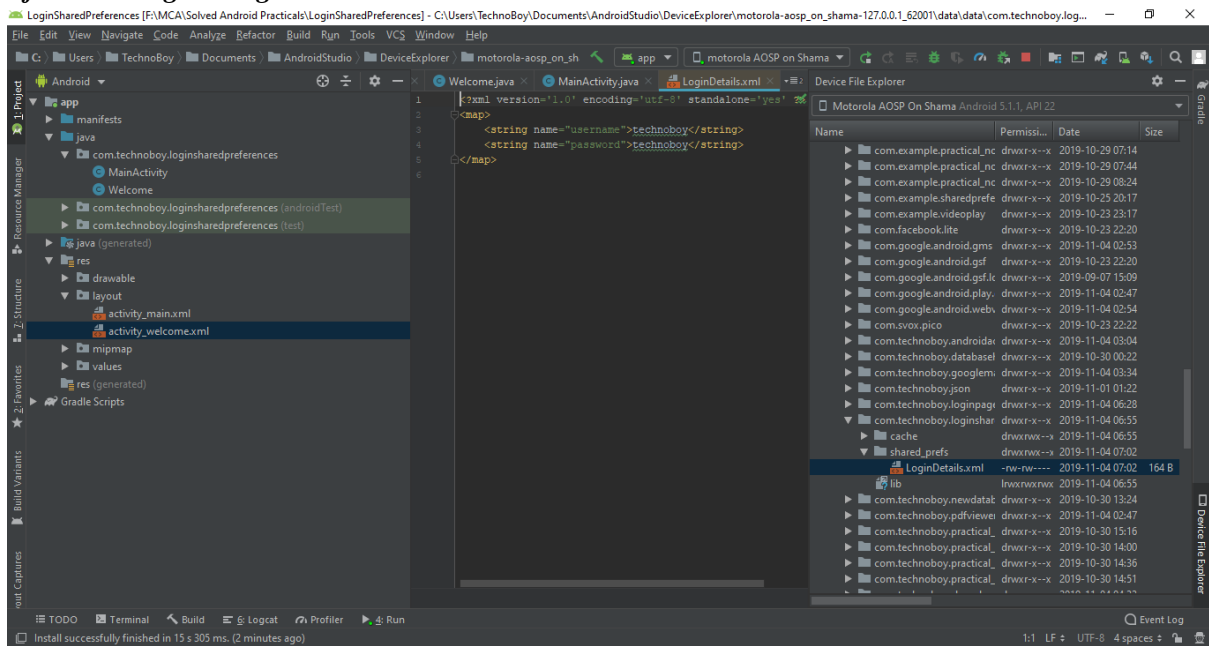
-TechnoBoy

Strings.xml

```
<resources>
    <string name="app_name">LoginSharedPreferences</string>
    <string name="login">Login</string>
    <string name="password">Enter Password</string>
    <string name="username">Enter UserName</string>
    <string name="remember_me">Remember Me</string>
    <string name="welcome">Welcome</string>
</resources>
```

After Clicking on Login

-TechnoBoy

Write an android application to parse JSON data using JSON objects and set it in Textview. Create JSON data with the following information: employee name, age, department and salary

Write an Android Program to Demonstrate Parsing a Json Object

JSON Urls :

GOT: https://api.myjson.com/bins/v8v8g

AndroidManifest.xml

<uses-permission android:name="android.permission.INTERNET"></uses-permission>

Activiy_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">

    <Button
        android:id="@+id/button"
        android:text="@string/show"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginBottom="10dp"/>

    <ScrollView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_below="@id/button">
        <TextView
            android:id="@+id/textview"
            android:padding="5dp"
            android:textSize="24sp"
            android:hint="@string/data"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"/>
    </ScrollView>

</RelativeLayout>
```

MainActivity.java

```
package com.technoboy.jsonobject;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
```

-TechnoBoy

```java
import android.widget.Button;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {

    public static TextView show;
    Button fetch;
    fetchData fd;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        show=findViewById(R.id.textview);
        fetch=findViewById(R.id.button);

        fetch.setOnClickListener(
            new View.OnClickListener() {
                @Override
                public void onClick(View v) {
                    fd=new fetchData();
                    fd.execute();
                }
            }
        );
    }
}
```

fetchData.java

```java
package com.technoboy.jsonobject;

import android.os.AsyncTask;

import org.json.JSONArray;
import org.json.JSONException;
import org.json.JSONObject;

import java.io.BufferedReader;
import java.io.IOException;
import java.io.InputStreamReader;
import java.net.HttpURLConnection;
import java.net.URL;

public class fetchData extends AsyncTask<Void, Void, Void> {
    String data="",singleline,alldata;
    @Override
    protected Void doInBackground(Void... voids) {
        try {
            URL url=new URL("https://api.myjson.com/bins/v8v8g");
            HttpURLConnection httpURLConnection=(HttpURLConnection) url.openConnection();
            BufferedReader br=new BufferedReader(new
InputStreamReader(httpURLConnection.getInputStream()));
```

-TechnoBoy

```java
        String line="";
        while(line!=null){
          line=br.readLine();
          data=data+line;
        }

      JSONArray jsonArray=new JSONArray(data);
      for(int i=0;i<jsonArray.length();i++){
        JSONObject jsonObject=jsonArray.getJSONObject(i);
        singleline=jsonObject.getString("emp_name")+" --> "+jsonObject.getString("emp_age")+" -->
"
            +jsonObject.getString("emp_dept")+" --> "+jsonObject.getString("emp_sal")+"\n";
        alldata=alldata+singleline;
      }
    } catch (IOException | JSONException e) {
      e.printStackTrace();
    }

    return null;
  }

  @Override
  protected void onPostExecute(Void aVoid) {
    super.onPostExecute(aVoid);
    MainActivity.show.setText(alldata);
  }
}
```
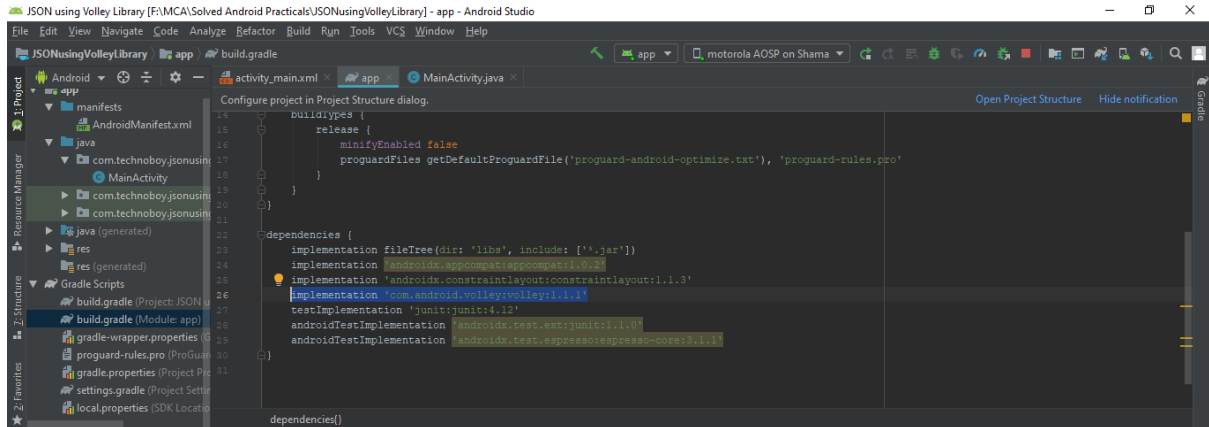
Write an android program to demonstrate volley library.

Write an android application to retrieve the JSON object using Volley library and display it in a text view.

build.gradle

AndroidManifest.xml

```xml
<uses-permission android:name="android.permission.INTERNET"/>
```

Activity_main.xml

```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">

    <TextView
        android:id="@+id/show"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="20sp"/>

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentStart="true"
        android:layout_alignParentLeft="true"
        android:layout_alignParentBottom="true"
        android:layout_marginStart="149dp"
        android:layout_marginLeft="149dp"
        android:layout_marginBottom="154dp"
        android:text="@string/parse" />
</RelativeLayout>
```

-TechnoBoy

MainActivity.java

```java
package com.technoboy.jsonusingvolleylibrary;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import com.android.volley.RequestQueue;
import com.android.volley.Response;
import com.android.volley.VolleyError;
import com.android.volley.toolbox.JsonArrayRequest;
import com.android.volley.toolbox.Volley;

import org.json.JSONArray;
import org.json.JSONException;
import org.json.JSONObject;

import java.io.BufferedReader;
import java.io.IOException;
import java.io.InputStreamReader;
import java.net.HttpURLConnection;
import java.net.URL;

public class MainActivity extends AppCompatActivity {

    Button parse;
    TextView textView;
    RequestQueue result;
    String data;

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

        textView=findViewById(R.id.show);
        parse=findViewById(R.id.button);
        result= Volley.newRequestQueue(this);

        parse.setOnClickListener(
            new View.OnClickListener() {
                @Override
                public void onClick(View v) {
                    jsonparse();
                }
            }
        );
    }

    private void jsonparse() {
        String url="https://api.myjson.com/bins/v8v8g";
        final JsonArrayRequest request=new JsonArrayRequest(url, new
Response.Listener<JSONArray>() {
```

-TechnoBoy

```
    @Override
    public void onResponse(JSONArray response) {
       for(int i=0;i<response.length();i++){
          try {
             JSONObject jsonObject=response.getJSONObject(i);
             String name=jsonObject.getString("emp_name");
             String age=jsonObject.getString("emp_age");
             String dept=jsonObject.getString("emp_dept");
             String sal=jsonObject.getString("emp_sal");
             textView.append("Name : "+name+"\nAge : "+age+"\nDept : "+dept+"\nSal : "+sal+"\n");
          } catch (JSONException e) {
             e.printStackTrace();
          }
       }
    }
 }, new Response.ErrorListener() {
    @Override
    public void onErrorResponse(VolleyError error) {
       error.printStackTrace();
    }
 });
 result.add(request);
}
}
```

-TechnoBoy

Write an android program for database connection to insert records into database.

Write an android program for database connection to delete records from database.

Write an android program for database connection to update records into database
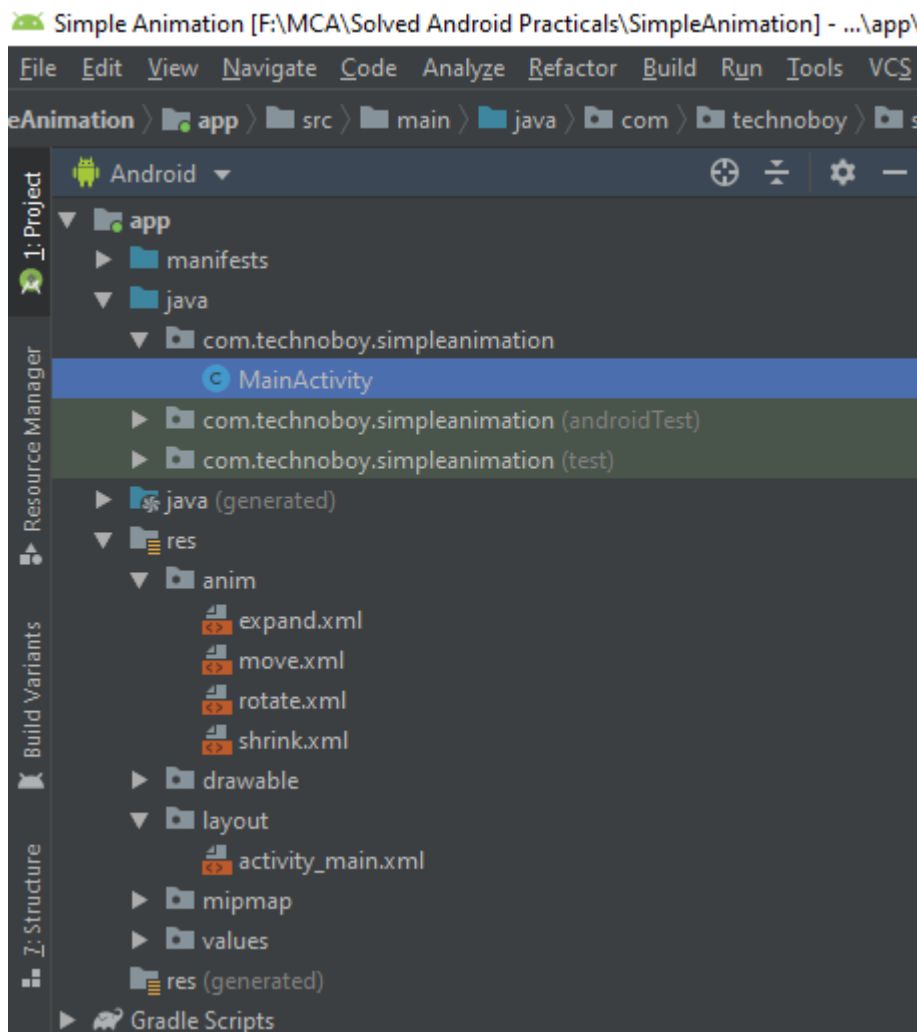
Write an android program for simple animation.

Write an android application to rotate an image.

Write an android application to expand and shrink the image.

Create an application to move the image in x and y direction

Structure

Expand.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<set xmlns:android="http://schemas.android.com/apk/res/android"
   android:fillAfter="true" >

   <scale
      android:duration="1000"
      android:fromXScale="1"
      android:fromYScale="1"
      android:pivotX="50%"
      android:pivotY="50%"
```

-TechnoBoy

```
        android:toXScale="3"
        android:toYScale="3" >
    </scale>

</set>
```

Shrink.xml

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

<set xmlns:android="http://schemas.android.com/apk/res/android"
android:fillAfter="true" >

<scale
    android:duration="1000"
    android:fromXScale="1.0"
    android:fromYScale="1.0"
    android:pivotX="50%"
    android:pivotY="50%"
    android:toXScale="0.5"
    android:toYScale="0.5" >
</scale>

</set>
```

Rotate.xml

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


<set xmlns:android="http://schemas.android.com/apk/res/android">
    <rotate android:fromDegrees="0"
        android:toDegrees="360"
        android:pivotX="50%"
        android:pivotY="50%"
        android:duration="600"
        android:repeatMode="restart"
        android:repeatCount="infinite"
        android:interpolator="@android:anim/cycle_interpolator"/>

</set>
```

Move.xml

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

<set
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:interpolator="@android:anim/linear_interpolator"
    android:fillAfter="true">

    <translate
        android:fromXDelta="0%p"
```

-TechnoBoy

```
        android:toXDelta="75%p"
        android:duration="800" />
</set>
```

Activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <Button
        android:id="@+id/btnShrink"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentRight="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="51dp"
        android:layout_marginRight="51dp"
        android:layout_marginBottom="276dp"
        android:text="@string/shrink" />

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/textView"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true"
        android:textSize="30sp"
        android:text="@string/image_animation"/>

    <ImageView
        android:id="@+id/imageView"
        android:layout_width="325dp"
        android:layout_height="208dp"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="71dp"
        android:contentDescription="@string/logo"
        android:src="@drawable/logo" />

    <Button
        android:id="@+id/btnExpand"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_alignParentEnd="true"
        android:layout_alignParentRight="true"
```

-TechnoBoy

```xml
    android:layout_marginTop="321dp"
    android:layout_marginEnd="55dp"
    android:layout_marginRight="55dp"
    android:text="@string/expand" />

  <Button
    android:id="@+id/btnRotate"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentStart="true"
    android:layout_alignParentLeft="true"
    android:layout_alignParentBottom="true"
    android:layout_marginStart="45dp"
    android:layout_marginLeft="45dp"
    android:layout_marginBottom="280dp"
    android:text="@string/rotate" />

  <Button
    android:id="@+id/btnMove"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentStart="true"
    android:layout_alignParentLeft="true"
    android:layout_alignParentTop="true"
    android:layout_marginStart="39dp"
    android:layout_marginLeft="39dp"
    android:layout_marginTop="317dp"
    android:text="@string/move" />


</RelativeLayout>
```

MainActivity.java

```java
package com.technoboy.simpleanimation;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.view.animation.Animation;
import android.view.animation.AnimationUtils;
import android.widget.Button;
import android.widget.ImageView;

public class MainActivity extends AppCompatActivity {

  Button expand,shrink,rotate,move;
  Animation animexpand,animshrink,animrotate,animmove;
  ImageView imageView;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
```

-TechnoBoy

```java
        setContentView(R.layout.activity_main);

        expand=findViewById(R.id.btnExpand);
        shrink=findViewById(R.id.btnShrink);
        rotate=findViewById(R.id.btnRotate);
        move=findViewById(R.id.btnMove);
        imageView=findViewById(R.id.imageView);

        animexpand= AnimationUtils.loadAnimation(getApplicationContext(),R.anim.expand);
        animshrink=AnimationUtils.loadAnimation(getApplicationContext(),R.anim.shrink);
        animrotate=AnimationUtils.loadAnimation(getApplicationContext(),R.anim.rotate);
        animmove=AnimationUtils.loadAnimation(getApplicationContext(),R.anim.move);

        expand.setOnClickListener(
            new View.OnClickListener() {
              @Override
              public void onClick(View v) {
                imageView.setVisibility(View.VISIBLE);
                imageView.startAnimation(animexpand);
              }
            }
        );
        shrink.setOnClickListener(
            new View.OnClickListener() {
              @Override
              public void onClick(View v) {
                imageView.setVisibility(View.VISIBLE);
                imageView.startAnimation(animshrink);
              }
            }
        );

        rotate.setOnClickListener(
            new View.OnClickListener() {
              @Override
              public void onClick(View v) {
                imageView.setVisibility(View.VISIBLE);
                imageView.startAnimation(animrotate);
              }
            }
        );
        move.setOnClickListener(
            new View.OnClickListener() {
              @Override
              public void onClick(View v) {
                imageView.setVisibility(View.VISIBLE);
                imageView.startAnimation(animmove);
              }
            }
        );
    }
}
```

-TechnoBoy

Write an android program to check internet connection.

AndroidManifest.xml

```xml
<uses-permission android:name="android.permission.ACCESS_NETWORK_STATE" />
<uses-permission android:name="android.permission.INTERNET"/>
```

Activity_main.xml

```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">


    <Button
        android:id="@+id/check"
        android:text="@string/check"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"/>

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

MainActivity.java

```java
package com.technoboy.checkinternet;

import androidx.appcompat.app.AppCompatActivity;

import android.net.ConnectivityManager;
import android.net.Network;
import android.net.NetworkInfo;
import android.os.Bundle;
import android.telephony.AvailableNetworkInfo;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    Button button;
    checkConnection cn;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        button=findViewById(R.id.check);
        cn=new checkConnection(this);

        button.setOnClickListener(
```

-TechnoBoy

```
                    new View.OnClickListener() {
                        @Override
                        public void onClick(View v) {
                            if(cn.isConnected()){
                                Toast.makeText(MainActivity.this, "Connected", Toast.LENGTH_SHORT).show();
                            }
                            else {
                                Toast.makeText(MainActivity.this, "Not Connected",
Toast.LENGTH_SHORT).show();
                            }
                        }
                    }
            );
    }
}
```

checkconnection.java

```
package com.technoboy.checkinternet;

import android.app.Service;
import android.content.Context;
import android.net.ConnectivityManager;
import android.net.NetworkInfo;

public class checkConnection {

    Context context;

    public checkConnection(Context context) {
        this.context=context;
    }
    public boolean isConnected(){
        ConnectivityManager connectivityManager=(ConnectivityManager)
            context.getSystemService(Service.CONNECTIVITY_SERVICE);

        if(connectivityManager!=null){
            NetworkInfo info=connectivityManager.getActiveNetworkInfo();
            if(info!=null){
                if(info.getState()==NetworkInfo.State.CONNECTED){
                    return true;
                }
            }
        }
        return false;
    }
}
```

-TechnoBoy