Pimpri Chinchwad Education Trust's
Pimpri Chinchwad College of Engineering

Assignment-02

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Submission Date: 05 / 09 / 24

1. Write an android application which will allow users to navigate from one activity to another activity. The first Activity will ask the user to enter the name user and the Second activity will display the name in TextView which was entered in the first activity.

```
package com.example.forpractice;

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

public class MainActivity extends AppCompatActivity {

    private EditText nameEditText;
    private Button submitButton;

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

        nameEditText = findViewById(R.id.editTextName);
        submitButton = findViewById(R.id.buttonSubmit);

        submitButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String name = nameEditText.getText().toString();
                Intent intent = new Intent(MainActivity.this,
SecondActivity.class);
                intent.putExtra("USER_NAME", name);
                startActivity(intent);
            }
        });
    }
}
```

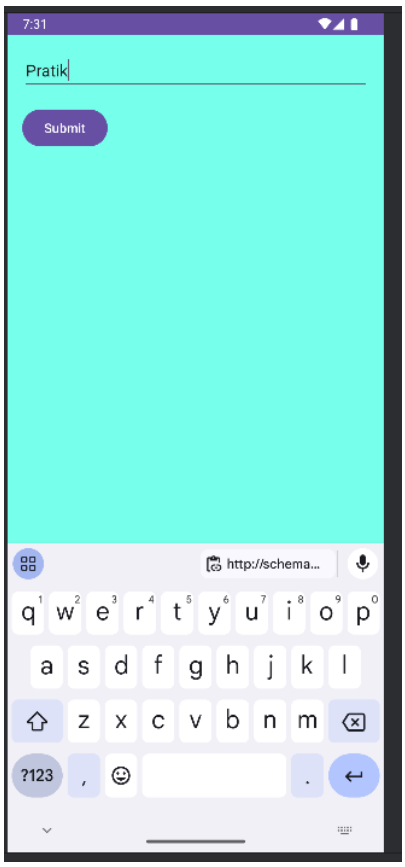
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
```

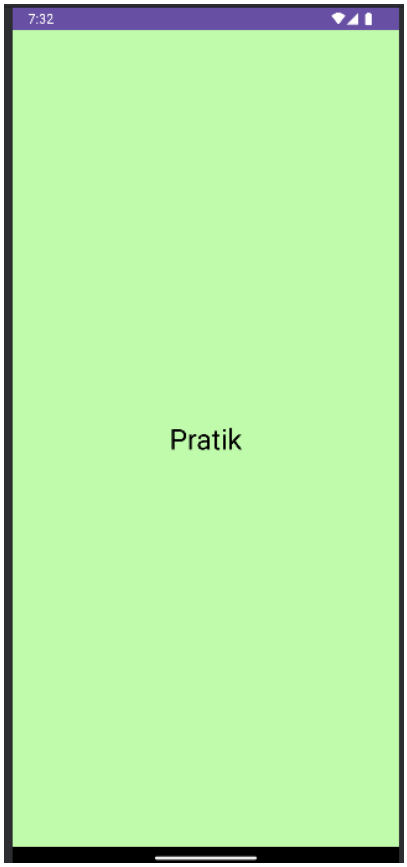
```
    android:orientation="vertical"
    android:padding="16dp"
    android:background="#76FFEA">

    <EditText
        android:id="@+id/editTextName"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter your name" />

    <Button
        android:id="@+id/buttonSubmit"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Submit"
        android:layout_below="@id/editTextName"
        android:layout_marginTop="16dp" />
</LinearLayout>
```

```
package com.example.forpractice;

import android.os.Bundle;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;

public class SecondActivity extends AppCompatActivity {

    private TextView nameTextView;

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

        nameTextView = findViewById(R.id.textName);

        String name = getIntent().getStringExtra("USER_NAME");
        nameTextView.setText(name);
    }
}
```

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="16dp"
    android:orientation="vertical"
    android:gravity="center_vertical"
    android:background="#C0FAAB">

    <TextView
        android:id="@+id/textName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="30dp"
        android:layout_gravity="center"
        android:textColor="@color/black"/>

</LinearLayout>
```

Solution:



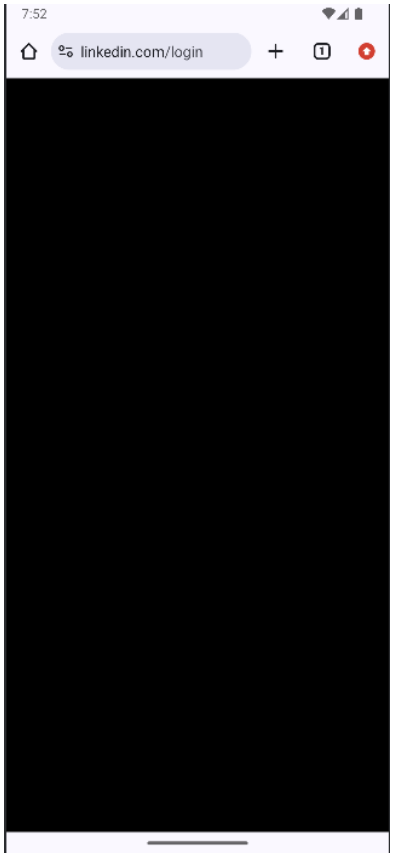


2. Write an android application that asks the user to enter the URL, and after clicking the button, the URL link should be opened in the web browser in an emulator.

```
package com.example.forpractice;

import android.content.Intent;
import android.net.Uri;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    private EditText urlEditText;
    private Button openUrlButton;

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

        urlEditText = findViewById(R.id.editTextUrl);
        openUrlButton = findViewById(R.id.buttonOpenUrl);

        openUrlButton.setOnClickListener(new View.OnClickListener() {
```

```
            @Override
            public void onClick(View v) {
                String url = urlEditText.getText().toString();

                if (!url.startsWith("http://") && !url.startsWith("https://"))
{
                    url = "http://" + url;
                }

                if (Uri.parse(url).isAbsolute()) {
                    Intent browserIntent = new Intent(Intent.ACTION_VIEW,
Uri.parse(url));
                    startActivity(browserIntent);
                } else {
                    Toast.makeText(MainActivity.this, "Invalid URL",
Toast.LENGTH_SHORT).show();
                }
            }
        });
    }
}
```

```
<?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:padding="16dp">

    <EditText
        android:id="@+id/editTextUrl"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter URL"
        android:inputType="textUri" />

    <Button
        android:id="@+id/buttonOpenUrl"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Open URL"
        android:layout_below="@id/editTextUrl"
        android:layout_marginTop="16dp" />

</RelativeLayout>
```



3. Write an android application that will demonstrate the use of BaseAdapter and ArrayAdapter.

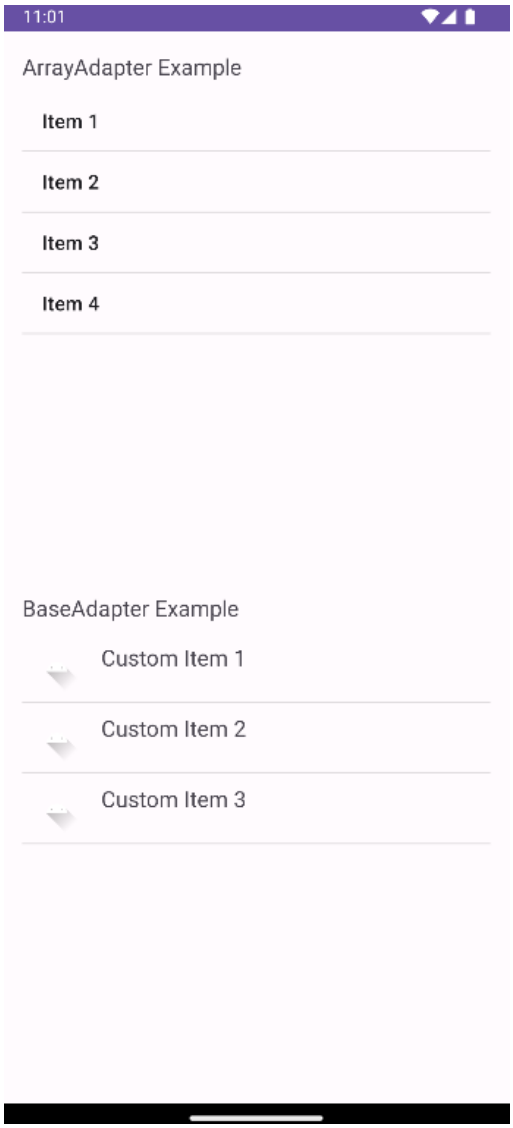
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:padding="16dp">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="ArrayAdapter Example"
        android:textSize="18sp"
        android:paddingBottom="8dp"/>

    <ListView
        android:id="@+id/arrayAdapterListView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1" />


    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="BaseAdapter Example"
        android:textSize="18sp"
        android:paddingTop="16dp"
        android:paddingBottom="8dp"/>
```

```
    <ListView
        android:id="@+id/baseAdapterListView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1" />

</LinearLayout>
```

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal"
    android:padding="8dp">

    <ImageView
        android:id="@+id/itemImage"
        android:layout_width="40dp"
        android:layout_height="40dp"
        android:layout_marginEnd="16dp"
        android:src="@drawable/ic_launcher_foreground"/>

    <TextView
        android:id="@+id/itemText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Item Name"
        android:textSize="18sp"/>

</LinearLayout>
```

```
package com.example.forpractice;

import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.ArrayAdapter;
import android.widget.BaseAdapter;
import android.widget.ImageView;
import android.widget.ListView;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    private String[] arrayAdapterItems = {"Item 1", "Item 2", "Item 3", "Item
4"};
    private CustomItem[] baseAdapterItems = {
            new CustomItem(R.drawable.ic_launcher_foreground, "Custom Item 1"),
            new CustomItem(R.drawable.ic_launcher_foreground, "Custom Item 2"),
            new CustomItem(R.drawable.ic_launcher_foreground, "Custom Item 3")
    };

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

        ListView arrayAdapterListView =
findViewById(R.id.arrayAdapterListView);
        ArrayAdapter<String> arrayAdapter = new ArrayAdapter<>(this,
```

```
android.R.layout.simple_list_item_1, arrayAdapterItems);
        arrayAdapterListView.setAdapter(arrayAdapter);

        ListView baseAdapterListView = findViewById(R.id.baseAdapterListView);
        CustomAdapter customAdapter = new CustomAdapter();
        baseAdapterListView.setAdapter(customAdapter);
    }

    public static class CustomItem {
        int imageResId;
        String text;

        public CustomItem(int imageResId, String text) {
            this.imageResId = imageResId;
            this.text = text;
        }
    }

    public class CustomAdapter extends BaseAdapter {

        @Override
        public int getCount() {
            return baseAdapterItems.length;
        }

        @Override
        public Object getItem(int position) {
            return baseAdapterItems[position];
        }

        @Override
        public long getItemId(int position) {
            return position;
        }

        @Override
        public View getView(int position, View convertView, ViewGroup parent) {
            if (convertView == null) {
                convertView =
LayoutInflater.from(parent.getContext()).inflate(R.layout.custom_list_item,
parent, false);
            }

            ImageView imageView = convertView.findViewById(R.id.itemImage);
            TextView textView = convertView.findViewById(R.id.itemText);

            CustomItem item = baseAdapterItems[position];

            imageView.setImageResource(item.imageResId);
            textView.setText(item.text);

            return convertView;
        }
    }
}
```



4. Write an android application for Gallery using adapters.

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

    <GridView
        android:id="@+id/gridView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:numColumns="3"
        android:verticalSpacing="8dp"
        android:horizontalSpacing="8dp"
        android:stretchMode="columnWidth"
        android:gravity="center" />
</LinearLayout>
```

```
package com.example.forpractice;
```

```java
import android.content.Context;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.BaseAdapter;
import android.widget.ImageView;

public class ImageAdapter extends BaseAdapter {

    private Context context;
    private int[] imageIds;  // Array of image resource IDs

    // Constructor
    public ImageAdapter(Context context, int[] imageIds) {
        this.context = context;
        this.imageIds = imageIds;
    }

    @Override
    public int getCount() {
        return imageIds.length;  // Return the number of images
    }

    @Override
    public Object getItem(int position) {
        return imageIds[position];  // Return the image ID at the specified
position
    }

    @Override
    public long getItemId(int position) {
        return position;  // Return the position as the ID
    }

    @Override
    public View getView(int position, View convertView, ViewGroup parent) {
        ImageView imageView;

        if (convertView == null) {
            imageView = new ImageView(context);
            imageView.setLayoutParams(new ViewGroup.LayoutParams(250, 250));
            imageView.setScaleType(ImageView.ScaleType.CENTER_CROP);
            imageView.setPadding(8, 8, 8, 8);
        } else {
            imageView = (ImageView) convertView;
        }

        imageView.setImageResource(imageIds[position]);
        return imageView;
    }

}
```

```java
package com.example.forpractice;

import android.os.Bundle;
import android.widget.GridView;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {


    private int[] imageIds = {
```

```
            R.drawable.image1,
            R.drawable.image2,
            R.drawable.image3,
            R.drawable.image4,
            R.drawable.image5,
            R.drawable.image6,
            R.drawable.image7,
            R.drawable.image8,
    };

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

        GridView gridView = findViewById(R.id.gridView);

        ImageAdapter adapter = new ImageAdapter(this, imageIds);
        gridView.setAdapter(adapter);
    }
}
```

5. Write an application demonstrating the use of Android Session Management.

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <androidx.appcompat.widget.Toolbar
        android:id="@+id/toolbar"
        app:title="@string/app_name"
        app:titleTextColor="@color/white"
        android:layout_width="match_parent"
        android:layout_height="?attr/actionBarSize"
        android:background="?attr/colorPrimary" />
    <EditText
        android:id="@+id/idEdtEmail"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/toolbar"
        android:layout_marginStart="10dp"
        android:layout_marginTop="50dp"
        android:layout_marginEnd="10dp"
        android:hint="@string/enter_youe_email"
        android:importantForAutofill="no"
        android:inputType="textEmailAddress" />
    <EditText
        android:id="@+id/idEdtPassword"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/idEdtEmail"
        android:layout_marginStart="10dp"
        android:layout_marginTop="30dp"
        android:layout_marginEnd="10dp"
        android:hint="@string/enter_password"
        android:importantForAutofill="no"
        android:inputType="textPassword" />

    <Button
        android:id="@+id/idBtnLogin"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/idEdtPassword"
        android:layout_marginStart="10dp"
        android:layout_marginTop="30dp"
        android:layout_marginEnd="10dp"
        android:text="@string/login" />
</RelativeLayout>
```

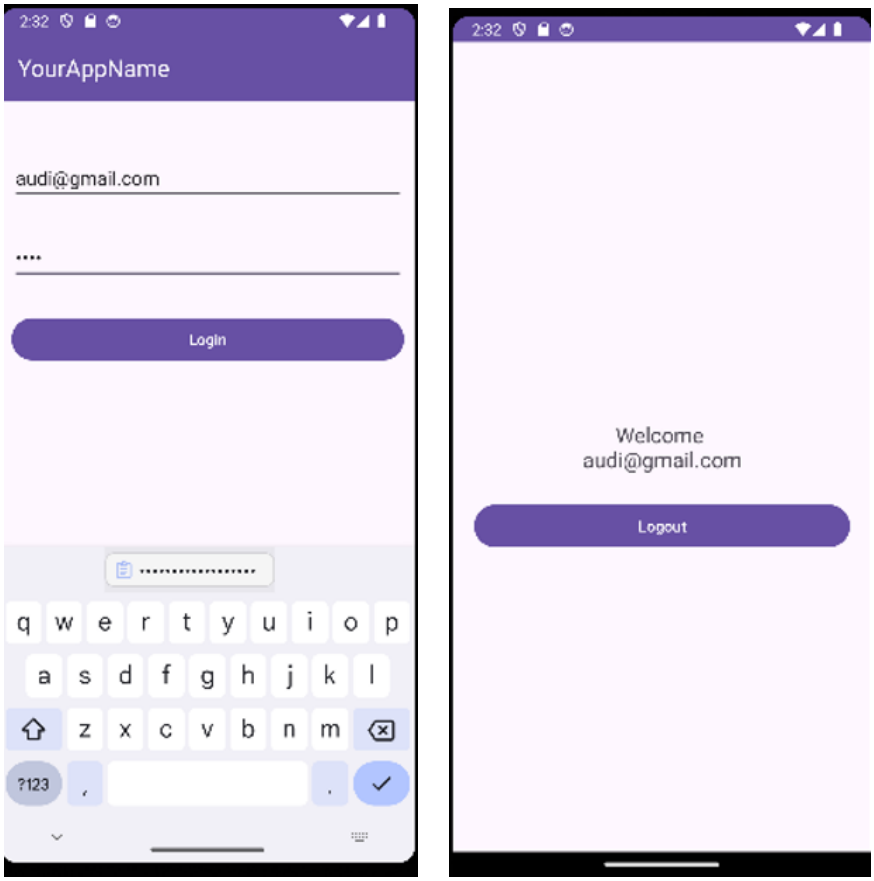
```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".HomeActivity">

    <TextView
        android:id="@+id/idTVWelcome"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
```

```
        android:layout_centerInParent="true"
        android:padding="5dp"
        android:textAlignment="center"
        android:textSize="20sp" />
    <Button
        android:id="@+id/idBtnLogout"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/idTVWelcome"
        android:layout_marginStart="20dp"
        android:layout_marginTop="20dp"
        android:layout_marginEnd="20dp"
        android:text="@string/logout" />
</RelativeLayout>
```

```
package com.example.la2q5;
import android.content.Context;
import android.content.Intent;
import android.content.SharedPreferences;
import android.os.Bundle;
import android.text.TextUtils;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity {
    public static final String SHARED_PREFS = "shared_prefs";
    public static final String EMAIL_KEY = "email_key";
    public static final String PASSWORD_KEY = "password_key";
    SharedPreferences sharedpreferences;
    String email, password;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        EditText emailEdt = findViewById(R.id.idEdtEmail);
        EditText passwordEdt = findViewById(R.id.idEdtPassword);
        Button loginBtn = findViewById(R.id.idBtnLogin);
        sharedpreferences = getSharedPreferences(SHARED_PREFS,
                Context.MODE_PRIVATE);
        email = sharedpreferences.getString(EMAIL_KEY, null);
        password = sharedpreferences.getString(PASSWORD_KEY, null);
        if (email != null && password != null) {
            Intent i = new Intent(MainActivity.this, HomeActivity.class);
            startActivity(i);
            finish();
        }
        loginBtn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                if (TextUtils.isEmpty(emailEdt.getText().toString()) &&
                        TextUtils.isEmpty(passwordEdt.getText().toString())) {
                    Toast.makeText(MainActivity.this, "Please Enter Email and
Password",
                            Toast.LENGTH_SHORT).show();
                } else {
                    SharedPreferences.Editor editor = sharedpreferences.edit();

                    editor.putString(EMAIL_KEY, emailEdt.getText().toString());
                    editor.putString(PASSWORD_KEY,
passwordEdt.getText().toString());
```

```
                    editor.apply();
                    Intent i = new Intent(MainActivity.this,
HomeActivity.class);
                    startActivity(i);
                    finish();
                }
            }
        });
    }
}
```

```
package com.example.la2q5;
import android.content.Context;

import android.content.Intent;
import android.content.SharedPreferences;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;
public class HomeActivity extends AppCompatActivity {
    public static final String SHARED_PREFS = "shared_prefs";
    public static final String EMAIL_KEY = "email_key";
    public static final String PASSWORD_KEY = "password_key";
    SharedPreferences sharedpreferences;
    String email;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_home);
        sharedpreferences = getSharedPreferences(SHARED_PREFS,
                Context.MODE_PRIVATE);
        email = sharedpreferences.getString(EMAIL_KEY, null);
        TextView welcomeTV = findViewById(R.id.idTVWelcome);
        welcomeTV.setText("Welcome \n" + email);
        Button logoutBtn = findViewById(R.id.idBtnLogout);
        logoutBtn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                SharedPreferences.Editor editor = sharedpreferences.edit();
                editor.clear();
                editor.apply();
                Intent i = new Intent(HomeActivity.this, MainActivity.class);
                startActivity(i);
                finish();

            }
        });
    }
```



6. Write an android application which will create three fragments in a single activity.

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical">

    <FrameLayout
        android:id="@+id/fragmentContainer1"
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1"
        android:background="#FFCDD2"/>

    <FrameLayout
        android:id="@+id/fragmentContainer2"
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1"
        android:background="#C8E6C9"/>

    <FrameLayout
        android:id="@+id/fragmentContainer3"
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1"
        android:background="#BBDEFB"/>
</LinearLayout>
```

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
```

```
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:gravity="center"
    android:padding="16dp">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Fragment One"
        android:textSize="24sp"
        android:textColor="#000000"/>
</LinearLayout>
```

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:gravity="center"
    android:padding="16dp">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Fragment Two"
        android:textSize="24sp"
        android:textColor="#000000"/>
</LinearLayout>
```

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:gravity="center"
    android:padding="16dp">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Fragment Three"
        android:textSize="24sp"
        android:textColor="#000000"/>
</LinearLayout>
```

```
package com.example.la2q6;

import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity;
import androidx.fragment.app.Fragment;
import androidx.fragment.app.FragmentTransaction;



public class MainActivity extends AppCompatActivity {

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

        loadFragment(new fragment_one(), R.id.fragmentContainer1);
```

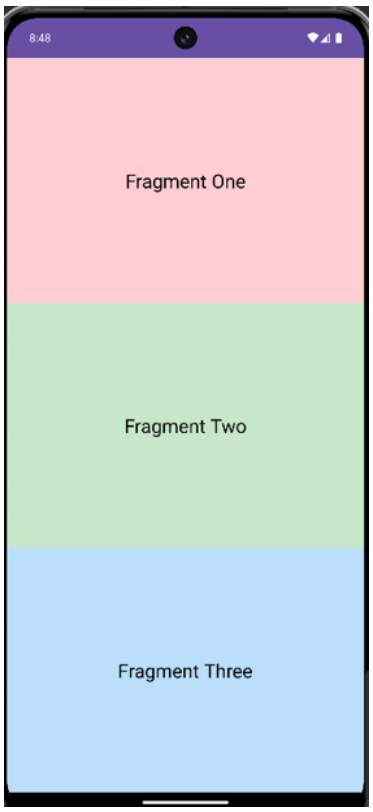
```
        loadFragment(new fragment_two(), R.id.fragmentContainer2);
        loadFragment(new fragment_three(), R.id.fragmentContainer3);
    }

    private void loadFragment(Fragment fragment, int containerId) {
        FragmentTransaction transaction =
getSupportFragmentManager().beginTransaction();
        transaction.replace(containerId, fragment);
        transaction.commit();
    }
}
```

```
package com.example.la2q6;

import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.fragment.app.Fragment;

public class fragment_one extends Fragment {

    @Nullable
    @Override
    public View onCreateView(@NonNull LayoutInflater inflater, @Nullable
ViewGroup container, @Nullable Bundle savedInstanceState) {
        return inflater.inflate(R.layout.fragment_one, container, false);
    }
}
```

```
package com.example.la2q6;

import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.fragment.app.Fragment;

public class fragment_two extends Fragment {

    @Nullable
    @Override
    public View onCreateView(@NonNull LayoutInflater inflater, @Nullable
ViewGroup container, @Nullable Bundle savedInstanceState) {
        return inflater.inflate(R.layout.fragment_two, container, false);
    }
}
```

```
package com.example.la2q6;

import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.fragment.app.Fragment;

public class fragment_three extends Fragment {
```

```
    @Nullable
    @Override
    public View onCreateView(@NonNull LayoutInflater inflater, @Nullable
ViewGroup container, @Nullable Bundle savedInstanceState) {
        return inflater.inflate(R.layout.fragment_three, container, false);
    }
}
```



7. Write an android application for Fragment Activity Life Cycle.

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:padding="16dp">
    <FrameLayout
        android:id="@+id/fragmentContainer"
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1"
        android:background="@android:color/darker_gray" />
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:gravity="center">
        <Button
            android:id="@+id/buttonAddFragment"
            android:layout_width="wrap_content"
```

```
            android:layout_height="wrap_content"

            android:text="Add Fragment" />
        <Button
            android:id="@+id/buttonRemoveFragment"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Remove Fragment"
            android:layout_marginStart="16dp" />
    </LinearLayout>
</LinearLayout>
```

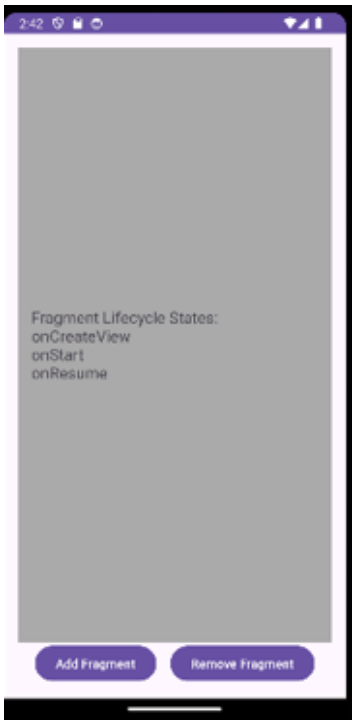
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:padding="16dp"
    android:gravity="center">
    <TextView
        android:id="@+id/lifecycleTextView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Fragment Lifecycle States:"
        android:textSize="18sp" />
</LinearLayout>
```

```
package com.example.la2q7;
import androidx.appcompat.app.AppCompatActivity;
import androidx.fragment.app.Fragment;
import androidx.fragment.app.FragmentTransaction;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
public class MainActivity extends AppCompatActivity {
    private Button buttonAddFragment, buttonRemoveFragment;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        buttonAddFragment = findViewById(R.id.buttonAddFragment);
        buttonRemoveFragment = findViewById(R.id.buttonRemoveFragment);
        buttonAddFragment.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                addFragment();
            }
        });
        buttonRemoveFragment.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                removeFragment();
            }
        });
    }
    private void addFragment() {
        FragmentLifecycleDemo fragment = new FragmentLifecycleDemo();

        FragmentTransaction transaction =
                getSupportFragmentManager().beginTransaction();
        transaction.add(R.id.fragmentContainer, fragment, "LIFECYCLE_FRAGMENT");
        transaction.addToBackStack(null); // To handle back navigation
        transaction.commit();
```

```
    }
    private void removeFragment() {
        Fragment fragment =

getSupportFragmentManager().findFragmentByTag("LIFECYCLE_FRAGMENT");
        if (fragment != null) {
            FragmentTransaction transaction =
                    getSupportFragmentManager().beginTransaction();
            transaction.remove(fragment);
            transaction.commit();
        }
    }
}
```

```
package com.example.la2q7;
import android.os.Bundle;
import android.util.Log;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.TextView;
import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.fragment.app.Fragment;
public class FragmentLifecycleDemo extends Fragment {
    private static final String TAG = "FragmentLifecycle";
    private TextView lifecycleTextView;
    @Override
    public void onCreate(@Nullable Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        Log.d(TAG, "onCreate called");
    }
    @Nullable
    @Override
    public View onCreateView(@NonNull LayoutInflater inflater, @Nullable
ViewGroup
            container,
                             @Nullable Bundle savedInstanceState) {
        Log.d(TAG, "onCreateView called");
        View view = inflater.inflate(R.layout.activity_fragment_lifecycle_demo,
container, false);

        lifecycleTextView = view.findViewById(R.id.lifecycleTextView);
        updateLifecycleState("onCreateView");
        return view;
    }
    @Override
    public void onStart() {
        super.onStart();
        Log.d(TAG, "onStart called");
        updateLifecycleState("onStart");
    }
    @Override
    public void onResume() {
        super.onResume();
        Log.d(TAG, "onResume called");
        updateLifecycleState("onResume");
    }
    @Override
    public void onPause() {
        super.onPause();
        Log.d(TAG, "onPause called");
        updateLifecycleState("onPause");
```

```
    }
    @Override
    public void onStop() {
        super.onStop();
        Log.d(TAG, "onStop called");
        updateLifecycleState("onStop");
    }
    @Override
    public void onDestroyView() {
        super.onDestroyView();
        Log.d(TAG, "onDestroyView called");
        updateLifecycleState("onDestroyView");
    }
    @Override
    public void onDestroy() {
        super.onDestroy();
        Log.d(TAG, "onDestroy called");

        updateLifecycleState("onDestroy");
    }
    private void updateLifecycleState(String state) {
        if (lifecycleTextView != null) {
            String currentText = lifecycleTextView.getText().toString();
            lifecycleTextView.setText(currentText + "\n" + state);
        }
    }
}
```



8. Write an android application that will look like WhatsApp Application using Fragment.

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <!-- Contacts Fragment Layout -->
```

```
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Whatsapp contacts"
        android:textSize="24sp"/>
</RelativeLayout>
```

```
<?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">

    <!-- Settings Fragment Layout -->
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Whatsapp settings"
        android:textSize="24sp"/>
</RelativeLayout>
```

```
<?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">

    <!-- Settings Fragment Layout -->
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Whatsapp settings"
        android:textSize="24sp"/>
</RelativeLayout>
```

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.coordinatorlayout.widget.CoordinatorLayout
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">

    <androidx.fragment.app.FragmentContainerView
        android:id="@+id/fragment_container"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_gravity="fill"/>

    <com.google.android.material.bottomnavigation.BottomNavigationView
        android:id="@+id/bottom_navigation"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_gravity="bottom"
        app:menu="@menu/bottom_nav_menu"
        app:labelVisibilityMode="labeled"/>

</androidx.coordinatorlayout.widget.CoordinatorLayout>
```

```
package com.example.myapplication;

import android.os.Bundle;
import androidx.annotation.NonNull;
```

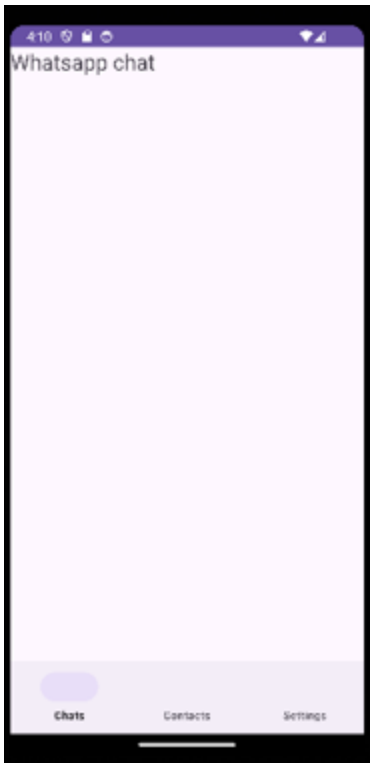
```
import androidx.appcompat.app.AppCompatActivity;
import androidx.fragment.app.Fragment;
import androidx.fragment.app.FragmentManager;
import androidx.fragment.app.FragmentTransaction;
import com.google.android.material.bottomnavigation.BottomNavigationView;

public class MainActivity extends AppCompatActivity {

   private BottomNavigationView bottomNavigationView;
   private FragmentManager fragmentManager;

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

       bottomNavigationView = findViewById(R.id.bottom_navigation);
       fragmentManager = getSupportFragmentManager();

       bottomNavigationView.setOnNavigationItemSelectedListener(item -> {
           Fragment selectedFragment = null;

           if (item.getItemId() == R.id.nav_chats) {
               selectedFragment = new ChatFragment();
           } else if (item.getItemId() == R.id.nav_contacts) {
               selectedFragment = new ContactsFragment();
           } else if (item.getItemId() == R.id.nav_settings) {
               selectedFragment = new SettingsFragment();
           }

           if (selectedFragment != null) {
               FragmentTransaction transaction =
fragmentManager.beginTransaction();
               transaction.replace(R.id.fragment_container, selectedFragment);
               transaction.commit();
           }

           return true;
       });

       // Set default fragment
       bottomNavigationView.setSelectedItemId(R.id.nav_chats);
   }
}
```

```
package com.example.myapplication;

import android.os.Bundle;
import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.fragment.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

public class SettingsFragment extends Fragment {

   @Nullable
   @Override
   public View onCreateView(@NonNull LayoutInflater inflater, @Nullable
ViewGroup container, @Nullable Bundle savedInstanceState) {
       return inflater.inflate(R.layout.fragment_settings, container, false);
   }
```

```
}
```

```
package com.example.myapplication;

import android.os.Bundle;
import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.fragment.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

public class ContactsFragment extends Fragment {

   @Nullable
   @Override
   public View onCreateView(@NonNull LayoutInflater inflater, @Nullable
ViewGroup container, @Nullable Bundle savedInstanceState) {
       return inflater.inflate(R.layout.fragment_contacts, container, false);
   }
}
```

```

import android.os.Bundle;
import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.fragment.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

public class ChatFragment extends Fragment {

   @Nullable
   @Override
   public View onCreateView(@NonNull LayoutInflater inflater, @Nullable
ViewGroup container, @Nullable Bundle savedInstanceState) {
       return inflater.inflate(R.layout.fragment_chat, container, false);
   }
}
```



9. Write an android application that will parse XML data

```
<?xml version="1.0"?>
<records>
<car>
<name>Audi</name>
<price>5000000</price>
</car>
<car>
<name>BMW</name>
<price>7000000</price>
</car>
<car>
<name>Mercedes-Benz</name>
<price>10000000</price>
</car>
</records>
```

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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/tv1"
        app:layout_constraintBottom_toBottomOf="parent"
```

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

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

```
package com.example.la2q9;
import java.io.InputStream;

import javax.xml.parsers.DocumentBuilder;
import javax.xml.parsers.DocumentBuilderFactory;
import org.w3c.dom.Document;
import org.w3c.dom.Element;
import org.w3c.dom.Node;
import org.w3c.dom.NodeList;
import android.app.Activity;
import android.os.Bundle;
import android.widget.TextView;

public class MainActivity extends Activity {
    TextView tv1;

    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        tv1=(TextView)findViewById(R.id.tv1);
        try {
            InputStream is = getAssets().open("new.xml");

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

            Element element=doc.getDocumentElement();
            element.normalize();

            NodeList nList = doc.getElementsByTagName("car");
            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()+"\nName : " + getValue("name",
element2)+"\n");
                    tv1.setText(tv1.getText()+"Price : " + getValue("price",
element2)+"\n");
                    tv1.setText(tv1.getText()+"-----------------------");
                }
            }

        } catch (Exception e) {e.printStackTrace();}

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

}
```

10. Write an android application that will parse JSON data

```
    {
        "name": "Mango",
        "price": "500"
    },
    {
        "name": "Kiwi",
        "price": "200"
    }
]
```

```
<?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/tvData"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentLeft="true"
        android:layout_alignParentTop="true"
        android:layout_marginLeft="75dp"
        android:layout_marginTop="46dp" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

```
package com.example.la2q10;
```

```java
import android.app.Activity;
import android.os.Bundle;
import android.widget.TextView;

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

import java.io.InputStream;
import java.io.IOException;

public class MainActivity extends Activity {

   private TextView tvData;

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

       tvData = findViewById(R.id.tvData);

       try {
           // Load JSON data from assets
           InputStream is = getAssets().open("New.json");
           int size = is.available();
           byte[] buffer = new byte[size];
           is.read(buffer);
           is.close();

           String jsonString = new String(buffer, "UTF-8");
           JSONArray jsonArray = new JSONArray(jsonString);
           StringBuilder sb = new StringBuilder();
           for (int i = 0; i < jsonArray.length(); i++) {
               JSONObject jsonObject = jsonArray.getJSONObject(i);
               String name = jsonObject.getString("name");
               String price = jsonObject.getString("price");
               sb.append("Name: ").append(name).append("\n");
               sb.append("Price: ").append(price).append("\n");
               sb.append("-----------------------\n");
           }

           tvData.setText(sb.toString());

       } catch (IOException | JSONException e) {
           e.printStackTrace();
       }
   }
```


7:39
1
John Doe
85
2
Jane Smith
90