Android App Code using Android Studio:

Student App:

Manifest File:

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.iotproject">

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

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.IoTProject">
        <activity
            android:name=".PollingActivity"
            android:exported="false" />
        <activity
            android:name=".BookMeal"
            android:exported="false" />
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER"
/>
            </intent-filter>
        </activity>
    </application>

</manifest>
```

MainActivity:

```java
package com.example.iotproject;



import androidx.annotation.NonNull;

import androidx.appcompat.app.AppCompatActivity;



import android.content.Intent;

import android.os.Bundle;

import android.util.Log;
```

```java
import android.view.View;

import android.widget.Button;

import android.widget.Toast;


import com.google.firebase.database.DataSnapshot;

import com.google.firebase.database.DatabaseError;

import com.google.firebase.database.DatabaseReference;

import com.google.firebase.database.FirebaseDatabase;

import com.google.firebase.database.ValueEventListener;


import java.util.Map;


public class MainActivity extends AppCompatActivity {


    Button btnclk,poll;


    String btnclk_Status,poll_Status;


    FirebaseDatabase firebaseDatabase;


    DatabaseReference databaseReference,databaseReference2;


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


        btnclk = (Button) findViewById(R.id.btnclk);

        poll = (Button) findViewById(R.id.poll);
```

```java
        firebaseDatabase = FirebaseDatabase.getInstance();


        databaseReference = (DatabaseReference)
firebaseDatabase.getReference().child("NodeMCU").child("Booking");

        databaseReference2 = (DatabaseReference)
firebaseDatabase.getReference().child("NodeMCU").child("Polling");


        databaseReference.addValueEventListener(new ValueEventListener() {

            @Override

            public void onDataChange(@NonNull DataSnapshot snapshot) {

                // this method is call to get the realtime

                // updates in the data.

                // this method is called when the data is

                // changed in our Firebase console.

                // below line is for getting the data from

                // snapshot of our database.


                btnclk_Status = (String) snapshot.getValue();

                if(btnclk_Status.equals("0"))

                    btnclk.setEnabled(false);

                else

                    btnclk.setEnabled(true);



            }



            @Override

            public void onCancelled(@NonNull DatabaseError error) {

                // calling on cancelled method when we receive

                // any error or we are not able to get the data.

                Toast.makeText(MainActivity.this, "Fail to get data.",
Toast.LENGTH_SHORT).show();
```

```java
            }
        });


        databaseReference2.addValueEventListener(new ValueEventListener() {
            @Override
            public void onDataChange(@NonNull DataSnapshot snapshot) {
                // this method is call to get the realtime
                // updates in the data.
                // this method is called when the data is
                // changed in our Firebase console.
                // below line is for getting the data from
                // snapshot of our database.


                poll_Status = (String) snapshot.getValue();
                if(poll_Status.equals("0"))
                    poll.setEnabled(false);
                else
                    poll.setEnabled(true);



            }


            @Override
            public void onCancelled(@NonNull DatabaseError error) {
                // calling on cancelled method when we receive
                // any error or we are not able to get the data.
                Toast.makeText(MainActivity.this, "Fail to get data.",
Toast.LENGTH_SHORT).show();
            }
        });
```

```java
        btnclk.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {


                if(!btnclk.isEnabled())

                    Toast.makeText(MainActivity.this, "Booking not Started
Yet", Toast.LENGTH_SHORT).show();

                else

                    startActivity(new
Intent(getApplicationContext(),BookMeal.class));

            }

        });


        poll.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                if(!poll.isEnabled())

                    Toast.makeText(MainActivity.this, "Polling not Started
Yet", Toast.LENGTH_SHORT).show();

                else

                    startActivity(new
Intent(getApplicationContext(),PollingActivity.class));

            }

        });



    }

}
```

MainActivity XML File:

```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"
```

```xml
    xmlns:tools="http://schemas.android.com/tools"

    android:layout_width="match_parent"

    android:layout_height="match_parent"

    tools:context=".MainActivity">


    <Button

        android:id="@+id/btnclk"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Book Your Meal"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.497"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.363" />


    <Button

        android:id="@+id/poll"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Poll"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.498"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toBottomOf="@+id/btnclk"

        app:layout_constraintVertical_bias="0.304" />


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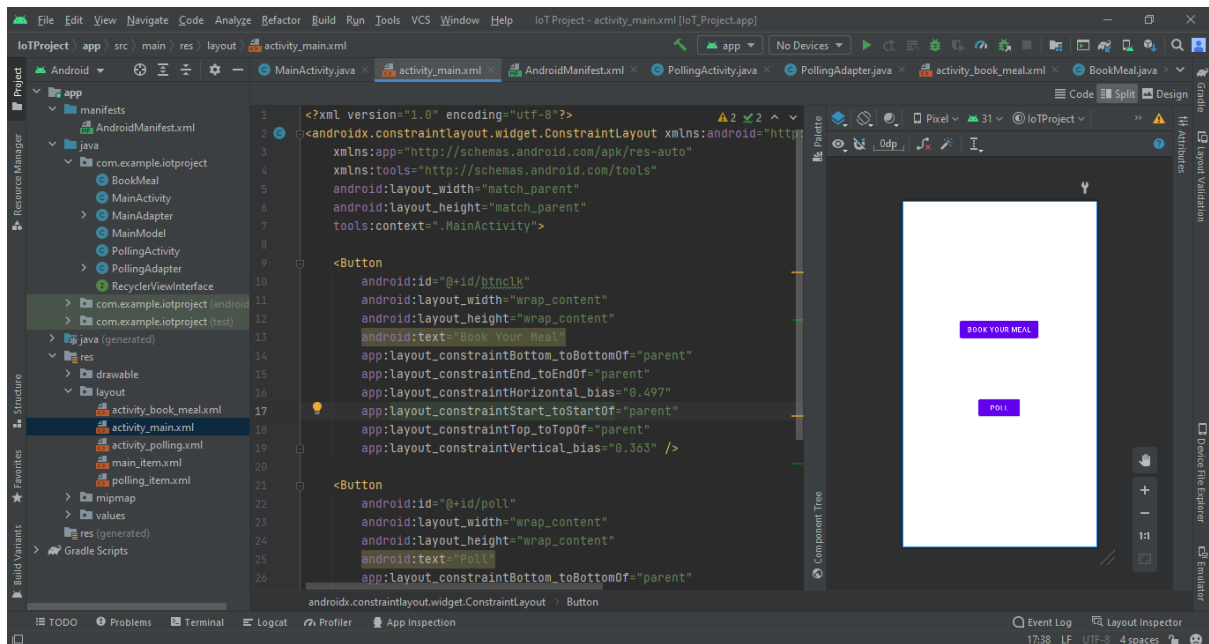
PollingActivity:

```java
package com.example.iotproject;



import androidx.appcompat.app.AppCompatActivity;

import androidx.recyclerview.widget.LinearLayoutManager;

import androidx.recyclerview.widget.RecyclerView;



import android.content.Intent;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;



import com.firebase.ui.database.FirebaseRecyclerOptions;

import com.google.firebase.database.FirebaseDatabase;



import java.util.ArrayList;



public class PollingActivity extends AppCompatActivity {
```

```java
    RecyclerView pollingRecyclerView;

    PollingAdapter pollingAdapter;

    Button update;


    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_polling);


        update = findViewById(R.id.updtButton);


        pollingRecyclerView = (RecyclerView) findViewById(R.id.Polling_rv);

        pollingRecyclerView.setLayoutManager(new
LinearLayoutManager(this));


        FirebaseRecyclerOptions<MainModel> options =

                new FirebaseRecyclerOptions.Builder<MainModel>()

.setQuery(FirebaseDatabase.getInstance().getReference().child("meals"),
MainModel.class)

                    .build();


        pollingAdapter = new PollingAdapter(options);

        pollingRecyclerView.setAdapter(pollingAdapter);


        update.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                startActivity(new
Intent(getApplicationContext(),MainActivity.class));

            }
```

```
            });


    }


    @Override

    protected void onStart() {

        super.onStart();


        pollingAdapter.startListening();

    }


    @Override

    protected void onStop() {

        super.onStop();

        pollingAdapter.stopListening();

    }




}
```

Polling Activity Adapter:

```java
package com.example.iotproject;



import android.annotation.SuppressLint;


import android.view.LayoutInflater;


import android.view.View;


import android.view.ViewGroup;
```

```java
import android.widget.CheckBox;

import android.widget.TextView;

import android.widget.Toast;

import androidx.annotation.NonNull;

import androidx.recyclerview.widget.RecyclerView;

import com.firebase.ui.database.FirebaseRecyclerAdapter;

import com.firebase.ui.database.FirebaseRecyclerOptions;

import com.google.android.gms.tasks.OnFailureListener;

import com.google.android.gms.tasks.OnSuccessListener;

import com.google.firebase.database.FirebaseDatabase;

import java.util.HashMap;

import java.util.Map;

public class PollingAdapter extends FirebaseRecyclerAdapter<MainModel,
PollingAdapter.myViewHolder> {

    /**
```

```java
     * Initialize a {@link RecyclerView.Adapter} that listens to a Firebase
query. See

     * {@link FirebaseRecyclerOptions} for configuration options.

     *

     * @param options

     */


    public PollingAdapter(@NonNull FirebaseRecyclerOptions<MainModel>
options) {


        super(options);




    }




    @Override

    protected void onBindViewHolder(@NonNull PollingAdapter.myViewHolder
holder, @SuppressLint("RecyclerView") int position, @NonNull MainModel
model) {



        holder.name.setText(model.getName());




        int alreadyChecked=0;




        holder.pollYes.setOnClickListener(new View.OnClickListener() {
```

```java
            @Override

            public void onClick(View v) {



                Map<String,Object> map = new HashMap<>();


map.put("count",String.valueOf(Integer.parseInt(model.getCount())+1));



FirebaseDatabase.getInstance().getReference().child("meals")


.child(getRef(position).getKey()).updateChildren(map)


                        .addOnSuccessListener(new OnSuccessListener<Void>()
{

                            @Override

                            public void onSuccess(Void unused) {



                                Toast.makeText(holder.name.getContext(),
"Data Updated Successfully!", Toast.LENGTH_SHORT).show();


                            }


                        })


                        .addOnFailureListener(new OnFailureListener() {
```

```java
                    @Override

                    public void onFailure(@NonNull Exception e) {

                        Toast.makeText(holder.name.getContext(),
"Error while updating!", Toast.LENGTH_SHORT).show();


                    }

                });


            }

        });



    }




    @NonNull


    @Override


    public PollingAdapter.myViewHolder onCreateViewHolder(@NonNull
ViewGroup parent, int viewType) {




        View view =
LayoutInflater.from(parent.getContext()).inflate(R.layout.polling_item,pare
nt,false);


        return new PollingAdapter.myViewHolder(view);


    }

                    @Override
```

```java
class myViewHolder extends RecyclerView.ViewHolder{

    TextView name;

    CheckBox pollYes,pollNo;

    public myViewHolder(@NonNull View itemView) {

        super(itemView);

        name = (TextView) itemView.findViewById(R.id.nameItem);

        pollYes = (CheckBox) itemView.findViewById(R.id.pollYes);

        pollNo = (CheckBox) itemView.findViewById(R.id.pollNo);

    }

}
}
```

PollingActivity XML File:

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

```xml
    android:layout_width="match_parent"

    android:layout_height="match_parent"

    tools:context=".PollingActivity">


    <LinearLayout

        android:layout_width="match_parent"

        android:layout_height="match_parent"

        android:orientation="vertical"

        >

    <androidx.recyclerview.widget.RecyclerView

        android:id="@+id/Polling_rv"

        android:layout_width="409dp"

        android:layout_height="wrap_content"

        android:layout_marginStart="1dp"

        android:layout_marginTop="1dp"

        android:layout_marginEnd="1dp"

         />


    <Button

        android:id="@+id/updtButton"

        android:layout_marginTop="5dp"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:layout_gravity="center"

        android:text="Update" />


    </LinearLayout>
</ScrollView>
```

BookMeal Activity:

```java
package com.example.iotproject;


import androidx.annotation.NonNull;

import androidx.appcompat.app.AppCompatActivity;

import androidx.recyclerview.widget.LinearLayoutManager;

import androidx.recyclerview.widget.RecyclerView;



import android.os.Bundle;



import com.firebase.ui.database.FirebaseRecyclerOptions;

import com.google.firebase.database.DataSnapshot;

import com.google.firebase.database.DatabaseError;

import com.google.firebase.database.DatabaseReference;

import com.google.firebase.database.FirebaseDatabase;

import com.google.firebase.database.Query;

import com.google.firebase.database.ValueEventListener;


public class BookMeal extends AppCompatActivity {


    RecyclerView recyclerView;

    MainAdapter mainAdapter;


    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_book_meal);


        recyclerView = (RecyclerView) findViewById(R.id.rv);

        recyclerView.setLayoutManager(new LinearLayoutManager(this));
```

```java
        FirebaseRecyclerOptions<MainModel> options =

            new FirebaseRecyclerOptions.Builder<MainModel>()

.setQuery(FirebaseDatabase.getInstance().getReference().child("meals"),
MainModel.class)

                    .build();


        mainAdapter = new MainAdapter(options);

        recyclerView.setAdapter(mainAdapter);



    }



    @Override

    protected void onStart() {

        super.onStart();



        mainAdapter.startListening();

    }



    @Override

    protected void onStop() {

        super.onStop();

        mainAdapter.stopListening();

    }

}
```

BookMeal 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"
```

```xml
    xmlns:tools="http://schemas.android.com/tools"

    android:layout_width="match_parent"

    android:layout_height="match_parent"

    tools:context=".BookMeal">


    <androidx.recyclerview.widget.RecyclerView

        android:id="@+id/rv"

        android:layout_width="409dp"

        android:layout_height="wrap_content"

        android:layout_marginStart="1dp"

        android:layout_marginTop="1dp"

        android:layout_marginEnd="1dp"

        android:layout_marginBottom="1dp"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent" />


    <Button

        android:id="@+id/sbmt_button"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Button"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toBottomOf="@+id/rv" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainAdapter:

```java
package com.example.iotproject;


import android.annotation.SuppressLint;

import android.view.LayoutInflater;

import android.view.View;

import android.view.ViewGroup;

import android.widget.Button;

import android.widget.TextView;

import android.widget.Toast;


import androidx.annotation.NonNull;

import androidx.recyclerview.widget.RecyclerView;


import com.firebase.ui.database.FirebaseRecyclerAdapter;

import com.firebase.ui.database.FirebaseRecyclerOptions;

import com.google.android.gms.tasks.OnFailureListener;

import com.google.android.gms.tasks.OnSuccessListener;

import com.google.firebase.database.FirebaseDatabase;


import java.util.HashMap;

import java.util.Map;


public class MainAdapter extends
FirebaseRecyclerAdapter<MainModel,MainAdapter.myViewHolder> {

    int alreadyOrdered = 0;


    /**

     * Initialize a {@link RecyclerView.Adapter} that listens to a Firebase
query. See

     * {@link FirebaseRecyclerOptions} for configuration options.

     *
```

```java
     * @param options
     */

    public MainAdapter(@NonNull FirebaseRecyclerOptions<MainModel> options)
{

        super(options);

    }



    @Override

    protected void onBindViewHolder(@NonNull myViewHolder holder,
@SuppressLint("RecyclerView") int position, @NonNull MainModel model) {


        holder.name.setText(model.getName());

        holder.curCount.setText("0");




        holder.btnSub.setEnabled(false);


        holder.btnSub.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {


                int num =
Integer.parseInt(holder.curCount.getText().toString());


                if(num>0){

                    num--;

                    holder.curCount.setText(String.format("%d",num));




if(Integer.parseInt(holder.curCount.getText().toString())<=0)
```

```java
                    holder.btnSub.setEnabled(false);


                }

            }

        });


        holder.btnAdd.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                int num =
Integer.parseInt(holder.curCount.getText().toString());


                num++;

                holder.btnSub.setEnabled(true);

                holder.curCount.setText(String.format("%d",num));

            }

        });


        holder.orderAdd.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                int k=0;


                if(alreadyOrdered==1){


                    Map<String,Object> map = new HashMap<>();

map.put(model.getName(),holder.curCount.getText().toString());


FirebaseDatabase.getInstance().getReference().child("Orders")
```

```java
                        .child(getRef(position).getKey()).updateChildren(map)

                                .addOnSuccessListener(new
OnSuccessListener<Void>() {

                                    @Override

                                    public void onSuccess(Void unused) {

Toast.makeText(holder.name.getContext(), "Data Updated Successfully!",
Toast.LENGTH_SHORT).show();

                                    }

                                })

                                .addOnFailureListener(new OnFailureListener() {

                                    @Override

                                    public void onFailure(@NonNull Exception e)
{

Toast.makeText(holder.name.getContext(), "Error while updating!",
Toast.LENGTH_SHORT).show();

                                    }

                                });


                }


                if(alreadyOrdered==0){

                    Map<String,Object> map = new HashMap<>();

map.put(model.getName(),holder.curCount.getText().toString());



FirebaseDatabase.getInstance().getReference().child("Orders").push()

                                .setValue(map)

                                .addOnSuccessListener(new
OnSuccessListener<Void>() {

                                    @Override

                                    public void onSuccess(Void unused) {
```

```java
Toast.makeText(holder.name.getContext(), "Data Added Successfully.",
Toast.LENGTH_SHORT).show();

                                        }

                                })

                                .addOnFailureListener(new OnFailureListener() {

                                        @Override

                                        public void onFailure(@NonNull Exception e)
{

Toast.makeText(holder.name.getContext(), "Error while Insertion.",
Toast.LENGTH_SHORT).show();

                                        }

                                });


                        alreadyOrdered=1;

                }


                }

        });




        }



        @NonNull

        @Override

        public myViewHolder onCreateViewHolder(@NonNull ViewGroup parent, int
viewType) {

                View view =
LayoutInflater.from(parent.getContext()).inflate(R.layout.main_item,parent,
false);

                return new myViewHolder(view);

        }
```

```java
    class myViewHolder extends RecyclerView.ViewHolder{

        TextView name,count,curCount;

        Button btnSub,btnAdd,orderAdd,orderDel;

        public myViewHolder(@NonNull View itemView) {
            super(itemView);

            name = (TextView) itemView.findViewById(R.id.nameItem);
            curCount = (TextView) itemView.findViewById(R.id.curCount);

            btnSub = (Button) itemView.findViewById(R.id.btnSub);
            btnAdd = (Button) itemView.findViewById(R.id.btnAdd);

            orderAdd = (Button) itemView.findViewById(R.id.AddBtn);
            orderDel = (Button) itemView.findViewById(R.id.DelBtn);

        }
    }
}
```

ModelClass:

```java
package com.example.iotproject;


public class MainModel {
```

```java
    String name,count;


    MainModel(){


    }


    public MainModel(String name, String count) {

        this.name = name;

        this.count = count;

    }


    public String getName() {

        return name;

    }


    public void setName(String name) {

        this.name = name;

    }


    public String getCount() {

        return count;

    }


    public void setCount(String count) {

        this.count = count;

    }

}
```

MainItem XML:

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

```xml
<androidx.cardview.widget.CardView

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

    xmlns:app="http://schemas.android.com/apk/res-auto"

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    app:cardCornerRadius="6dp"

    android:elevation="6dp"

    app:cardUseCompatPadding="true"

    >


    <LinearLayout

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        android:orientation="vertical"

        android:layout_marginLeft="7dp"

        >



    <LinearLayout

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        android:orientation="horizontal"

        >

    <TextView

        android:id="@+id/nameItem"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Dosa"

        android:textColor="@color/black"

        android:textStyle="bold"
```

```xml
        android:textSize="35sp"

        android:layout_marginLeft="15dp"

        android:textAllCaps="false"

        />


    <Button

        android:id="@+id/btnSub"

        android:layout_width="55dp"

        android:layout_height="wrap_content"

        android:text="-"

        android:textStyle="bold"

        android:layout_marginLeft="19dp"

        />


    <TextView

        android:id="@+id/curCount"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="0"

        android:textSize="20sp"

        android:layout_marginLeft="15dp"

        android:textAllCaps="false"

        />


    <Button

        android:id="@+id/btnAdd"

        android:layout_width="55dp"

        android:layout_height="wrap_content"

        android:text="+"

        android:textStyle="bold"
```

```xml
            android:layout_marginLeft="19dp"

            />



    </LinearLayout>



    <LinearLayout

        android:layout_marginTop="8dp"

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        android:orientation="horizontal"

        >

        <Button

            android:id="@+id/AddBtn"

            android:layout_width="wrap_content"

            android:layout_height="wrap_content"

            android:text="Add"

            android:textSize="20sp"

            android:backgroundTint="#4CAF50"

            android:layout_marginLeft="15dp"

            android:textAllCaps="false"

            />



        <Button

            android:id="@+id/DelBtn"

            android:layout_width="wrap_content"

            android:layout_height="wrap_content"

            android:text="Delete"

            android:backgroundTint="#BD2323"

            android:textSize="20sp"

            android:layout_marginLeft="15dp"
```
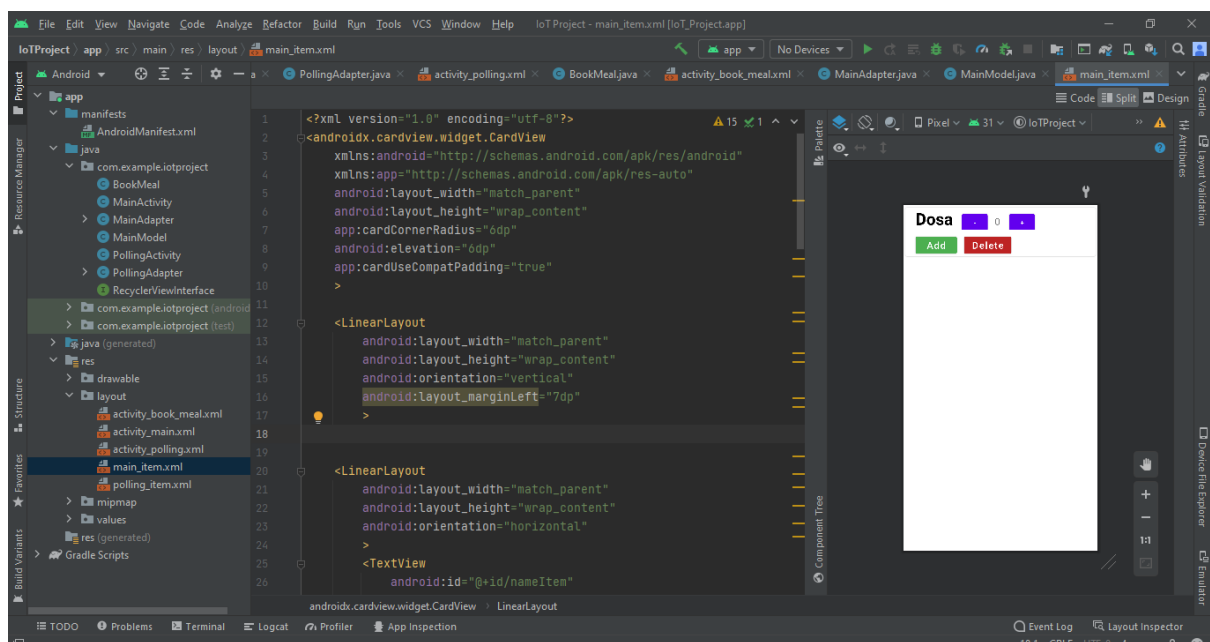
```
                android:textAllCaps="false"

            />

    </LinearLayout>



    </LinearLayout>


</androidx.cardview.widget.CardView>
```


PollingItem XML:

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

<androidx.cardview.widget.CardView

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

    xmlns:app="http://schemas.android.com/apk/res-auto"

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    app:cardCornerRadius="6dp"

    android:elevation="6dp"

    app:cardUseCompatPadding="true"
```

```xml
    >

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="vertical"
    android:layout_marginLeft="7dp"
    >


    <TextView
        android:id="@+id/nameItem"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Dosa"
        android:textColor="@color/black"
        android:textStyle="bold"
        android:textSize="35sp"
        android:layout_marginLeft="15dp"
        android:textAllCaps="false"
        />

    <CheckBox
        android:id="@+id/pollYes"
        android:layout_height="wrap_content"
        android:layout_width="wrap_content"
        android:text="Yes"
        android:layout_marginLeft="15dp"
        android:textColor="@color/black"
        android:textStyle="bold"
```

```xml
                    />


        <CheckBox

            android:layout_marginLeft="15dp"

            android:id="@+id/pollNo"

            android:layout_height="wrap_content"

            android:layout_width="wrap_content"

            android:text="No"

            android:textColor="@color/black"

            android:textStyle="bold"

            />



    </LinearLayout>


</androidx.cardview.widget.CardView>
```
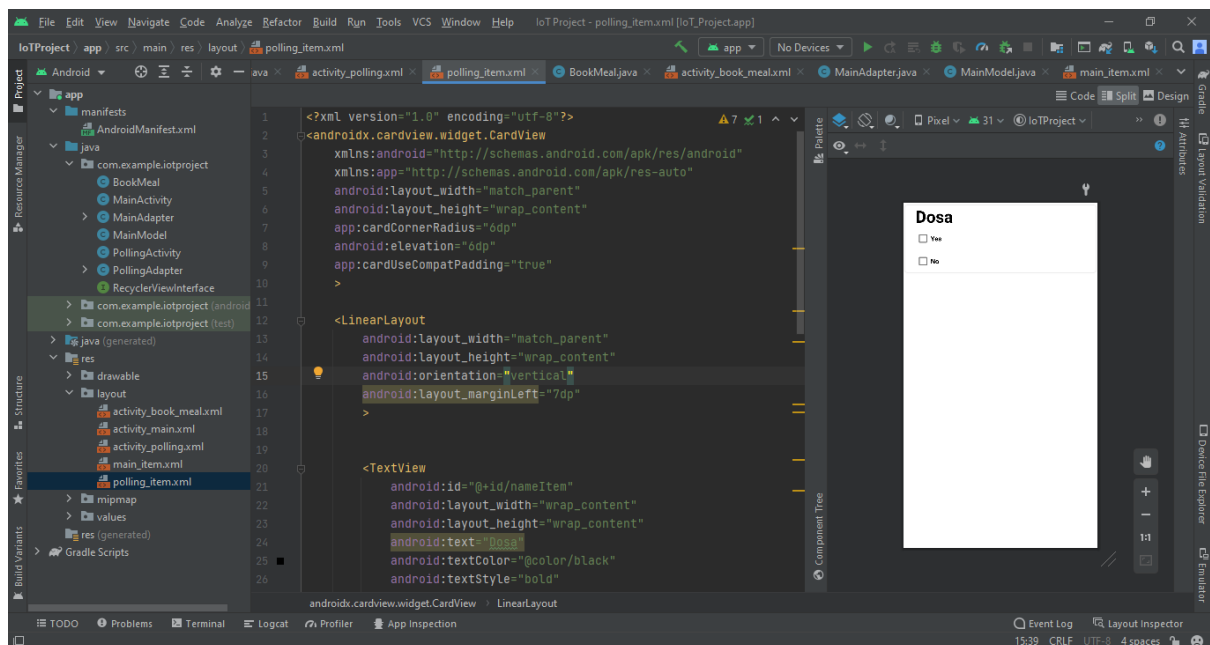

Gradle File:

```
plugins {

    id 'com.android.application'

    id 'com.google.gms.google-services'

}


android {

    compileSdk 31


    defaultConfig {

        applicationId "com.example.iotproject"

        minSdk 26

        targetSdk 31

        versionCode 1

        versionName "1.0"


        testInstrumentationRunner "androidx.test.runner.AndroidJUnitRunner"

    }


    buildTypes {

        release {

            minifyEnabled false

            proguardFiles getDefaultProguardFile('proguard-android-
optimize.txt'), 'proguard-rules.pro'

        }

    }

    compileOptions {

        sourceCompatibility JavaVersion.VERSION_1_8

        targetCompatibility JavaVersion.VERSION_1_8

    }

}
```

```
dependencies {


    implementation 'androidx.appcompat:appcompat:1.4.1'

    implementation 'com.google.android.material:material:1.5.0'

    implementation 'androidx.constraintlayout:constraintlayout:2.1.3'

    implementation 'com.google.firebase:firebase-database:20.0.3'



    implementation 'com.firebaseui:firebase-ui-database:7.1.1'

    implementation 'androidx.recyclerview:recyclerview:1.1.0'

    implementation 'androidx.cardview:cardview:1.0.0'

    testImplementation 'junit:junit:4.+'

    androidTestImplementation 'androidx.test.ext:junit:1.1.3'

    androidTestImplementation 'androidx.test.espresso:espresso-core:3.4.0'

}


apply plugin : 'com.google.gms.google-services'

apply plugin : 'com.android.application'
```

Mess Management App:

<u>Manifest File:</u>

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

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

    package="com.example.mess_management">


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

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


    <application

        android:allowBackup="true"

        android:icon="@mipmap/ic_launcher"

        android:label="@string/app_name"

        android:roundIcon="@mipmap/ic_launcher_round"

        android:supportsRtl="true"

        android:theme="@style/Theme.Mess_Management">

        <activity

            android:name=".OrdersActivity"

            android:exported="false" />

        <activity
```

```xml
                android:name=".PollingActivity"

                android:exported="false" />

        <activity

                android:name=".AddMeal"

                android:exported="false" />

        <activity

                android:name=".MainActivity"

                android:exported="true">

            <intent-filter>

                <action android:name="android.intent.action.MAIN" />


                <category android:name="android.intent.category.LAUNCHER"
/>

            </intent-filter>

        </activity>

    </application>


</manifest>
```

Gradle File:

```gradle
plugins {

    id 'com.android.application'

    id 'com.google.gms.google-services'

}



android {

    compileSdk 31


    defaultConfig {

        applicationId "com.example.iotproject"

        minSdk 26
```

```
        targetSdk 31

        versionCode 1

        versionName "1.0"


        testInstrumentationRunner "androidx.test.runner.AndroidJUnitRunner"

    }


    buildTypes {

        release {

            minifyEnabled false

            proguardFiles getDefaultProguardFile('proguard-android-
optimize.txt'), 'proguard-rules.pro'

        }

    }

    compileOptions {

        sourceCompatibility JavaVersion.VERSION_1_8

        targetCompatibility JavaVersion.VERSION_1_8

    }

}


dependencies {


    implementation 'androidx.appcompat:appcompat:1.4.1'

    implementation 'com.google.android.material:material:1.5.0'

    implementation 'androidx.constraintlayout:constraintlayout:2.1.3'

    implementation 'com.google.firebase:firebase-database:20.0.3'



    implementation 'com.firebaseui:firebase-ui-database:7.1.1'

    implementation 'androidx.recyclerview:recyclerview:1.1.0'

    implementation 'androidx.cardview:cardview:1.0.0'
```

```
    testImplementation 'junit:junit:4.+'

    androidTestImplementation 'androidx.test.ext:junit:1.1.3'

    androidTestImplementation 'androidx.test.espresso:espresso-core:3.4.0'

}



apply plugin : 'com.google.gms.google-services'

apply plugin : 'com.android.application'
```

MainActivity:

```
package com.example.mess_management;



import androidx.appcompat.app.AppCompatActivity;



import android.content.Intent;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;



public class MainActivity extends AppCompatActivity {



    Button Add,Polling,Orders;



    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);



        Add = findViewById(R.id.AddMenu);

        Polling = findViewById(R.id.Polling);
```

```java
        Orders = findViewById(R.id.orders);


        Add.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                startActivity(new
Intent(getApplicationContext(),AddMeal.class));

            }

        });


        Polling.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                startActivity(new
Intent(getApplicationContext(),PollingActivity.class));

            }

        });


        Orders.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                startActivity(new
Intent(getApplicationContext(),OrdersActivity.class));

            }

        });

    }

}
```

MainActivity XML:

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

<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
```

```xml
    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/AddMenu"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Add Menu"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.498"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.27" />


    <Button

        android:id="@+id/Polling"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Polling"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.498"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toBottomOf="@+id/AddMenu"

        app:layout_constraintVertical_bias="0.279" />
```

```xml
    <Button

        android:id="@+id/orders"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Orders"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toBottomOf="@+id/Polling" />

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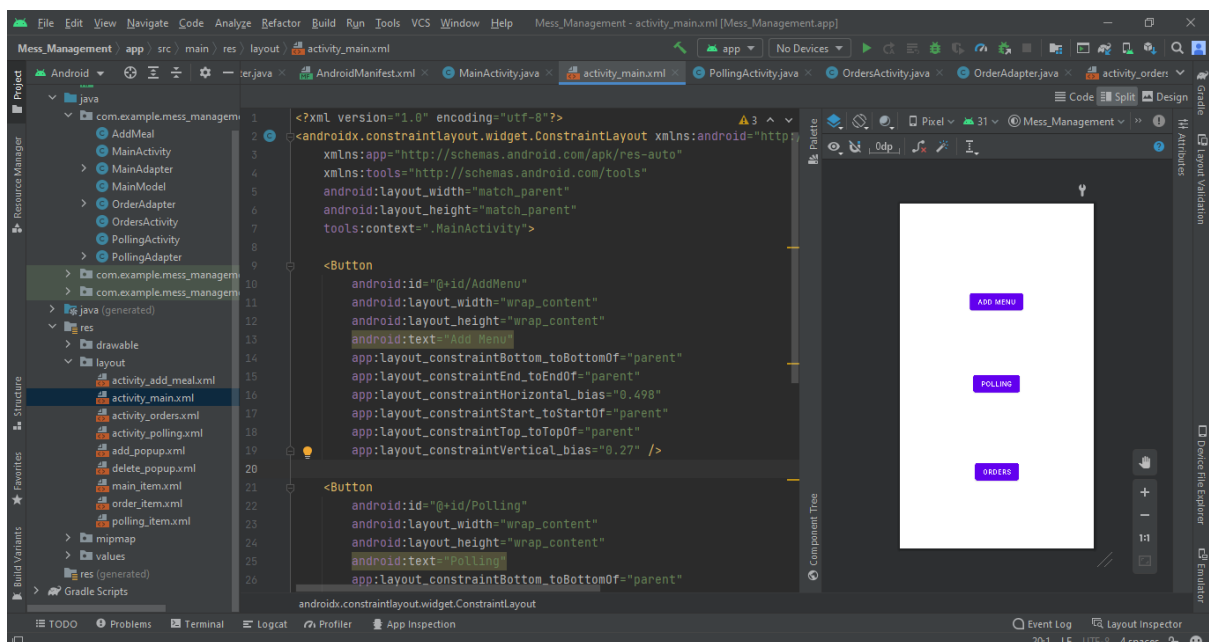

AddMealsActivity:

```java
package com.example.mess_management;


import androidx.annotation.NonNull;

import androidx.appcompat.app.AppCompatActivity;

import androidx.recyclerview.widget.LinearLayoutManager;

import androidx.recyclerview.widget.RecyclerView;
```

```java
import android.os.Bundle;

import android.view.Gravity;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.Toast;


import com.firebase.ui.database.FirebaseRecyclerOptions;

import com.google.android.gms.tasks.OnFailureListener;

import com.google.android.gms.tasks.OnSuccessListener;

import
com.google.android.material.floatingactionbutton.FloatingActionButton;

import com.google.firebase.database.DataSnapshot;

import com.google.firebase.database.DatabaseReference;

import com.google.firebase.database.FirebaseDatabase;

import com.google.firebase.database.Query;

import com.orhanobut.dialogplus.DialogPlus;

import com.orhanobut.dialogplus.ViewHolder;


import java.util.HashMap;

import java.util.Map;


public class AddMeal extends AppCompatActivity {

    RecyclerView recyclerView;

    MainAdapter mainAdapter;


    FloatingActionButton floatingActionButton;


    @Override
```

```java
    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);


        setContentView(R.layout.activity_add_meal);



        recyclerView = (RecyclerView) findViewById(R.id.rv);

        recyclerView.setLayoutManager(new LinearLayoutManager(this));


        FirebaseRecyclerOptions<MainModel> options =

                new FirebaseRecyclerOptions.Builder<MainModel>()

.setQuery(FirebaseDatabase.getInstance().getReference().child("meals"),
MainModel.class)

                    .build();



        DatabaseReference reference =
FirebaseDatabase.getInstance().getReference().child("meals");


        //Query query = reference.orderByChild("count");




        mainAdapter = new MainAdapter(options);

        recyclerView.setAdapter(mainAdapter);



        floatingActionButton = (FloatingActionButton)
findViewById(R.id.floatingActionButton);




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

```java
        @Override

        public void onClick(View v) {

            DialogPlus dialogPlus;

            dialogPlus =
DialogPlus.newDialog(recyclerView.getContext())

                    .setContentHolder(new
ViewHolder(R.layout.add_popup))

                    .setExpanded(false).setGravity(Gravity.CENTER)

                    .create();


            dialogPlus.show();


            View view = dialogPlus.getHolderView();


            Button btnAdd = (Button) view.findViewById(R.id.btnAdd);

            EditText text = (EditText) view.findViewById(R.id.addText);


            btnAdd.setOnClickListener(new View.OnClickListener() {


                @Override

                public void onClick(View v) {

                    if(text.getText().toString().isEmpty())

                        Toast.makeText(AddMeal.this, "Empty Data can't
be added", Toast.LENGTH_SHORT).show();

                    else{

                        Map<String,Object> map = new HashMap<>();

                        map.put("name",text.getText().toString());

                        map.put("count","0");



FirebaseDatabase.getInstance().getReference().child("meals").push()

                            .setValue(map)
```

```java
                                .addOnSuccessListener(new
OnSuccessListener<Void>() {

                                    @Override

                                    public void onSuccess(Void unused)
{

                                        Toast.makeText(AddMeal.this,
"Data Added Successfully.", Toast.LENGTH_SHORT).show();

                                        dialogPlus.dismiss();

                                    }

                                })
                                .addOnFailureListener(new
OnFailureListener() {

                                    @Override

                                    public void onFailure(@NonNull
Exception e) {

                                        Toast.makeText(AddMeal.this,
"Error while Insertion.", Toast.LENGTH_SHORT).show();

                                        dialogPlus.dismiss();

                                    }

                                });

                    }

                }});

        }
    });

    }

    @Override

    protected void onStart() {

        super.onStart();


        mainAdapter.startListening();

    }



    @Override
```

```java
    protected void onStop() {

        super.onStop();

        mainAdapter.stopListening();

    }

}
```

MainAdapter:

```java
package com.example.iotproject;


import android.annotation.SuppressLint;

import android.view.LayoutInflater;

import android.view.View;

import android.view.ViewGroup;

import android.widget.Button;

import android.widget.TextView;

import android.widget.Toast;


import androidx.annotation.NonNull;

import androidx.recyclerview.widget.RecyclerView;


import com.firebase.ui.database.FirebaseRecyclerAdapter;

import com.firebase.ui.database.FirebaseRecyclerOptions;

import com.google.android.gms.tasks.OnFailureListener;

import com.google.android.gms.tasks.OnSuccessListener;

import com.google.firebase.database.FirebaseDatabase;


import java.util.HashMap;

import java.util.Map;


public class MainAdapter extends
FirebaseRecyclerAdapter<MainModel,MainAdapter.myViewHolder> {
```

```java
    int alreadyOrdered = 0;


    /**
     * Initialize a {@link RecyclerView.Adapter} that listens to a Firebase
query. See
     * {@link FirebaseRecyclerOptions} for configuration options.
     *
     * @param options
     */

    public MainAdapter(@NonNull FirebaseRecyclerOptions<MainModel> options)
{

        super(options);

    }


    @Override

    protected void onBindViewHolder(@NonNull myViewHolder holder,
@SuppressLint("RecyclerView") int position, @NonNull MainModel model) {


        holder.name.setText(model.getName());

        holder.curCount.setText("0");




        holder.btnSub.setEnabled(false);


        holder.btnSub.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {


                int num =
Integer.parseInt(holder.curCount.getText().toString());
```

```java
            if(num>0){

                num--;

                holder.curCount.setText(String.format("%d",num));



if(Integer.parseInt(holder.curCount.getText().toString())<=0)

                    holder.btnSub.setEnabled(false);



            }

        }

    });


    holder.btnAdd.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View v) {

            int num =
Integer.parseInt(holder.curCount.getText().toString());


            num++;

            holder.btnSub.setEnabled(true);

            holder.curCount.setText(String.format("%d",num));

        }

    });


    holder.orderAdd.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View v) {

            int k=0;


            if(alreadyOrdered==1){
```

```java
                Map<String,Object> map = new HashMap<>();

map.put(model.getName(),holder.curCount.getText().toString());



FirebaseDatabase.getInstance().getReference().child("Orders")


.child(getRef(position).getKey()).updateChildren(map)

                        .addOnSuccessListener(new
OnSuccessListener<Void>() {

                            @Override

                            public void onSuccess(Void unused) {

Toast.makeText(holder.name.getContext(), "Data Updated Successfully!",
Toast.LENGTH_SHORT).show();

                            }

                        })

                        .addOnFailureListener(new OnFailureListener() {

                            @Override

                            public void onFailure(@NonNull Exception e)
{

Toast.makeText(holder.name.getContext(), "Error while updating!",
Toast.LENGTH_SHORT).show();

                            }

                        });



            }



            if(alreadyOrdered==0){

                Map<String,Object> map = new HashMap<>();

map.put(model.getName(),holder.curCount.getText().toString());
```

```java
FirebaseDatabase.getInstance().getReference().child("Orders").push()
                        .setValue(map)
                        .addOnSuccessListener(new
OnSuccessListener<Void>() {
                            @Override
                            public void onSuccess(Void unused) {

Toast.makeText(holder.name.getContext(), "Data Added Successfully.",
Toast.LENGTH_SHORT).show();

                            }
                        })
                        .addOnFailureListener(new OnFailureListener() {
                            @Override
                            public void onFailure(@NonNull Exception e)
{

Toast.makeText(holder.name.getContext(), "Error while Insertion.",
Toast.LENGTH_SHORT).show();

                            }
                        });


                alreadyOrdered=1;
            }
        });


    }


    @NonNull
    @Override
```

```java
    public myViewHolder onCreateViewHolder(@NonNull ViewGroup parent, int
viewType) {

        View view =
LayoutInflater.from(parent.getContext()).inflate(R.layout.main_item,parent,
false);

        return new myViewHolder(view);

    }


    class myViewHolder extends RecyclerView.ViewHolder{


        TextView name,count,curCount;


        Button btnSub,btnAdd,orderAdd,orderDel;


        public myViewHolder(@NonNull View itemView) {

            super(itemView);


            name = (TextView) itemView.findViewById(R.id.nameItem);

            curCount = (TextView) itemView.findViewById(R.id.curCount);


            btnSub = (Button) itemView.findViewById(R.id.btnSub);

            btnAdd = (Button) itemView.findViewById(R.id.btnAdd);


            orderAdd = (Button) itemView.findViewById(R.id.AddBtn);

            orderDel = (Button) itemView.findViewById(R.id.DelBtn);



        }

    }



}
```

MainModel Class:

```java
package com.example.iotproject;


public class MainModel {


    String name,count;


    MainModel(){


    }


    public MainModel(String name, String count) {

        this.name = name;

        this.count = count;

    }


    public String getName() {

        return name;

    }


    public void setName(String name) {

        this.name = name;

    }


    public String getCount() {

        return count;

    }


    public void setCount(String count) {

        this.count = count;
```

```
        }

}
```

AddMeals Activity 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=".AddMeal">


    <androidx.recyclerview.widget.RecyclerView

        android:id="@+id/rv"

        android:layout_width="409dp"

        android:layout_height="729dp"

        android:layout_marginStart="1dp"

        android:layout_marginTop="1dp"

        android:layout_marginEnd="1dp"

        android:layout_marginBottom="1dp"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent" />


    <com.google.android.material.floatingactionbutton.FloatingActionButton

        android:id="@+id/floatingActionButton"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:backgroundTint="#000"
```

```xml
        app:tint="#fff"

        android:clickable="true"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.929"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.976"

        app:srcCompat="@drawable/add_new" />


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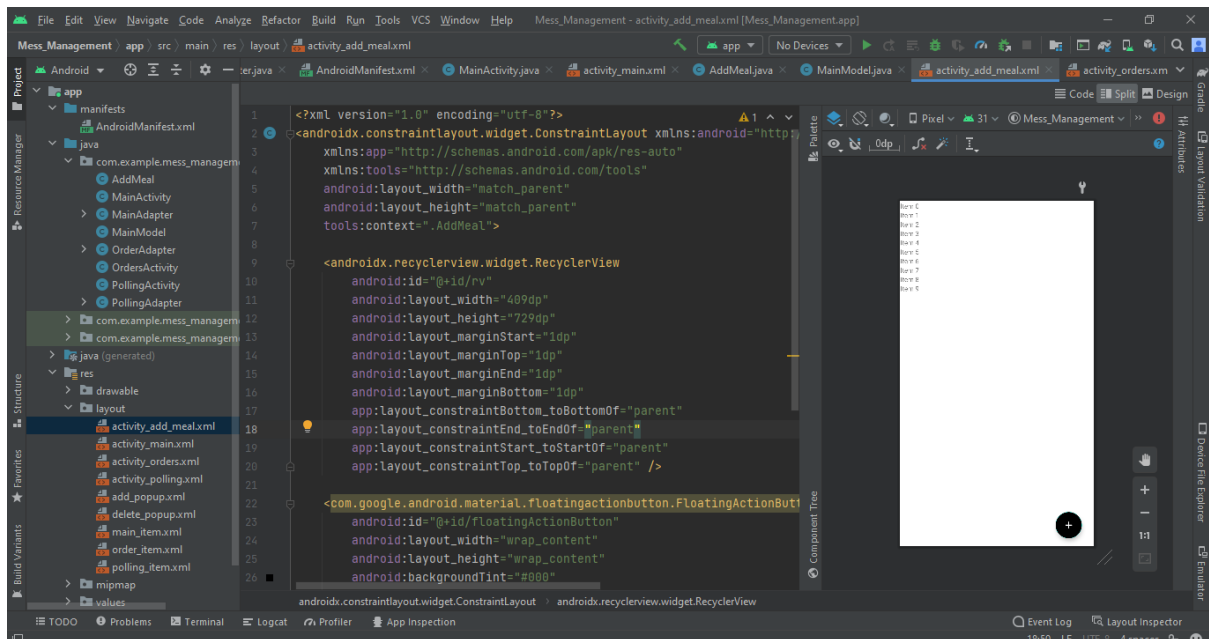

AddItem popup:

```xml
<?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="vertical"
```
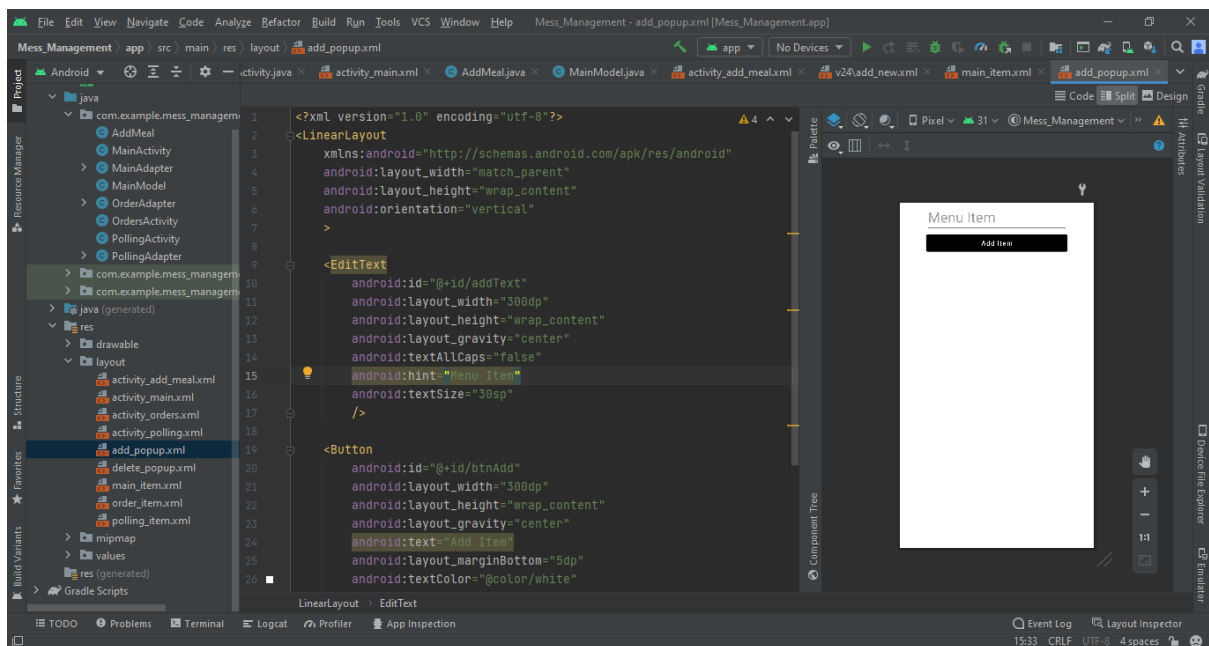
```xml
    >

    <EditText
        android:id="@+id/addText"

        android:layout_width="300dp"

        android:layout_height="wrap_content"

        android:layout_gravity="center"

        android:textAllCaps="false"

        android:hint="Menu Item"

        android:textSize="30sp"

        />

    <Button
        android:id="@+id/btnAdd"

        android:layout_width="300dp"

        android:layout_height="wrap_content"

        android:layout_gravity="center"

        android:text="Add Item"

        android:layout_marginBottom="5dp"

        android:textColor="@color/white"

        android:textAllCaps="false"

        android:backgroundTint="@color/black"

        />

</LinearLayout>
```

Delete Popup:

```xml
<?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="vertical"

    >



    <TextView

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:layout_gravity="center"

        android:textAllCaps="false"

        android:text="Delete?"

        android:textSize="30sp"

        />
```

```xml
    <Button

        android:id="@+id/btndelete"

        android:layout_width="300dp"

        android:layout_height="wrap_content"

        android:layout_gravity="center"

        android:text="Delete"

        android:layout_marginBottom="5dp"

        android:textColor="@color/white"

        android:textAllCaps="false"

        android:backgroundTint="@color/black"

        />

</LinearLayout>
```
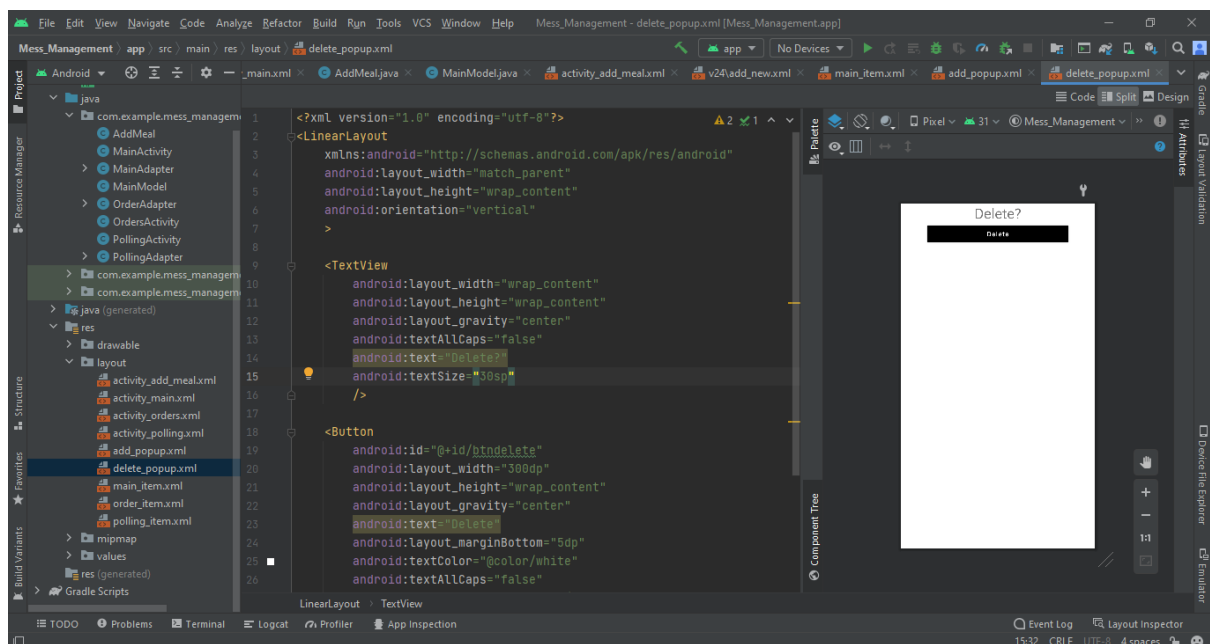

PollingActivity:

```java
package com.example.mess_management;


import androidx.annotation.NonNull;
```

```java
import androidx.appcompat.app.AppCompatActivity;

import androidx.recyclerview.widget.LinearLayoutManager;

import androidx.recyclerview.widget.RecyclerView;


import android.os.Bundle;

import android.util.Log;

import android.widget.TextView;

import android.widget.Toast;


import com.firebase.ui.database.FirebaseRecyclerOptions;

import com.google.firebase.FirebaseApp;

import com.google.firebase.database.DataSnapshot;

import com.google.firebase.database.DatabaseError;

import com.google.firebase.database.DatabaseReference;

import com.google.firebase.database.FirebaseDatabase;

import com.google.firebase.database.ValueEventListener;


import java.util.Map;


public class PollingActivity extends AppCompatActivity {

    public static int sum;

    FirebaseDatabase firebaseDatabase;


    // creating a variable for our

    // Database Reference for Firebase.

    DatabaseReference databaseReference;


    TextView textView;
```

```java
    RecyclerView pollingRecyclerView;

    PollingAdapter pollingAdapter;


    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);


        firebaseDatabase = FirebaseDatabase.getInstance();


        databaseReference = (DatabaseReference)
firebaseDatabase.getReference().child("meals");//.child("m1").child("count"
);


        getdata();


        setContentView(R.layout.activity_polling);



        pollingRecyclerView = (RecyclerView) findViewById(R.id.Polling_rv);

        pollingRecyclerView.setLayoutManager(new
LinearLayoutManager(this));


        FirebaseRecyclerOptions<MainModel> options =

                new FirebaseRecyclerOptions.Builder<MainModel>()

.setQuery(FirebaseDatabase.getInstance().getReference().child("meals"),
MainModel.class)

                    .build();


        pollingAdapter = new PollingAdapter(options);

        pollingRecyclerView.setAdapter(pollingAdapter);
```

```java
    }


    private void getdata() {



        // calling add value event listener method

        // for getting the values from database.

        databaseReference.addValueEventListener(new ValueEventListener() {

            @Override

            public void onDataChange(@NonNull DataSnapshot snapshot) {

                // this method is call to get the realtime

                // updates in the data.

                // this method is called when the data is

                // changed in our Firebase console.

                // below line is for getting the data from

                // snapshot of our database.


                sum=0;

                for(DataSnapshot ds: snapshot.getChildren()){


                    Map<String,Object> map = (Map<String,Object>)
ds.getValue();

                    Object count = map.get("count");

                    int cValue =
Integer.parseInt(String.valueOf(count));

                    sum = sum + cValue;


                    Log.d("Sum",String.valueOf(sum));


                }

                // textView.setText(String.valueOf(sum));

            }
```

```java
        @Override

        public void onCancelled(@NonNull DatabaseError error) {

            // calling on cancelled method when we receive

            // any error or we are not able to get the data.

            Toast.makeText(PollingActivity.this, "Fail to get data.",
Toast.LENGTH_SHORT).show();

        }

    });

}


@Override

protected void onStart() {

    super.onStart();


    pollingAdapter.startListening();

}


@Override

protected void onStop() {

    super.onStop();

    pollingAdapter.stopListening();

}


}
```

PollingActivity Adapter:

```java
package com.example.mess_management;



import static com.example.mess_management.PollingActivity.sum;
```

```java
import android.annotation.SuppressLint;

import android.view.Gravity;

import android.view.LayoutInflater;

import android.view.View;

import android.view.ViewGroup;

import android.widget.Button;

import android.widget.ProgressBar;

import android.widget.TextView;



import androidx.annotation.NonNull;

import androidx.recyclerview.widget.RecyclerView;



import com.firebase.ui.database.FirebaseRecyclerAdapter;

import com.firebase.ui.database.FirebaseRecyclerOptions;

import com.google.firebase.database.FirebaseDatabase;

import com.orhanobut.dialogplus.DialogPlus;

import com.orhanobut.dialogplus.ViewHolder;



public class PollingAdapter extends FirebaseRecyclerAdapter<MainModel,
PollingAdapter.myViewHolder> {


    /**

     * Initialize a {@link RecyclerView.Adapter} that listens to a Firebase
query. See

     * {@link FirebaseRecyclerOptions} for configuration options.

     *

     * @param options

     */

    public PollingAdapter(@NonNull FirebaseRecyclerOptions<MainModel>
options) {

        super(options);

    }
```

```java
    @Override

    protected void onBindViewHolder(@NonNull PollingAdapter.myViewHolder
holder, @SuppressLint("RecyclerView") int position, @NonNull MainModel
model) {


        holder.name.setText(model.getName());

        float num = (Integer.parseInt(model.getCount()))*100/sum;

        holder.count.setProgress((int) num);

        holder.poll.setText(String.valueOf((int) num)+"%");



    }



    @NonNull

    @Override

    public PollingAdapter.myViewHolder onCreateViewHolder(@NonNull
ViewGroup parent, int viewType) {



        View view =
LayoutInflater.from(parent.getContext()).inflate(R.layout.polling_item,pare
nt,false);

        return new PollingAdapter.myViewHolder(view);

    }



    class myViewHolder extends RecyclerView.ViewHolder{


        TextView name,poll;

        ProgressBar count;


        public myViewHolder(@NonNull View itemView) {

            super(itemView);


            name = (TextView) itemView.findViewById(R.id.dishName);
```

```
                count = (ProgressBar) itemView.findViewById(R.id.dishPoll);

                poll = (TextView) itemView.findViewById(R.id.pollText);

            }

        }

}
```

PollingActivity 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"

    android:orientation="vertical"

    tools:context=".PollingActivity">



    <androidx.recyclerview.widget.RecyclerView

        android:padding="10dp"

        android:id="@+id/Polling_rv"

        android:layout_width="409dp"

        android:layout_height="729dp"

        android:layout_marginStart="1dp"

        android:layout_marginTop="1dp"

        android:layout_marginEnd="1dp"

        android:layout_marginBottom="1dp"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintStart_toStartOf="parent"
```

```xml
            app:layout_constraintTop_toTopOf="parent" />

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

PollingActivity Item:

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

<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    xmlns:app="http://schemas.android.com/apk/res-auto"

    xmlns:tools="http://schemas.android.com/tools"

    app:cardUseCompatPadding="true">


    <TextView

        android:id="@+id/pollText"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:layout_gravity="center"

        android:layout_marginTop="35dp"

        android:text="40"

        app:layout_constraintBottom_toBottomOf="@+id/linearLayout"

        app:layout_constraintEnd_toEndOf="@+id/linearLayout"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="@+id/linearLayout"

        tools:ignore="InvalidId" />



    <LinearLayout

        android:id="@+id/linearLayout"

        android:layout_width="match_parent"

        android:layout_height="wrap_content"
```

```xml
        android:orientation="vertical"

        android:padding="7dp"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent">


        <TextView

            android:layout_gravity="center"

            android:id="@+id/dishName"

            android:layout_width="wrap_content"

            android:layout_height="wrap_content"

            android:text="Dish Name"

            android:textAllCaps="false"

            android:textColor="@color/black"

            android:textSize="30sp"

            android:textStyle="bold" />


        <ProgressBar

            android:id="@+id/dishPoll"

            style="?android:progressBarStyleHorizontal"

            android:layout_width="150dp"

            android:layout_height="150dp"

            android:layout_gravity="center"

            android:indeterminateOnly="false"

            android:progressDrawable="@drawable/circle"

            tools:progress="60" />


    </LinearLayout>


</androidx.constraintlayout.widget.ConstraintLayout>
```
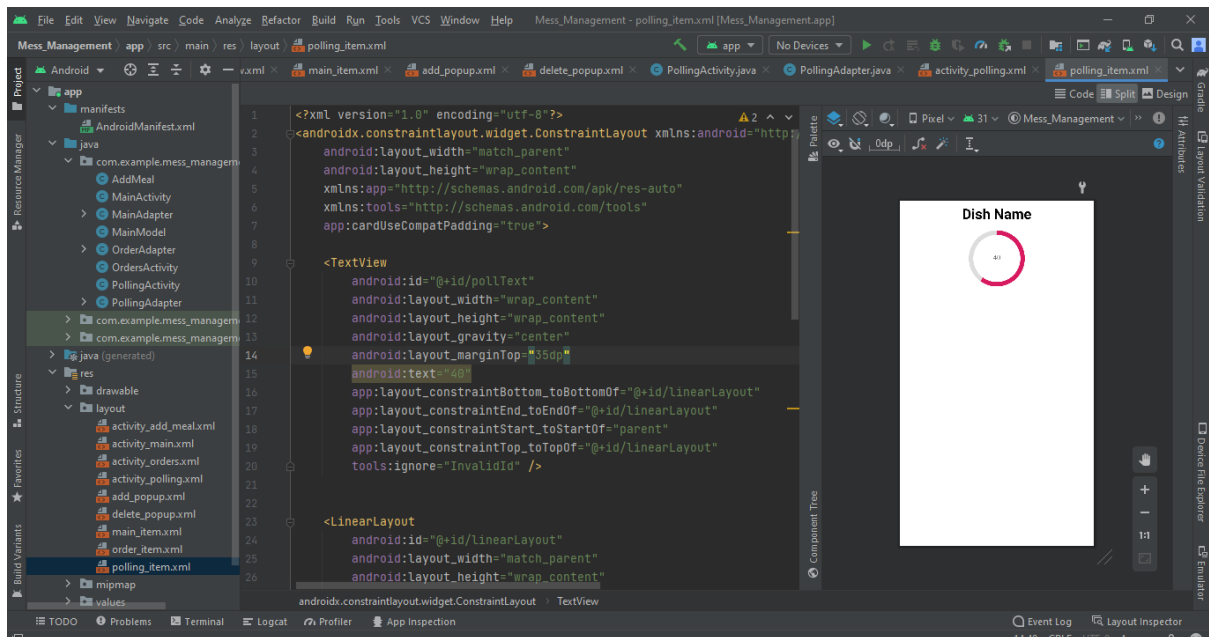
ProgressBar Properties:

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

<layer-list xmlns:android="http://schemas.android.com/apk/res/android">

    <item>


        <shape

            android:shape="ring"

            android:thicknessRatio="16"

            android:useLevel="false">


            <solid android:color="#DDD" />


        </shape>


    </item>



    <item>
```

```xml
        <rotate

            android:fromDegrees="270"

            android:toDegrees="270"

            >

            <shape

                android:shape="ring"

                android:thicknessRatio="16"

                android:useLevel="true">

                <solid android:color="#D81B60" />

            </shape>

        </rotate>

    </item>

</layer-list>
```
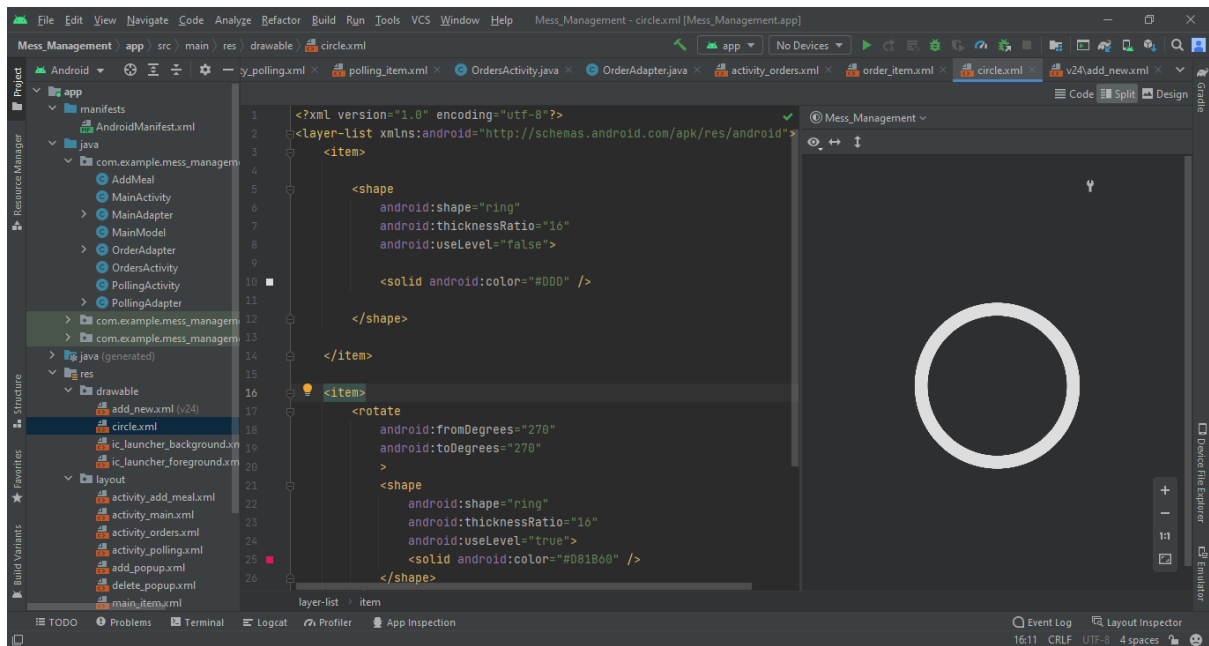

OrderActivity:

```java
package com.example.mess_management;
```

```java
import androidx.appcompat.app.AppCompatActivity;

import androidx.recyclerview.widget.LinearLayoutManager;

import androidx.recyclerview.widget.RecyclerView;


import android.os.Bundle;


import com.firebase.ui.database.FirebaseRecyclerOptions;

import com.google.firebase.database.FirebaseDatabase;


public class OrdersActivity extends AppCompatActivity {


    RecyclerView orderRecyclerView;

    OrderAdapter orderAdapter ;


    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_orders);


        orderRecyclerView = (RecyclerView)
findViewById(R.id.orderRecycler);

        orderRecyclerView.setLayoutManager(new LinearLayoutManager(this));


        FirebaseRecyclerOptions<MainModel> options =

                new FirebaseRecyclerOptions.Builder<MainModel>()

.setQuery(FirebaseDatabase.getInstance().getReference().child("meals"),
MainModel.class)

                        .build();


        orderAdapter = new OrderAdapter(options);

        orderRecyclerView.setAdapter(orderAdapter);
```

```java
        }

    @Override
    protected void onStart() {
        super.onStart();


        orderAdapter.startListening();

    }


    @Override
    protected void onStop() {
        super.onStop();

        orderAdapter.stopListening();

    }

}
```

OrderActivity Adapter:

```java
package com.example.mess_management;


import static com.example.mess_management.PollingActivity.sum;


import android.annotation.SuppressLint;

import android.view.Gravity;

import android.view.LayoutInflater;

import android.view.View;

import android.view.ViewGroup;

import android.widget.Button;

import android.widget.ProgressBar;

import android.widget.TextView;


import androidx.annotation.NonNull;
```

```java
import androidx.recyclerview.widget.RecyclerView;


import com.firebase.ui.database.FirebaseRecyclerAdapter;

import com.firebase.ui.database.FirebaseRecyclerOptions;

import com.google.firebase.database.FirebaseDatabase;

import com.orhanobut.dialogplus.DialogPlus;

import com.orhanobut.dialogplus.ViewHolder;


public class OrderAdapter extends FirebaseRecyclerAdapter<MainModel,
OrderAdapter.myViewHolder> {


    /**

     * Initialize a {@link RecyclerView.Adapter} that listens to a Firebase
query. See

     * {@link FirebaseRecyclerOptions} for configuration options.

     *

     * @param options

     */

    public OrderAdapter(@NonNull FirebaseRecyclerOptions<MainModel>
options) {

        super(options);

    }


    @Override

    protected void onBindViewHolder(@NonNull OrderAdapter.myViewHolder
holder, @SuppressLint("RecyclerView") int position, @NonNull MainModel
model) {


        holder.name.setText(model.getName());

        holder.order.setText(model.getCount());


    }
```

```java
    @NonNull
    @Override
    public OrderAdapter.myViewHolder onCreateViewHolder(@NonNull ViewGroup
parent, int viewType) {


        View view =
LayoutInflater.from(parent.getContext()).inflate(R.layout.order_item,parent
,false);

        return new OrderAdapter.myViewHolder(view);

    }



    class myViewHolder extends RecyclerView.ViewHolder{


        TextView name,order;


        public myViewHolder(@NonNull View itemView) {

            super(itemView);


            name = (TextView) itemView.findViewById(R.id.nameOrder);

            order = (TextView) itemView.findViewById(R.id.countOrder);

        }

    }


}
```

OrderActivity 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"
```

```xml
    android:layout_height="match_parent"

    tools:context=".OrdersActivity">


    <TextView

        android:id="@+id/textView"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Name"

        android:textSize="25sp"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.062"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.023" />


    <TextView

        android:id="@+id/quantityView"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Quantity"

        android:textSize="25sp"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.852"

        app:layout_constraintStart_toEndOf="@+id/textView"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.022" />


    <androidx.recyclerview.widget.RecyclerView
```

```xml
        android:id="@+id/orderRecycler"

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        android:layout_marginStart="1dp"

        android:layout_marginEnd="1dp"

        android:layout_marginBottom="2dp"


        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="1.0"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toBottomOf="@+id/textView"

        app:layout_constraintVertical_bias="0.0" />
</androidx.constraintlayout.widget.ConstraintLayout>
```
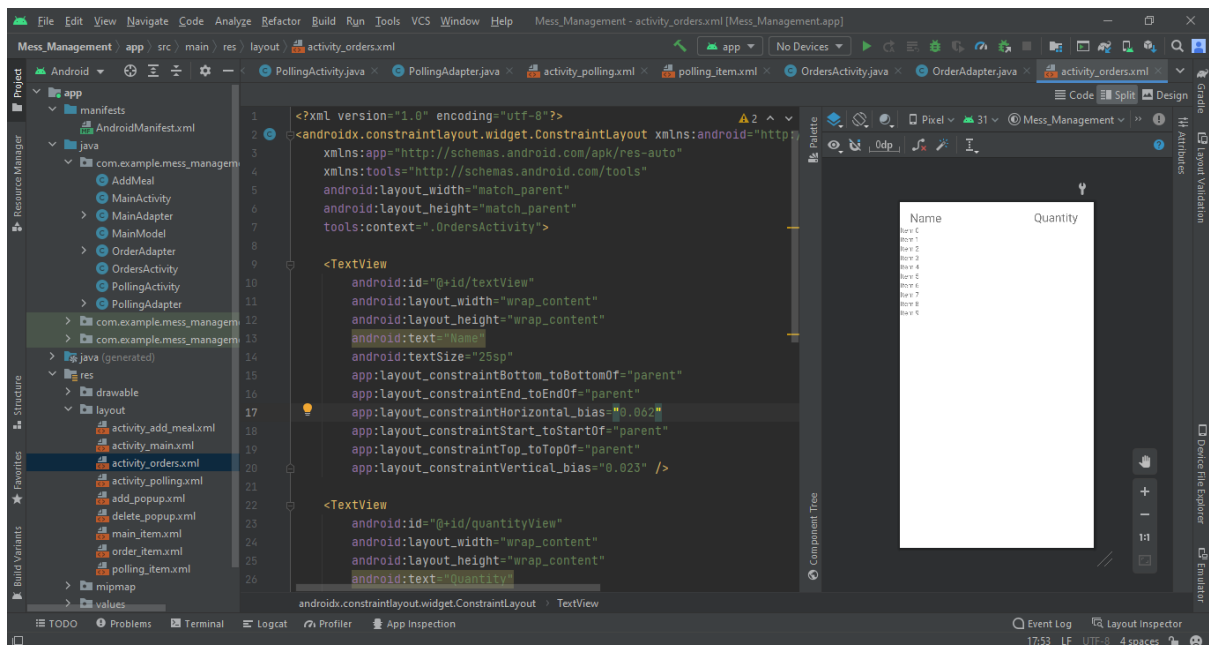

OrderItem:

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

<androidx.cardview.widget.CardView
xmlns:android="http://schemas.android.com/apk/res/android"

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    xmlns:app="http://schemas.android.com/apk/res-auto"

    app:cardUseCompatPadding="true">


    <TextView

        android:layout_marginLeft="30dp"

        android:layout_height="wrap_content"

        android:layout_width="match_parent"

        android:id="@+id/nameOrder"

        android:textSize="18sp"

        android:layout_marginTop="5dp"

        android:text="Add Items"

        android:layout_gravity="center"

        android:textColor="@color/black"

        android:textAllCaps="false"

        />


    <TextView

        android:layout_marginLeft="30dp"

        android:layout_height="wrap_content"

        android:layout_width="wrap_content"

        android:id="@+id/countOrder"

        android:textSize="18sp"

        android:layout_marginTop="5dp"

        android:text="count"

        android:layout_gravity="center"

        android:textColor="@color/black"
```

```
            android:textAllCaps="false"

        />



</androidx.cardview.widget.CardView>
```

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.cardview.widget.CardView xmlns:android="http://schemas.android
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    app:cardUseCompatPadding="true">

    <TextView
        android:layout_marginLeft="30dp"
        android:layout_height="wrap_content"
        android:layout_width="match_parent"
        android:id="@+id/nameOrder"
        android:textSize="18sp"
        android:layout_marginTop="5dp"
        android:text="Add Items"
        android:layout_gravity="center"
        android:textColor="@color/black"
        android:textAllCaps="false"
        />

    <TextView
        android:layout_marginLeft="30dp"
        android:layout_height="wrap_content"
        android:layout_width="wrap_content"
        android:id="@+id/countOrder"
        android:textSize="18sp"
```