

activity_start.xml

```
<?xml version="1.0"
encoding="utf-8"?>
<androidx.constraintlayout.w
idget.ConstraintLayout
xmlns:android="http://schema
s.android.com/apk/res/androi
d"

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

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

android:layout_width="match_
parent"

android:layout_height="match
_parent"
    tools:context=".start"

android:background="@drawabl
e/appstart">

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

start.java

```
package
com.example.callingapp_pract
_6;

import
androidx.appcompat.app.AppCo
mpatActivity;

import
android.content.Intent;
import android.os.Bundle;
import android.os.Handler;

public class start extends
AppCompatActivity {

    @Override
    protected void
onCreate(Bundle
savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.acti
vity_start);
    }
    @Override
    protected void
onResume() {
        super.onResume();

        new
Handler().postDelayed(new
Runnable() {
            @Override
            public void
run() {

                Intent

intent = new
Intent(start.this,
MainActivity.class);

startActivity(intent);
                finish();
            }
        }, 2000); //
        delay for 3 minutes (3 * 60
seconds * 1000 milliseconds)
    }
}
```

activity_main.xml

```
<?xml version="1.0"
encoding="utf-8"?>
<RelativeLayout
xmlns:android="http://schemas
s.android.com/apk/res/androi
d"

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

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

android:layout_width="match_
parent"

android:layout_height="match
_parent"

android:layout_alignParentSt
art="true"

android:layout_alignParentTo
p="true"

tools:context=".MainActivity
">

<androidx.appcompat.widget.L
inearLayoutCompat

android:layout_width="match_
parent"

android:layout_height="50dp"

android:layout_above="@id/sc
rollView"

android:layout_alignParentTo
p="true"

android:background="@drawabl
e/layout_shape"

android:minHeight="50dp"

android:orientation="horizon
tal">
```

```
<TextView

android:layout_width="wrap_c
ontent"

android:layout_height="wrap_
content"

android:layout_marginStart="
20dp"

android:layout_marginTop="5d
p"

android:text="Contacts"

android:textColor="#000000"

android:textSize="22dp"

android:textStyle="bold" />

<ImageView

android:layout_width="wrap_c
ontent"

android:layout_height="wrap_
content"

android:layout_marginStart="
170dp"

android:layout_marginTop="10
dp"

android:src="@drawable/more"
/>

</androidx.appcompat.widget.
LinearLayoutCompat>

<ScrollView

android:id="@+id/scrollView"

android:layout_width="match_
parent"

android:layout_height="590dp
```

```
"  
  
    android:layout_alignParentSt  
art="true"  
  
    android:layout_alignParentLe  
ft="true"  
  
    android:layout_alignParentTo  
p="false"  
  
    android:layout_alignParentEn  
d="true"  
  
    android:layout_alignParentRi  
ght="true"  
  
    android:layout_alignParentBo  
ttom="true"  
  
    android:minHeight="500dp"  
  
    tools:ignore="InvalidId">  
  
<androidx.recyclerview.widge  
t.RecyclerView  
  
    android:id="@+id/recycler_vi  
ew"  
  
    android:layout_width="match_  
parent"  
  
    android:layout_height="match  
_parent"  
  
    android:layout_marginStart="1  
0dp"  
  
    tools:listitem="@layout/item  
_contact" />  
    </ScrollView>  
</RelativeLayout>
```

MainActivity.java

```
package
com.example.callingapp_pract
_6;

import
android.annotation.SuppressL
int;

import
android.content.pm.PackageMa
nager;
import
android.database.Cursor;
import android.net.Uri;
import android.os.Bundle;
import
android.provider.ContactsCon
tract;
import android.widget.Toast;

import
androidx.annotation.NonNull;
import
androidx.appcompat.app.AppCo
mpatActivity;
import
androidx.core.app.ActivityCo
mpat;
import
androidx.core.content.Contex
tCompat;
import
androidx.recyclerview.widget
.LinearLayoutManager;
import
androidx.recyclerview.widget
.RecyclerView;

import java.util.ArrayList;
import android.Manifest;

public class MainActivity
extends AppCompatActivity {

    RecyclerView
recyclerView;
    ArrayList<ContactModel>
arrayList = new
ArrayList<ContactModel>();
```

```
    MainAdapter adapter;

    @Override
    protected void
onCreate(Bundle
savedInstanceState) {

        super.onCreate(savedInstance
State);

        setContentView(R.layout.acti
vity_main);

        recyclerView =
findViewById(R.id.recycler_v
iew);

        checkPermission();

    }

    private void
checkPermission() {

        if(ContextCompat.checkSelfPe
rmission(MainActivity.this,M
anifest.permission.READ_CONT
ACTS) !=
PackageManager.PERMISSION_GR
ANTED) {

            ActivityCompat.requestPermis
sions(MainActivity.this,
                new
String[]{Manifest.permission
.READ_CONTACTS},
                    100);

        }else{

            getContactList();

            adapter = new
MainAdapter(this,
arrayList);

            recyclerView.setAdapter(adapter);

            recyclerView.setLayoutManager(new
LinearLayoutManager(this));

        }
```

```

    }

    private void
getContactList() {
    Uri uri =
ContactsContract.Contacts.CONTENT_URI;

    String sort =
ContactsContract.CommonDataKinds.Phone.DISPLAY_NAME + "
ASC";

    try (Cursor cursor =
getContentResolver().query(uri, null, null, null, sort))
    {
        if (cursor !=
null && cursor.getCount() >
0) {
            while
(cursor.moveToNext()) {

@SuppressLint("Range")
String id =
cursor.getString(cursor.getColumnIndex(ContactsContract.
Contacts._ID));

@SuppressLint("Range")
String name =
cursor.getString(cursor.getColumnIndex(ContactsContract.
Contacts.DISPLAY_NAME));

        Uri
uriPhone =
ContactsContract.CommonDataKinds.Phone.CONTENT_URI;

        String
selection =
ContactsContract.CommonDataKinds.Phone.CONTACT_ID + "
=?";

        try

(Cursor phoneCursor =
getContentResolver().query(uriPhone, null, selection,
new String[]{id}, null)) {

while (phoneCursor != null

```

```

&& phoneCursor.moveToNext())
{

@SuppressLint("Range")
String number =
phoneCursor.getString(phoneC
ursor.getColumnIndex(Contact
sContract.CommonDataKinds.Ph
one.NUMBER));

ContactModel model = new
ContactModel();

model.setName(name);

model.setNumber(number);

arrayList.add(model);

}

}

} catch (Exception
e) {

e.printStackTrace();

}

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

adapter = new
MainAdapter(this,
arrayList);

recyclerView.setAdapter(adapter);

recyclerView.setLayoutManager(new
LinearLayoutManager(this));

}

}

```

item_contact.xml

```
<?xml version="1.0"
encoding="utf-8"?>
<androidx.constraintlayout.w
idget.ConstraintLayout
xmlns:android="http://schema
s.android.com/apk/res/androi
d"

    android:layout_width="match_
parent"

    android:layout_height="wrap_
content"

    xmlns:app="http://schemas.an
droid.com/apk/res-auto">

        <ImageView

            android:id="@+id/image"

            android:layout_width="80dp"

            android:layout_height="80dp"

            android:src="@drawable/perso
n"

            app:layout_constraintBottom_
toBottomOf="parent"

            app:layout_constraintStart_t
oStartOf="parent"

            app:layout_constraintTop_toT
opOf="parent" />

        <LinearLayout

            android:layout_width="0dp"

            android:layout_height="wrap_
content"

            android:orientation="vertica
l"

            android:layout_marginEnd="8d
p"
```

```
        android:layout_marginStart="
10dp"

        app:layout_constraintStart_t
oEndOf="@id/image"

        app:layout_constraintTop_toT
opOf="parent"

        app:layout_constraintBottom_
toBottomOf="parent"

        app:layout_constraintEnd_toE
ndOf="parent">
            <TextView

                android:layout_width="match_
parent"

                android:layout_height="wrap_
content"

                android:id="@+id/name"

                android:textSize="18dp"

                android:textColor="@color/bl
ack"

                android:paddingTop="4dp"

                android:textStyle="bold"

                android:text="name"

                android:paddingBottom="8dp"/
            >

            <TextView

                android:layout_width="match_
parent"

                android:layout_height="wrap_
content"

                android:id="@+id/number"

                android:text="9999999999"

                android:textSize="14dp"
```

```
android:textColor="@color/black" />
    </LinearLayout>
</androidx.constraintlayout.
widget.ConstraintLayout>
```


MainAdapter.java

```
package
com.example.callingapp_pract
_6;

import
android.annotation.SuppressL
int;
import android.app.Activity;
import android.text.Layout;
import
android.view.LayoutInflater;
import android.view.View;
import
android.view.ViewGroup;
import
android.widget.TextView;

import
androidx.annotation.NonNull;
import
androidx.recyclerview.widget
.RecyclerView;

import java.util.ArrayList;

public class MainAdapter
extends
RecyclerView.Adapter<MainAda
pter.ViewHolder> {
    Activity activity;
    ArrayList<ContactModel>
arrayList;

    @SuppressWarnings("NotifyDataSet
Changed")
    public
MainAdapter(Activity
activity,
ArrayList<ContactModel>
arrayList) {
        this.activity =
activity;
        this.arrayList =
arrayList;
    notifyDataSetChanged();
    }
    @NonNull
```

```
        @Override
        public ViewHolder
onCreateViewHolder(@NonNull
ViewGroup parent, int
viewType) {
            View view =
LayoutInflater.from(parent.g
etContext()).inflate(R.layu
out.item_contact, parent, false)
;
            return new
ViewHolder(view);
        }

        @Override
        public void
onBindViewHolder(@NonNull
ViewHolder holder, int
position) {
            ContactModel model =
arrayList.get(position);

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

            holder.t_number.setText(mode
l.getNumber());

        }

        @Override
        public int
getItemCount() {

            return
arrayList.size();
        }

        public static class
ViewHolder extends
RecyclerView.ViewHolder {
            TextView t_name ,
t_number;
            public
ViewHolder(@NonNull View
itemView) {
                super(itemView);
                t_name =
itemView.findViewById(R.id.n
ame);
                t_number =
```

```
itemView.findViewById(R.id.number);  
    }  
}  
}
```

ContactModel.java

```
package  
com.example.callingapp_pract  
_6;  
  
public class ContactModel {  
    String name, number;  
  
    public String getName()  
{  
        return name;  
    }  
  
    public void  
setName(String name) {  
        this.name = name;  
    }  
  
    public String  
getNumber() {  
        return number;  
    }  
  
    public void  
setNumber(String number) {  
        this.number =  
number;  
    }  
}
```

Output :

