

Latihan 1. Membuat Project RecyclerView dan CardView

Adding RecyclerView and CardView to the Project:

Untuk menambahkan recycler views dan CardView harus menambahkan kode berikut pada dependencies (build.gradle)

```
//adding a recyclerview  
  
compile 'com.android.support:recyclerview-v7:28.0.0'  
  
//adding a cardview  
  
compile 'com.android.support:cardview-v7:28.0.0'
```

atau

```
//adding a recyclerview  
  
implementation 'com.android.support:recyclerview-v7:28.0.0'  
  
//adding a cardview  
  
implementation 'com.android.support:cardview-v7:28.0.0'
```

Project ini dibuat dengan compileSdkVersion 28. Jika ada error (garis merah di dependencies), maka sesuaikan versi nya dengan compileSdkVersion

a. Adding a RecyclerView:

RecyclerView dapat ditambahkan dengan cara berikut:

<android.support.v7.widget.RecyclerView

- File gambar yang telah di download masukan pada drawable android studio.
- Buka **res > values > colors.xml** dan tambahkan kode berikut:

```
<?xml version="1.0" encoding="utf-8"?>  
<resources>  
    <color name="colorPrimary">#9C27B0</color>  
    <color name="colorPrimaryDark">#7B1FA2</color>  
    <color name="colorAccent">#FE3F80</color>
```

```

        <color name="textPrimary">#212121</color>
        <color name="textSecondary">#727272</color>
        <color name="white">#fff</color>
        <color name="background">#dae2e2</color>
    </resources>

```

- Buat **res > values > dimens.xml**

```

<resources>
    <!-- Default screen margins, per the Android Design guidelines. -->
    <dimen name="activity_horizontal_margin">5dp</dimen>
    <dimen name="activity_vertical_margin">5dp</dimen>
</resources>

```

- Pada **activity_main.xml** tambahkan kode berikut:

```

<?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:paddingBottom="@dimen/activity_vertical_margin"
    android:paddingLeft="@dimen/activity_horizontal_margin"
    android:paddingRight="@dimen/activity_horizontal_margin"
    android:paddingTop="@dimen/activity_vertical_margin"
    android:background="@color/background">

    <!--Menambahkan recycler View -->
    <android.support.v7.widget.RecyclerView
        android:id="@+id/recycler_view"
        android:scrollbars="vertical"
        android:layout_width="match_parent"
        android:layout_height = "match_parent"/>
</RelativeLayout>

```

- Buat layout baru dengan nama **song_list_item.xml**

```

<?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="wrap_content"
    android:paddingBottom="10dp"
    android:paddingLeft="2dp"
    android:paddingRight="2dp"
    android:paddingTop="10dp">

    <!-- CardView yang memiliki view yg lain -->
    <android.support.v7.widget.CardView
        xmlns:card_view="http://schemas.android.com/apk/res-auto"
        android:id="@+id/card_view"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:clickable="true"
        android:foreground="?android:attr/selectableItemBackground"
        card_view:cardCornerRadius="2dp"
        card_view:cardUseCompatPadding="true">

        <RelativeLayout
            android:layout_width="match_parent"

```

```

        android:layout_height="wrap_content">

        <ImageView
            android:id="@+id/iv_album_cover"
            android:layout_width="match_parent"
            android:layout_height="150dp"
            android:layout_alignParentTop="true"
            android:layout_centerHorizontal="true"
            android:clickable="true"
            android:foreground="?android:attr/selectableItemBackground"
            android:scaleType="centerCrop"
            android:src="@drawable/pillow_talk" />

        <TextView
            android:id="@+id/tv_song_name"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:gravity="center"
            android:text="Pillow Talk"
            android:textAllCaps="true"
            android:layout_below="@id/iv_album_cover"
            android:textColor="@color/colorAccent"
            android:textSize="18sp"
            android:textStyle="bold"/>

        <LinearLayout
            android:id="@+id/linearLayout"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_alignParentRight="true"
            android:layout_marginRight="3dp"
            android:orientation="horizontal">

        </LinearLayout>

        <TextView
            android:id="@+id/tv_singer"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Zayn"
            android:textColor="@color/textSecondary"
            android:textSize="16sp"
            android:textStyle="bold|italic"
            android:layout_below="@id/tv_song_name"
            android:layout_marginTop="10dp"
            android:layout_alignParentLeft="true"
            android:layout_alignParentStart="true" />

        <TextView
            android:id="@+id/tv_year"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_alignParentBottom="true"
            android:layout_alignParentEnd="true"
            android:layout_alignParentRight="true"
            android:text="2016"
            android:textColor="@color/textSecondary"
            android:textSize="16sp" />

        <TextView
            android:id="@+id/textView"

```

```

        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignTop="@+id/tv_rank"
        android:layout_toLeftOf="@+id/tv_rank"
        android:layout_toStartOf="@+id/tv_rank"
        android:text="# "
        android:textColor="@color/white"
        android:textSize="20sp"
        android:textStyle="italic" />

        <TextView
            android:id="@+id/tv_rank"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_alignParentTop="true"
            android:layout_alignParentRight="true"
            android:textColor="@color/white"
            android:text="1"
            android:textSize="20sp"
            android:textStyle="italic" />
    </RelativeLayout>
</android.support.v7.widget.CardView>
</RelativeLayout>

```

- Setelah menambahkan hal diatas, buat sebuah adapter dengan nama file **SongAdapter.Java** dan tambahkan kode berikut:

```

import android.support.v7.widget.RecyclerView;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.ImageView;
import android.widget.TextView;

import com.coderefer.recyclerviewtutorial.R;
import com.coderefer.recyclerviewtutorial.models.Song;

import java.util.ArrayList;
import java.util.List;
import java.util.zip.Inflater;

public class SongAdapter extends RecyclerView.Adapter<SongAdapter.ViewHolder> {

    private List<Song> songList;

    public static class ViewHolder extends RecyclerView.ViewHolder{
        //each data item is just a string in this case
        public TextView tvRank, tvSongName, tvSinger, tvYear;
        public ImageView ivAlbumCover;

        public ViewHolder(View v) {
            super(v);
            tvRank = (TextView)v.findViewById(R.id.tv_rank);
            tvSongName = (TextView) v.findViewById(R.id.tv_song_name);
            tvSinger = (TextView) v.findViewById(R.id.tv_singer);
            tvYear = (TextView) v.findViewById(R.id.tv_year);
            ivAlbumCover = (ImageView) v.findViewById(R.id.iv_album_cover);
        }
    }
}

```

```

    }

    //Provide a suitable constructor
    public SongAdapter(List<Song> songList){
        this.songList = songList;
    }

    //Create new views (invoked by the layout manager)
    @Override
    public SongAdapter.ViewHolder onCreateViewHolder(ViewGroup parent, int viewType) {

        View v =
        LayoutInflater.from(parent.getContext()).inflate(R.layout.song_list_item,parent,false)
        ;
        ViewHolder vh = new ViewHolder(v);
        return vh;
    }

    @Override
    public void onBindViewHolder(SongAdapter.ViewHolder holder, int position) {

        Song song = songList.get(position);
        holder.tvRank.setText(String.valueOf(song.getRank()));
        holder.tvSongName.setText(song.getName());
        holder.tvSinger.setText(song.getSinger());
        holder.tvYear.setText(song.getYear());
        holder.ivAlbumCover.setImageResource(song.getPic());
        holder.tvYear.setText("2016");
    }

    @Override
    public int getItemCount() {
        return songList.size();
    }
}

```

- Buatlah sebuah model dengan nama file **Song.Java**

```

public class Song {

    private String name, singer, year;
    private int pic, rank;

    public Song(String name, String singer, int rank, int pic){

        this.name = name;
        this.singer = singer;
        this.rank = rank;
        this.pic = pic;
    }

    public int getRank() {
        return rank;
    }

    public void setRank(int rank) {
        this.rank = rank;
    }
}

```

```

    public String getName() {
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }

    public int getPic() {
        return pic;
    }

    public void setPic(int pic) {
        this.pic = pic;
    }

    public String getSinger() {
        return singer;
    }

    public void setSinger(String singer) {
        this.singer = singer;
    }

    public String getYear() {
        return year;
    }

    public void setYear(String year) {
        this.year = year;
    }
}

```

- Ubahlah activity code yang ada pada **MainActivity.Java** dengan kode berikut:

```

import android.content.Context;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.support.v7.widget.GridLayoutManager;
import android.support.v7.widget.LinearLayoutManager;
import android.support.v7.widget.RecyclerView;
import android.support.v7.widget.StaggeredGridLayoutManager;
import android.view.Menu;
import android.view.MenuInflater;
import android.view.MenuItem;
import android.view.View;
import android.widget.Toast;

import com.coderefer.recyclerviewtutorial.adapters.SongAdapter;
import com.coderefer.recyclerviewtutorial.models.Song;

import java.util.ArrayList;
import java.util.List;

public class MainActivity extends AppCompatActivity {
    private RecyclerView mRecyclerView;
    private RecyclerView.LayoutManager mLayoutManager;

```

```

private List<Song> songList;
private SongAdapter songAdapter;

String[] names = {"I Took A Pill In Ibiza", "7 Years", "Pillow Talk", "Work
From Home", "Never Forget You", "Don't Let Me Down",
    "Love Yourself", "Me, Myself & I", "Cake By The Ocean", "Dangerous
Woman", "My House", "Stressed Out", "One Dance", "Middle", "No"};

String[] singers = {"Mike Posner", "Lukas Graham", "Zayn", "Fifth Harmony",
    "Zara Larsson & MNEK", "The Chainsmokers",
    "Justin Bieber", "G-Eazy x Bebe Rexha", "DNCE", "Ariana Grande", "Flo
Rida",
    "Twenty one Pilots", "Drake", "DJ Snake", "Meghan Trainor"};

int[] pics = {
    R.drawable.took_a_pill,
    R.drawable.seven_years,
    R.drawable.pillow_talk,
    R.drawable.work,
    R.drawable.never_forget_you,
    R.drawable.dont_let_me_down,
    R.drawable.love_yourself,
    R.drawable.me_myself_and_i,
    R.drawable.cake_by_the_ocean,
    R.drawable.dangerous_woman,
    R.drawable.my_house_florida,
    R.drawable.stressed_out,
    R.drawable.one_dance,
    R.drawable.middle,
    R.drawable.no};

@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    mRecyclerView = (RecyclerView) findViewById(R.id.recycler_view);

    //setting untuk improve performance
    //content tdk dapat mengubah size layout recyclerview
    if (mRecyclerView != null) {
        mRecyclerView.setHasFixedSize(true);
    }

    //using a linear layout manager
    mLayoutManager = new LinearLayoutManager(this);

    mRecyclerView.setLayoutManager(mLayoutManager);

    //intializing an arraylist called songlist
    songList = new ArrayList<>();

    //add song list
    for (int i = 0; i < names.length; i++) {

```

```

        Song song = new Song(names[i], singers[i], i + 1, pics[i]);
        songList.add(song);
    }
    //initializing adapter
    songAdapter = new SongAdapter(songList);

    //specifying an adapter to access data, create views and replace the
content
    mRecyclerView.setAdapter(songAdapter);
    songAdapter.notifyDataSetChanged();

    mRecyclerView.setOnItemClickListener(new RecyclerViewItemClickListener(this,
new RecyclerViewItemClickListener.OnItemClickListener() {
        @Override
        public void onItemClick(View view, int position) {
            Toast.makeText(MainActivity.this, "Card at " + position + " is
clicked", Toast.LENGTH_SHORT).show();
        }
    }));
}

@Override
public boolean onCreateOptionsMenu(Menu menu) {
    MenuInflater inflater = getMenuInflater();
    inflater.inflate(R.menu.main_menu, menu);
    return super.onCreateOptionsMenu(menu);
}

@Override
public boolean onOptionsItemSelected(MenuItem item) {
    switch (item.getItemId()) {
        case R.id.item_grid:
            // use this in case of gridlayoutmanager
            mLayoutManager = new GridLayoutManager(this, 2);
            mRecyclerView.setLayoutManager(mLayoutManager);
            break;
        case R.id.item_staggered_grid:
            // use this in case of Staggered GridLayoutManager
            mLayoutManager = new StaggeredGridLayoutManager(2,
StaggeredGridLayoutManager.VERTICAL);
            mRecyclerView.setLayoutManager(mLayoutManager);
            break;
        case R.id.item_horizontal:
            //horizontal linear layout
            mLayoutManager = new
LinearLayoutManager(MainActivity.this,LinearLayoutManager.HORIZONTAL,false);
            mRecyclerView.setLayoutManager(mLayoutManager);
            break;
    }
    return super.onOptionsItemSelected(item);
}
}

```


- Step terakhir adalah impelemntasi Click lIstener untuk RecyclerView. Recycler view tidak memiliki onItemClick() seperti ListView. Oleh karena itu kita tambahkan sebuah custom class yang mengextends RecyclerView.OnItemTouchListener(). Taambahkan file java dengan nama **RecyclerItemClickListener.Java**. Tambahkan kode program berikut:

```
import android.content.Context;
import android.support.v7.widget.RecyclerView;
import android.view.GestureDetector;
import android.view.MotionEvent;
import android.view.View;

public class RecyclerItemClickListener implements RecyclerView.OnItemTouchListener {
    private OnItemClickListener mListener;
    GestureDetector mGestureDetector;

    public interface OnItemClickListener{
        public void onItemClick(View view, int position);
    }

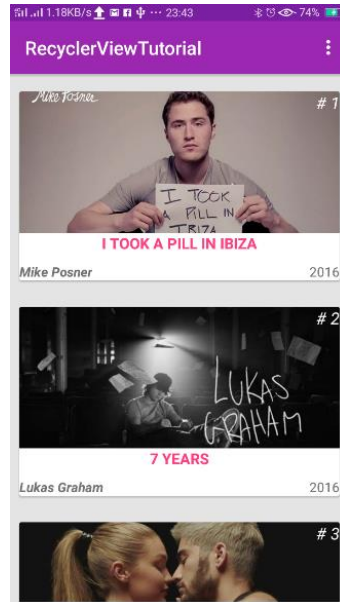
    public RecyclerItemClickListener(Context context, OnItemClickListener listener) {
        mListener = listener;
        mGestureDetector = new GestureDetector(context, new
        GestureDetector.SimpleOnGestureListener() {
            @Override public boolean onSingleTapUp(MotionEvent e) {
                return true;
            }
        });
    }

    @Override
    public boolean onInterceptTouchEvent(RecyclerView rv, MotionEvent e) {
        View childView = rv.findChildViewUnder(e.getX(),e.getY());
        if(childView != null && mListener != null &&
mGestureDetector.onTouchEvent(e)){
            mListener.onItemClick(childView, rv.getChildAdapterPosition(childView));
            return true;
        }
        return false;
    }

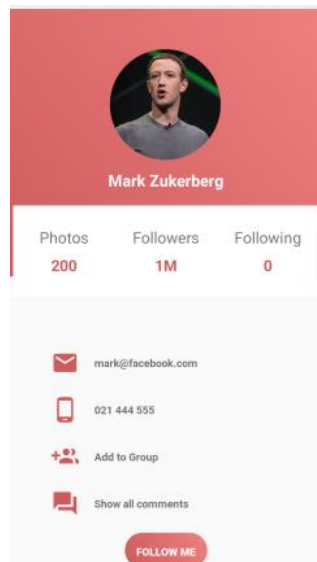
    @Override
    public void onTouchEvent(RecyclerView rv, MotionEvent e) {
    }

    @Override
    public void onRequestDisallowInterceptTouchEvent(boolean disallowIntercept) {
    }
}
```

Tampilan program setelah di running:



Latihan 2. Membuat Project CardView



Adapun komponen-komponen dan layout yang digunakan untuk mengembangkan halaman profile kali ini adalah :

1. Linear Layout
2. Relative Layout
3. Cardview
4. TextView
5. Button

- Setelah workspace android studi terbuka. Silahkan hilangkan action bar yang ada pada **styles.xml**.

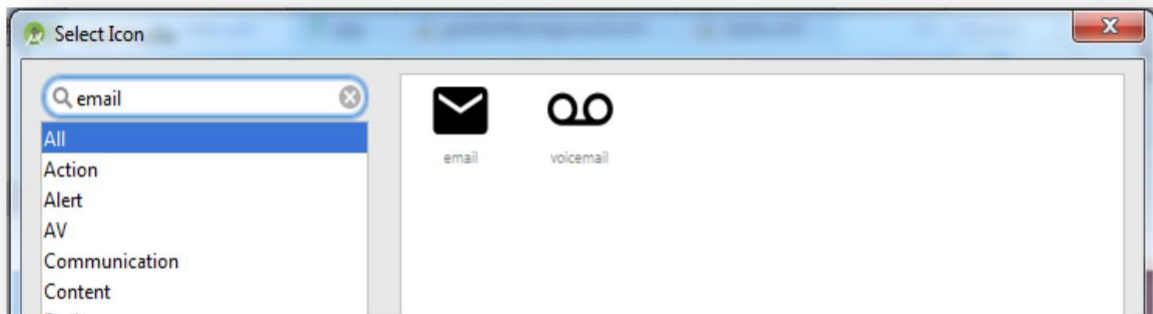
<style name="AppTheme" parent="Theme.AppCompat.Light.NoActionBar">

- Buka **Gradle Scripts > build gradle (module.app)** lalu tambahkan library cardview pada **dependencies**.

implementation 'com.android.support:cardview-v7: 28.0.0

*Ket: Sesuaikan dengan SDKVersion masing-masing. Pastikan laptop terkoneksi dengan internet lalu tekan **Sync Now**. Tunggu sampai proses build gradle selesai.*

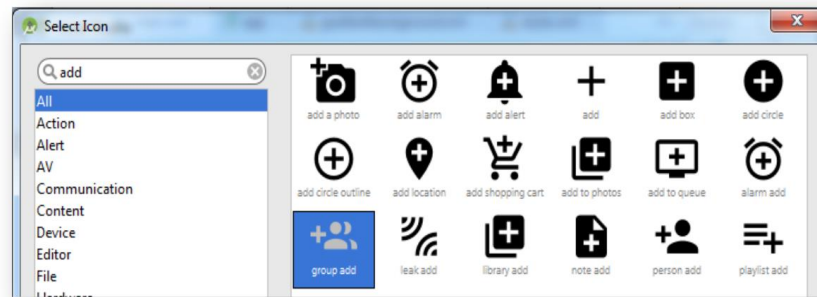
- Masukkan file gambar yang sudah didownload di classroom pada drawable. Atau dapat siapkan 4 icon (email, phone, add, dan comment). Klik kanan pada folder **Drawable > New > Vector asset > Klik icon Cari icon email > Ok > Next > Finish**.
- Icon Email



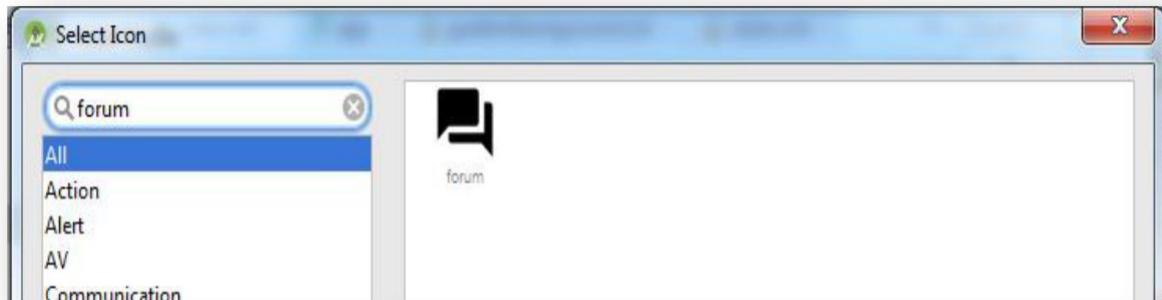
- Icon Phone



- Icon Add



- Icon Comment



- Klik masing-masing icon yang sudah ditambahkan pada **drawable** edit **fill colornya** dengan kode warna **#CD5C5C**.



Tuliskan kode berikut pada file **activity_main.xml**

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:background="@color/colorGraylight">

    <RelativeLayout
        android:layout_width="match_parent"
        android:layout_height="405dp">
```

```
<LinearLayout
    android:background="@drawable/gradientbackground"
    android:layout_width="match_parent"
    android:layout_height="350dp"
    android:orientation="vertical">
```

```
<ImageView
    android:layout_marginTop="50dp"
    android:layout_gravity="center_horizontal"
    android:layout_width="150dp"
    android:layout_height="150dp"
    android:src="@drawable/circle_image"/>
```

```
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center_horizontal"
    android:layout_marginTop="10dp"
    android:text="Mark Zuckerberg"
    android:textColor="#fff"
    android:textSize="21sp"
    android:textStyle="bold" />
```

```
</LinearLayout>
```

```
<android.support.v7.widget.CardView
    android:layout_width="400dp"
    android:layout_height="120dp"
    android:layout_marginTop="257dp"
    android:layout_centerHorizontal="true">
```

```
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="horizontal"
    android:weightSum="3">
```

```
<LinearLayout
    android:gravity="center"
    android:orientation="vertical"
    android:layout_width="0dp"
    android:layout_weight="1"
    android:layout_height="match_parent">
```

```
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Photos"
    android:textSize="20sp"/>
```

```
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textSize="20sp"
```

```

        android:text="200"
        android:textStyle="bold"
        android:textColor="@color/colorStartRed"
        android:paddingTop="10dp"/>

</LinearLayout>

<LinearLayout
    android:gravity="center"
    android:orientation="vertical"
    android:layout_width="0dp"
    android:layout_weight="1"
    android:layout_height="match_parent">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Followers"
        android:textSize="20sp"/>

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:paddingTop="10dp"
        android:text="1M"
        android:textColor="@color/colorStartRed"
        android:textSize="20sp"
        android:textStyle="bold" />
</LinearLayout>

<LinearLayout
    android:gravity="center"
    android:orientation="vertical"
    android:layout_width="0dp"
    android:layout_weight="1"
    android:layout_height="match_parent">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Following"
        android:textSize="20sp"/>

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:paddingTop="10dp"
        android:text="0"
        android:textColor="@color/colorStartRed"
        android:textSize="20sp"
        android:textStyle="bold" />
</LinearLayout>

</LinearLayout>
</android.support.v7.widget.CardView>

```

```
</RelativeLayout>
```

```
<LinearLayout
```

```
    android:layout_width="360dp"
    android:layout_height="wrap_content"
    android:orientation="vertical"
    android:paddingTop="40dp"
    android:layout_gravity="center">
```

```
    <LinearLayout
```

```
        android:orientation="horizontal"
        android:paddingLeft="30dp"
        android:layout_width="match_parent"
        android:layout_height="wrap_content">
```

```
        <ImageView
```

```
            android:layout_width="36dp"
            android:layout_height="36dp"
            android:src="@drawable/ic_email_black_24dp"/>
```

```
        <TextView
```

```
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="mark@facebook.com"
            android:textStyle="bold"
            android:layout_gravity="center_vertical"
            android:paddingLeft="20dp"/>
```

```
    </LinearLayout>
```

```
<LinearLayout
```

```
    android:layout_marginTop="25dp"
    android:orientation="horizontal"
    android:paddingLeft="30dp"
    android:layout_width="match_parent"
    android:layout_height="wrap_content">
```

```
    <ImageView
```

```
        android:layout_width="36dp"
        android:layout_height="36dp"
        android:src="@drawable/ic_phone_android_black_24dp"/>
```

```
    <TextView
```

```
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="021 444 555"
        android:textStyle="bold"
        android:layout_gravity="center_vertical"
        android:paddingLeft="20dp"/>
```

```
</LinearLayout>
```

```
<LinearLayout
```

```
    android:layout_marginTop="25dp"
    android:orientation="horizontal"
```

```
    android:paddingLeft="30dp"
    android:layout_width="match_parent"
    android:layout_height="wrap_content">
```

```
<ImageView
    android:layout_width="36dp"
    android:layout_height="36dp"
    android:src="@drawable/ic_group_add_black_24dp"/>
```

```
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Add to Group"
    android:textStyle="bold"
    android:layout_gravity="center_vertical"
    android:paddingLeft="20dp"/>
```

```
</LinearLayout>
```

```
<LinearLayout
    android:layout_marginTop="25dp"
    android:orientation="horizontal"
    android:paddingLeft="30dp"
    android:layout_width="match_parent"
    android:layout_height="wrap_content">
```

```
<ImageView
    android:layout_width="36dp"
    android:layout_height="36dp"
    android:src="@drawable/ic_forum_black_24dp"/>
```

```
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Show all comments"
    android:textStyle="bold"
    android:layout_gravity="center_vertical"
    android:paddingLeft="20dp"/>
```

```
</LinearLayout>
```

```
</LinearLayout>
```

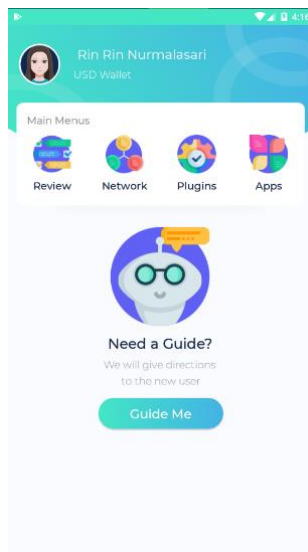
```
<Button
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_centerHorizontal="true"
    android:layout_gravity="center_horizontal"
    android:layout_marginTop="20dp"
    android:background="@drawable/buttonstyle"
    android:text="Follow Me"
    android:textColor="#fff"
    android:textStyle="bold" />
```

```
</LinearLayout>
```


TUGAS UNTUK DI RUMAH (KELOMPOK 2-3 Orang):

DEADLINE: Jumat, 30 Agustus 2019

1. Buatlah aplikasi seperti latihan 2 yang berisi biodata masing-masing. Design dibebaskan namun terdapat cardview. *(Seluruh anggota kelompok wajib membuat desain biodata)*
2. Buatlah XML tampilan berikut ini dengan cardview:



3. Buatlah recycler view seperti tampilan dibawah ini:

