09

RecyclerView

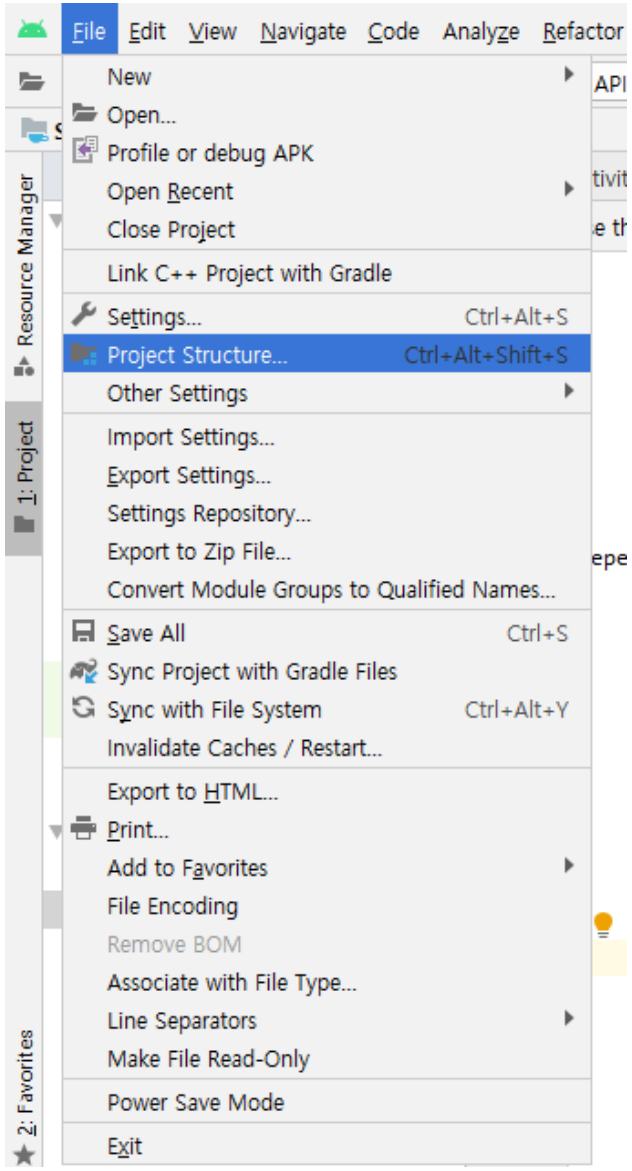
리사이클러뷰

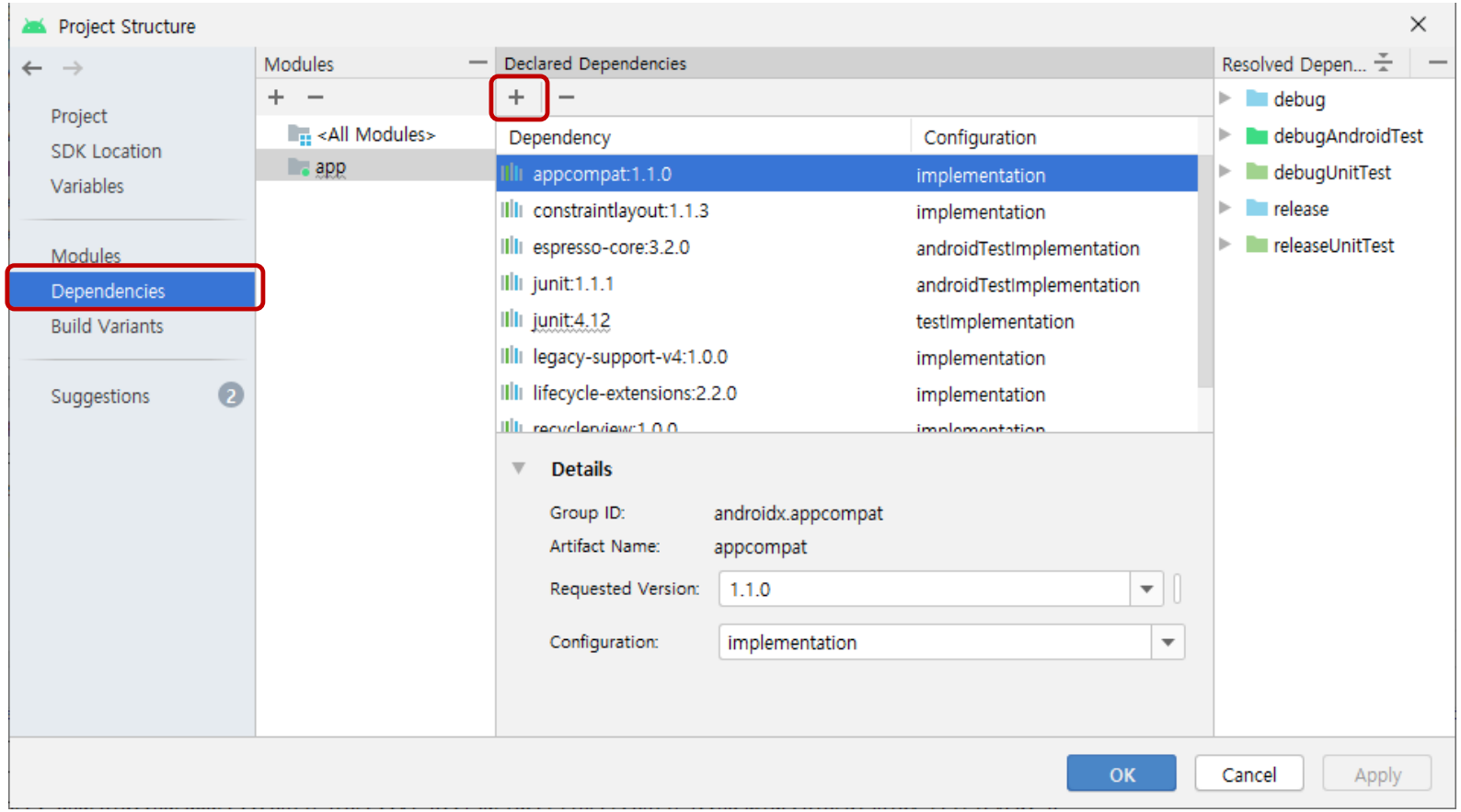
리사이클러뷰

- 리사이클러뷰는 리스트뷰의 단점을 보완
- 보다 발전된 형태의 리스트를 표현하기 위한 리스트
- 뷰홀더 패턴을 강제
- 이벤트 리스너와 커서(Cursor) 미지원

클래스	설명
RecyclerView.Adapter	어댑터뷰의 어댑터와 같은 역할
RecyclerView.ViewHolder	뷰홀더 클래스는 이것을 상속해야 함
LayoutManager	아이템을 어떻게 배치할 것인지 결정
RecyclerView.ItemAnimator	아이템이 추가, 삭제 또는 재정렬될 때 애니메이션 정의
RecyclerView.ItemDecoration	아이템을 세부적으로 꾸밈

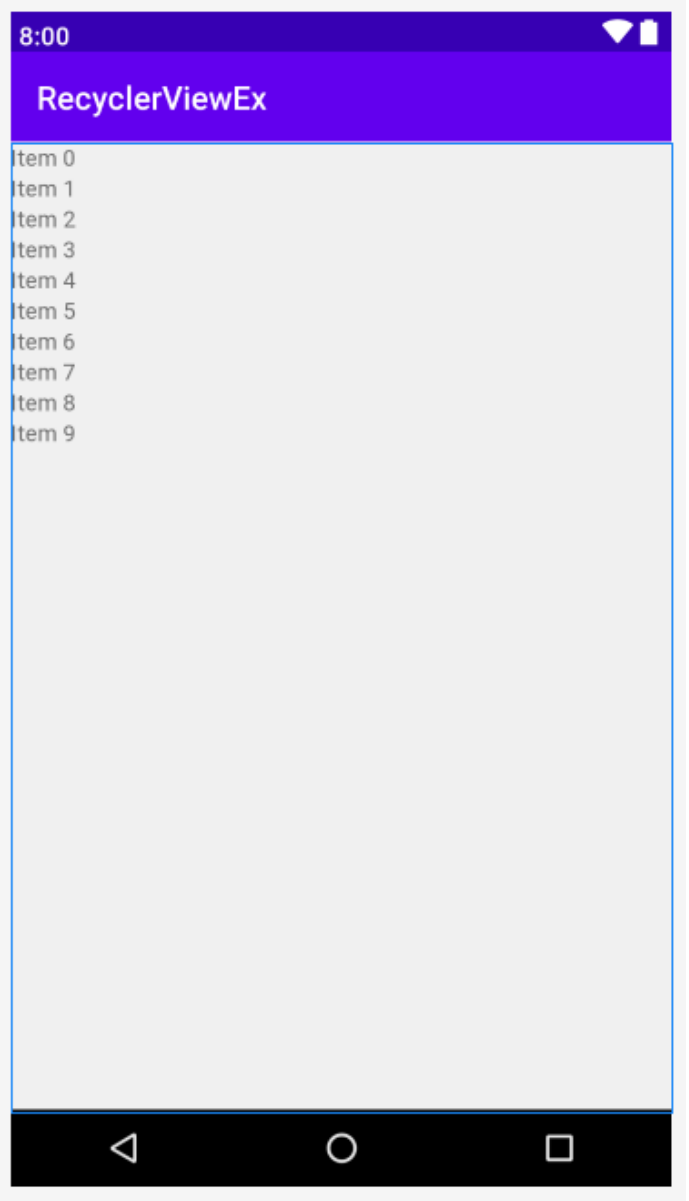
라이브러리 추가 : 방법1


File
Edit
View
Navigate
Code
Analyze
Refactor
New
Open...
Profile or debug APK
Open Recent
Close Project
Link C++ Project with Gradle
Settings... Ctrl+Alt+S
Project Structure... Ctrl+Alt+Shift+S
Other Settings
Import Settings...
Export Settings...
Settings Repository...
Export to Zip File...
Convert Module Groups to Qualified Names...
Save All Ctrl+S
Sync Project with Gradle Files
Sync with File System Ctrl+Alt+Y
Invalidate Caches / Restart...
Export to HTML...
Print...
Add to Favorites
File Encoding
Remove BOM
Associate with File Type...
Line Separators
Make File Read-Only
Power Save Mode
Exit
Resource Manager
1: Project
2: Favorites

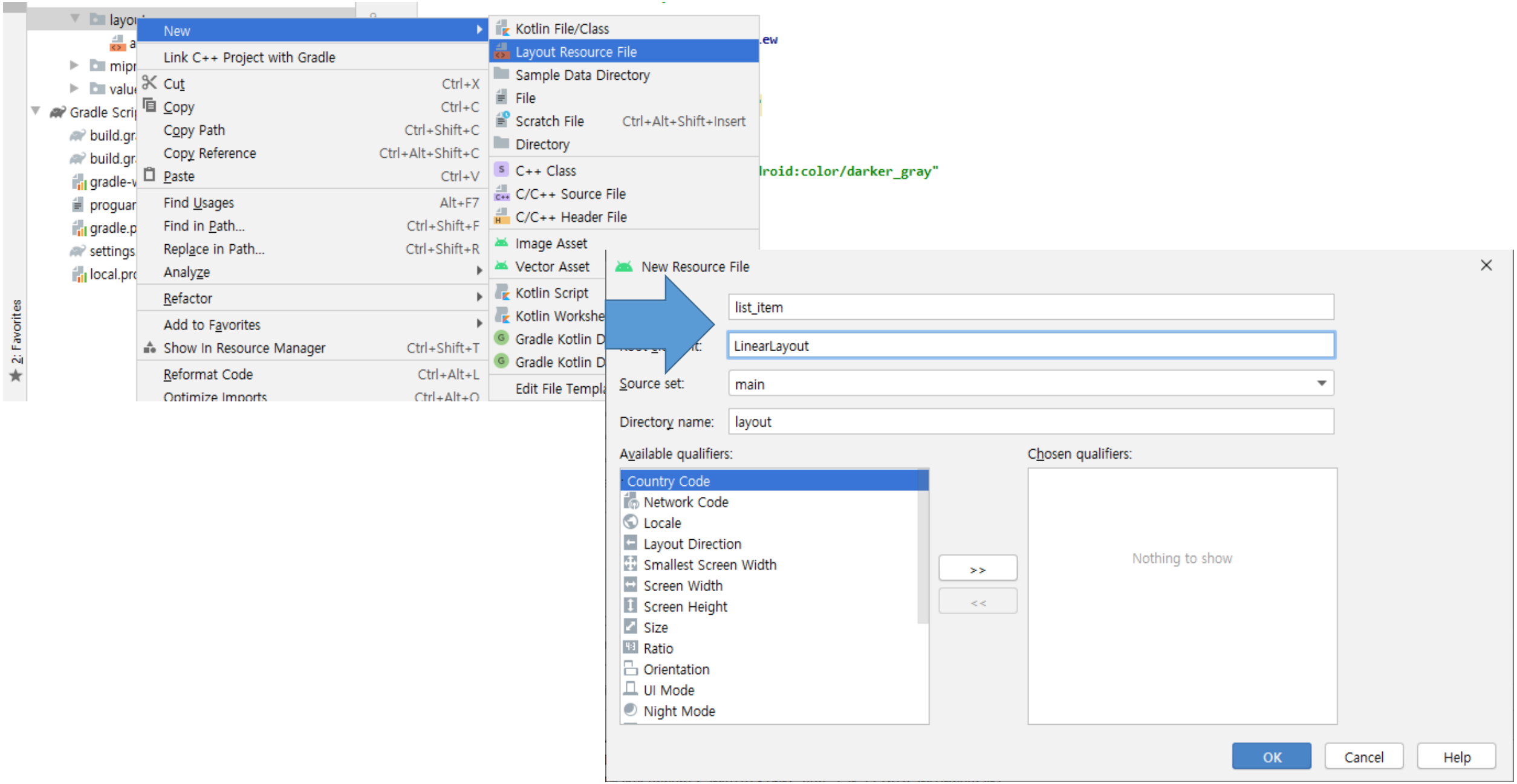

Project Structure
Project
SDK Location
Variables
Modules
Dependencies
Build Variants
Suggestions
Modules
<All Modules>
app
Declared Dependencies
Dependency
Configuration
appcompat:1.1.0 implementation
constraintlayout:1.1.3 implementation
espresso-core:3.2.0 androidTestImplementation
junit:1.1.1 androidTestImplementation
junit:4.12 testImplementation
legacy-support-v4:1.0.0 implementation
lifecycle-extensions:2.2.0 implementation
Details
Group ID: androidx.appcompat
Artifact Name: appcompat
Requested Version: 1.1.0
Configuration: implementation
Resolved Depen...
debug
debugAndroidTest
debugUnitTest
release
releaseUnitTest
OK
Cancel
Apply

activity_main.xml

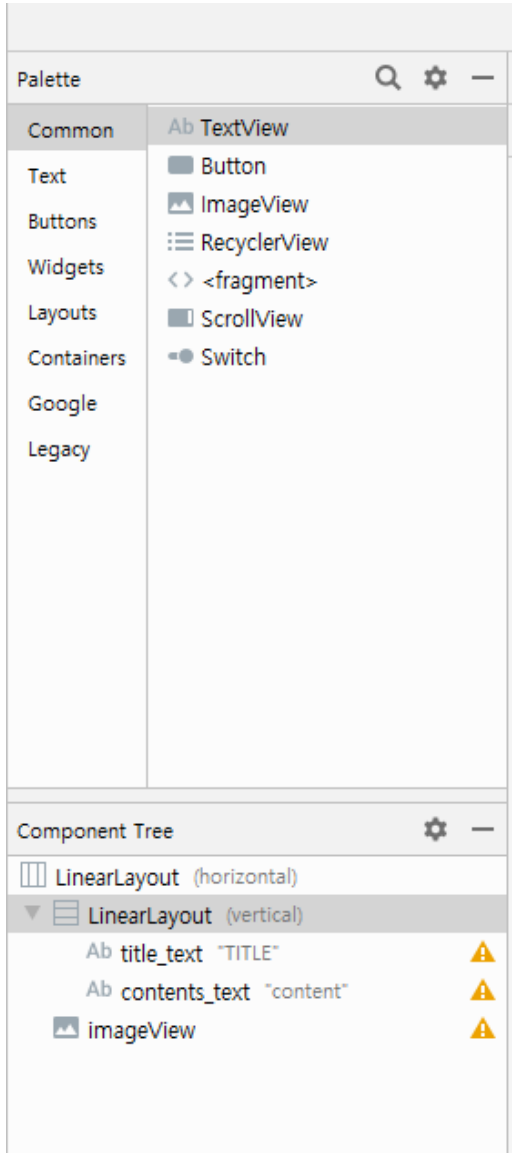

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical"
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <androidx.recyclerview.widget.RecyclerView
        android:id="@+id/recyclerView"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:background="#F0F0F0"
        />
</LinearLayout>
```

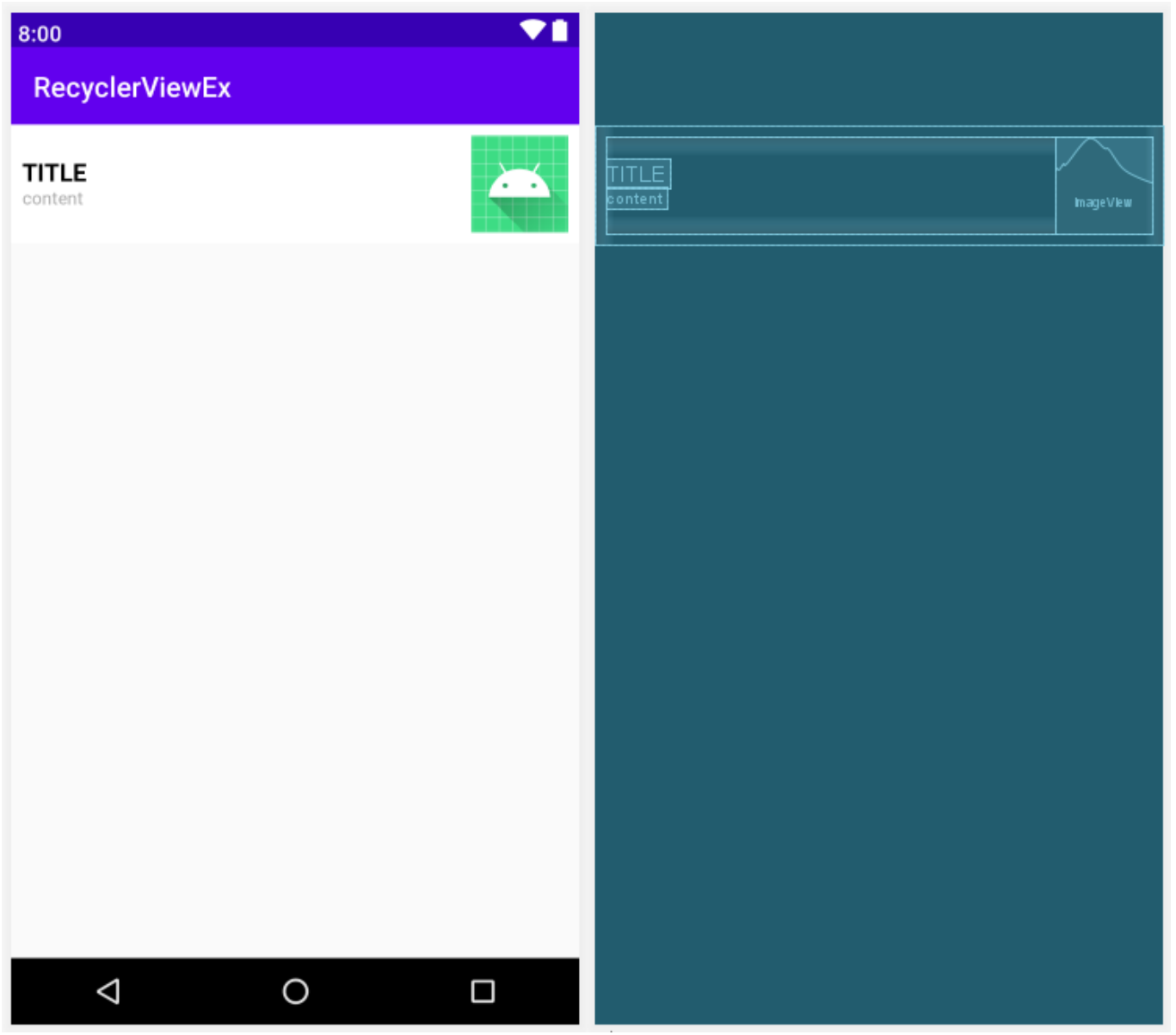


list_item.xml



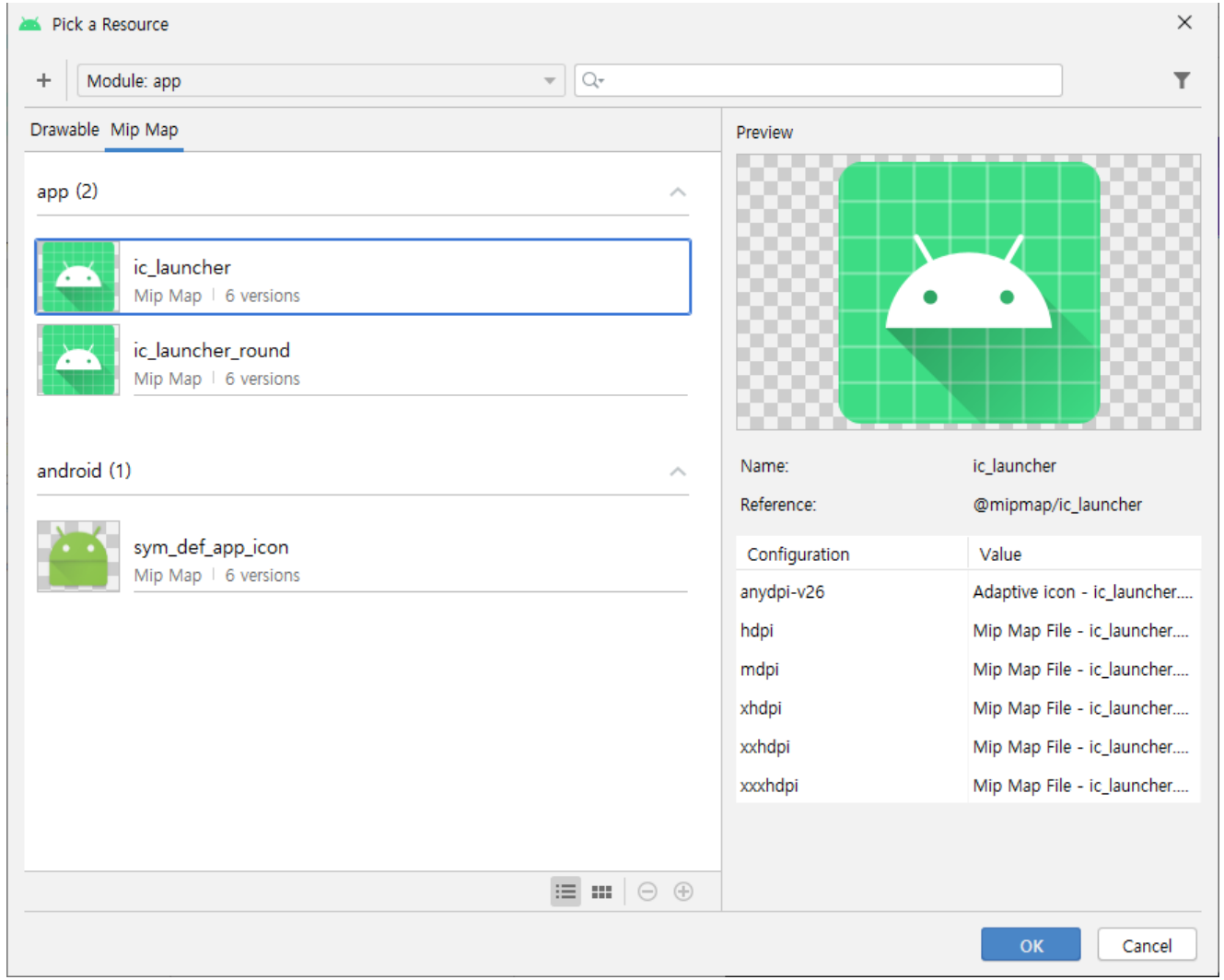
list_item.xml



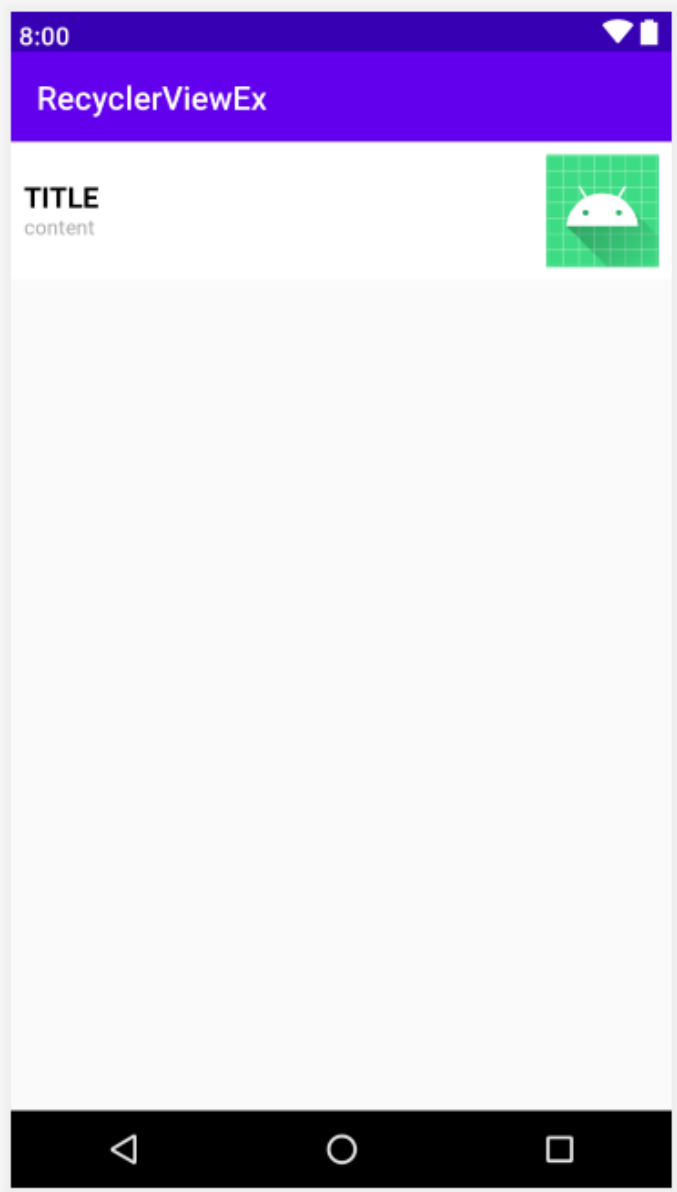


list_item.xml


```
<ImageView
    android:id="@+id/imageView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    app:srcCompat="@mipmap/ic_launcher" />
```

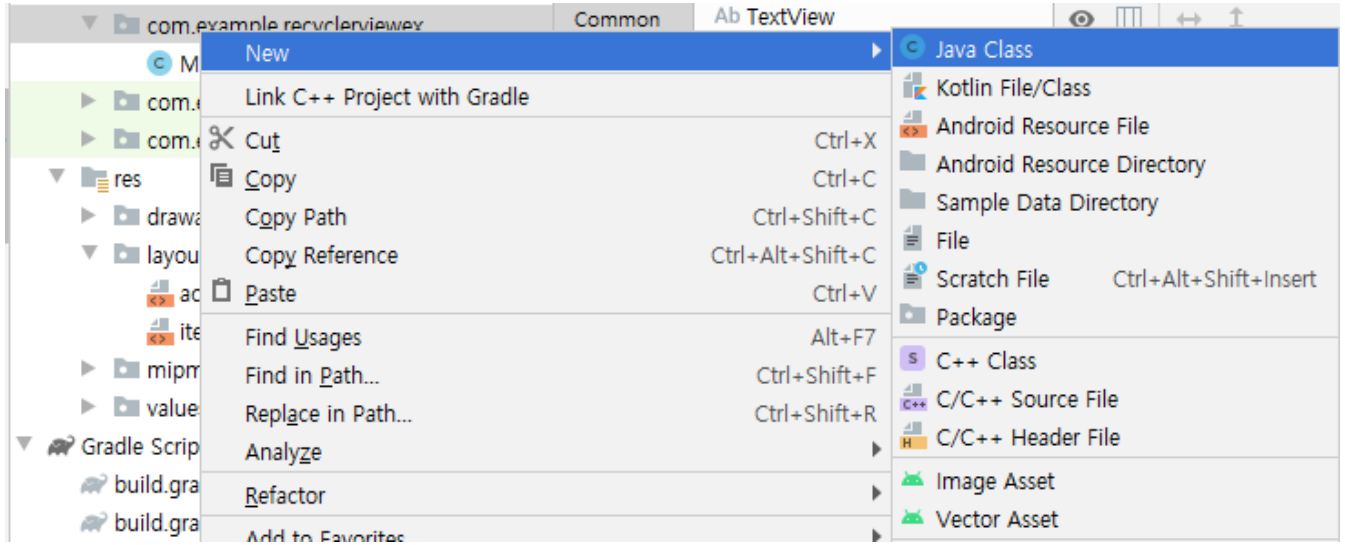


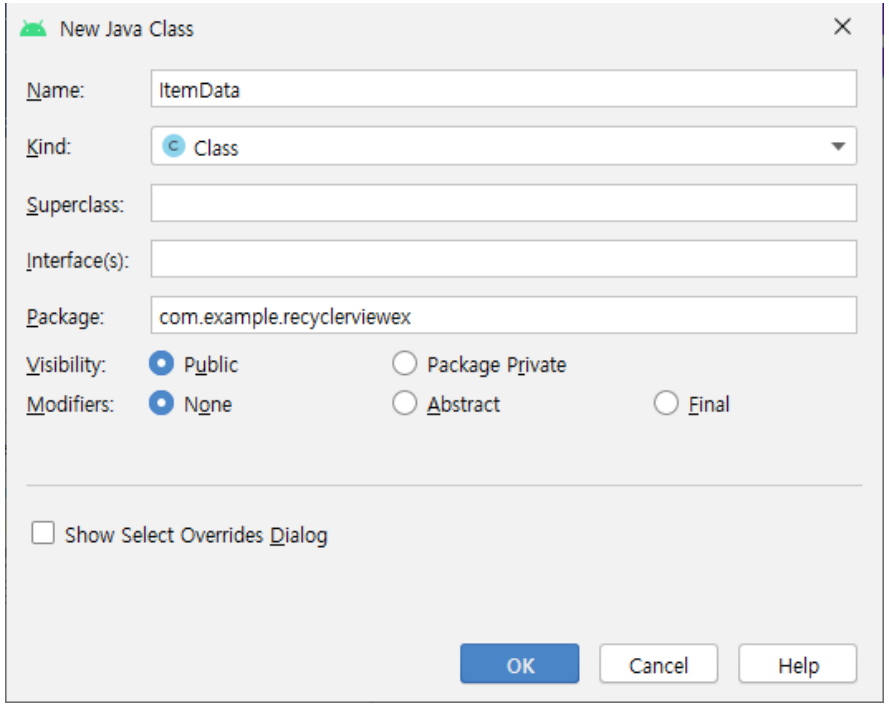
list_item.xml




```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    android:orientation="horizontal" android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:padding="8dp"
    android:gravity="center_vertical"
    android:layout_marginBottom="8dp"
    android:background="@android:color/white">

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

        <TextView
            android:id="@+id/title_text"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:includeFontPadding="false"
            android:text="TITLE"
            android:textSize="18sp"
            android:textColor="@android:color/black"
            android:textStyle="bold"/>

        <TextView
            android:id="@+id/contents_text"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:includeFontPadding="false"
            android:text="contents"
            android:textSize="13sp"
            android:textColor="@android:color/darker_gray"/>
    </LinearLayout>

    <ImageView
        android:id="@+id/imageView"
        android:layout_width="70dp"
        android:layout_height="70dp"
        android:scaleType="centerCrop"
        app:srcCompat="@mipmap/ic_launcher"/>
</LinearLayout>
```

ItemData.java





ItemData.java


```xml
    <TextView
        android:id="@+id/title_text"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:includeFontPadding="false"
        android:text="TITLE"
        android:textSize="18sp"
        android:textColor="@android:color/black"
        android:textStyle="bold"/>

    <TextView
        android:id="@+id/contents_text"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:includeFontPadding="false"
        android:text="content"
        android:textSize="13sp"
        android:textColor="@android:color/darker_gray"/>
</LinearLayout>

<ImageView
    android:id="@+id/imageView"
    android:layout_width="70dp"
    android:layout_height="70dp"
    android:scaleType="centerCrop"
    app:srcCompat="@mipmap/ic_launcher"/>
```

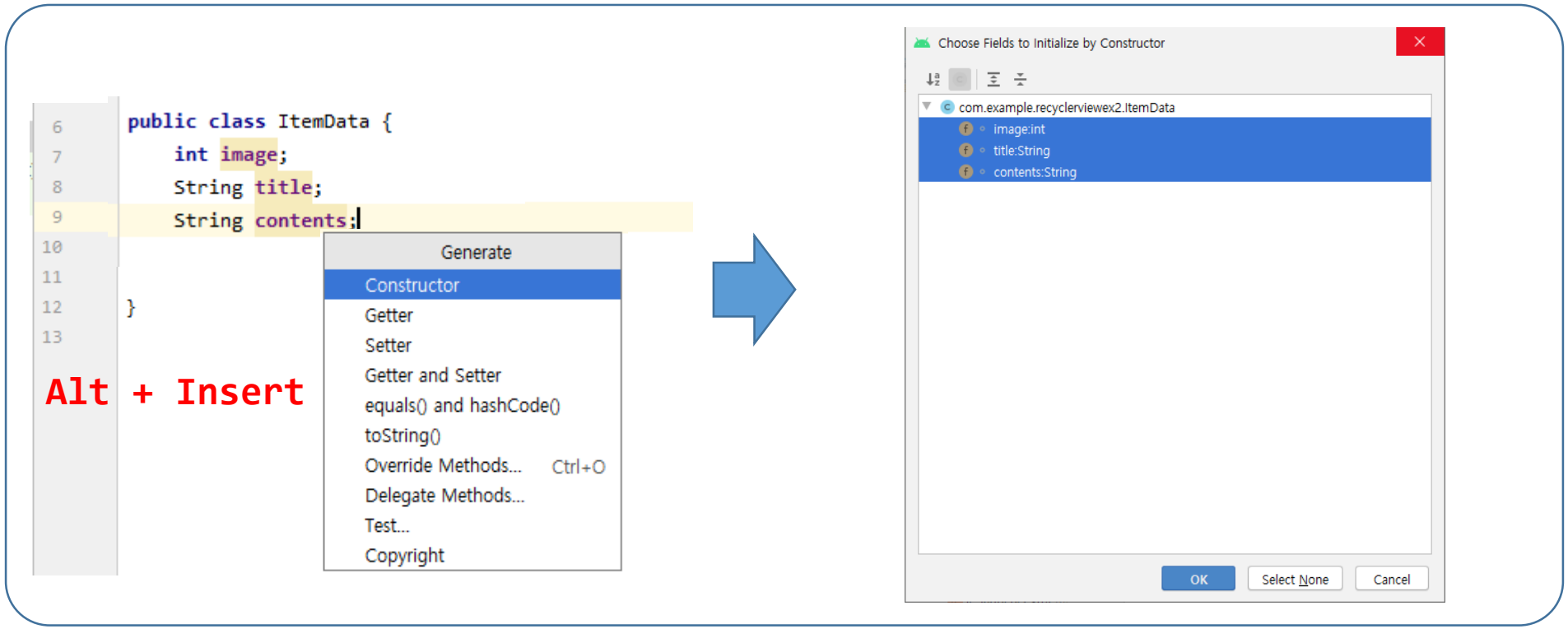
list_item.xml

ItemData.java

```java
public class ItemData {
    int image;
    String title;
    String contents;
}
```

ItemData.java


```
public class ItemData {
    int image;
    String title;
    String contents;

    public ItemData(int image, String title, String contents) {
        this.image = image;
        this.title = title;
        this.contents = contents;
    }
}
```

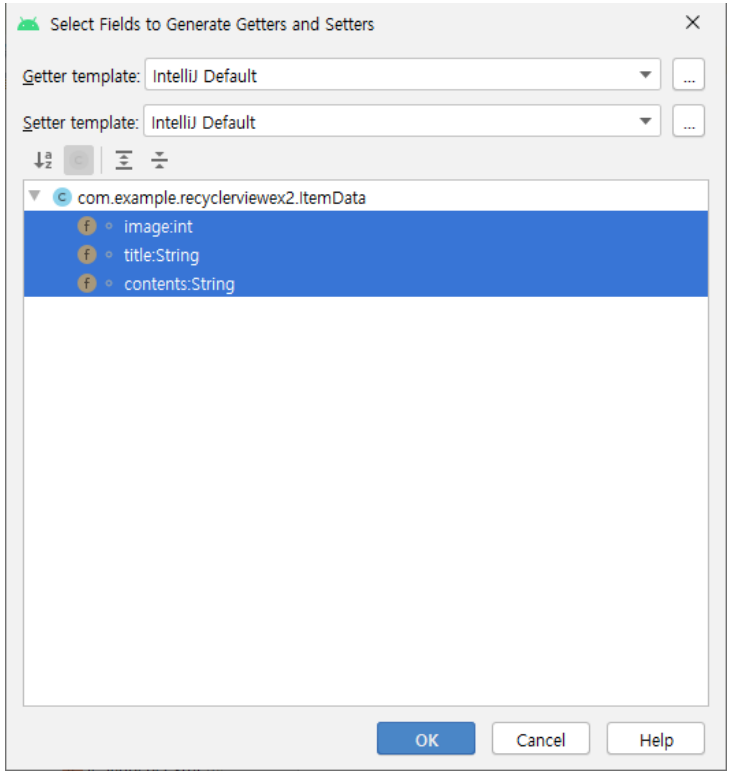


ItemData.java


```
3   public class ItemData {
4       int image;
5       String title;
6       String contents;
7
8   @   public ItemData(int image, String title, String contents) {
9           this.image = image;
10          this.title = title;
11          this.contents = contents;
12      }
13
14
15  }
16
```

Generate
- Constructor
- Getter
- Setter
- Getter and Setter
- equals() and hashCode()
- toString()
- Override Methods... Ctrl+O
- Delegate Methods...
- Test...
- Copyright

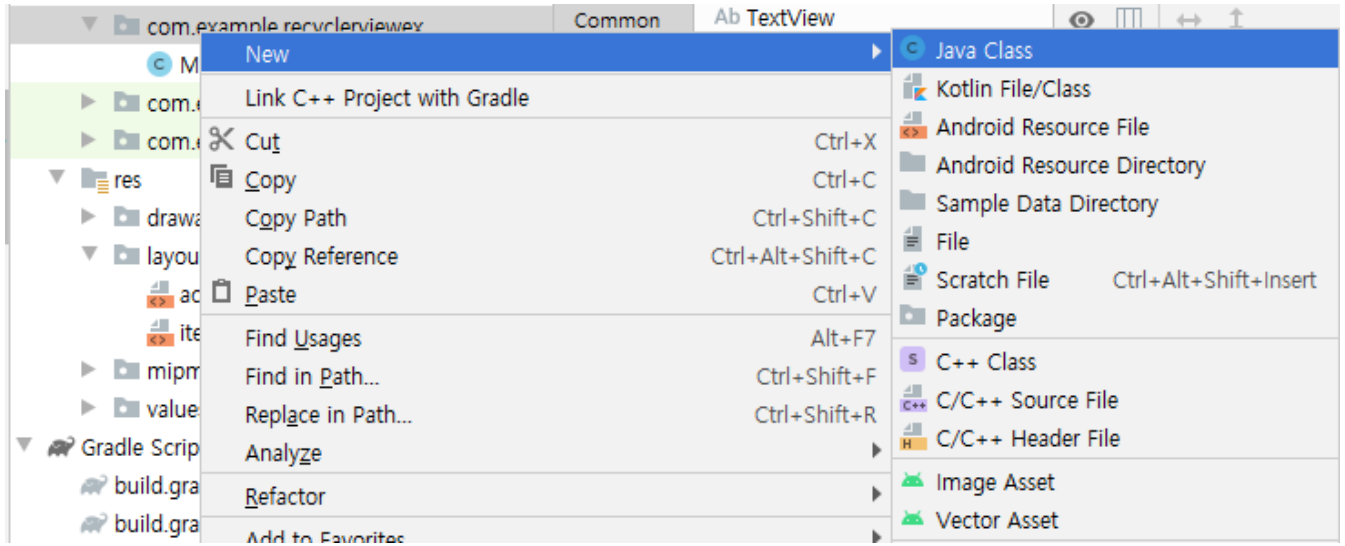
Alt + Insert

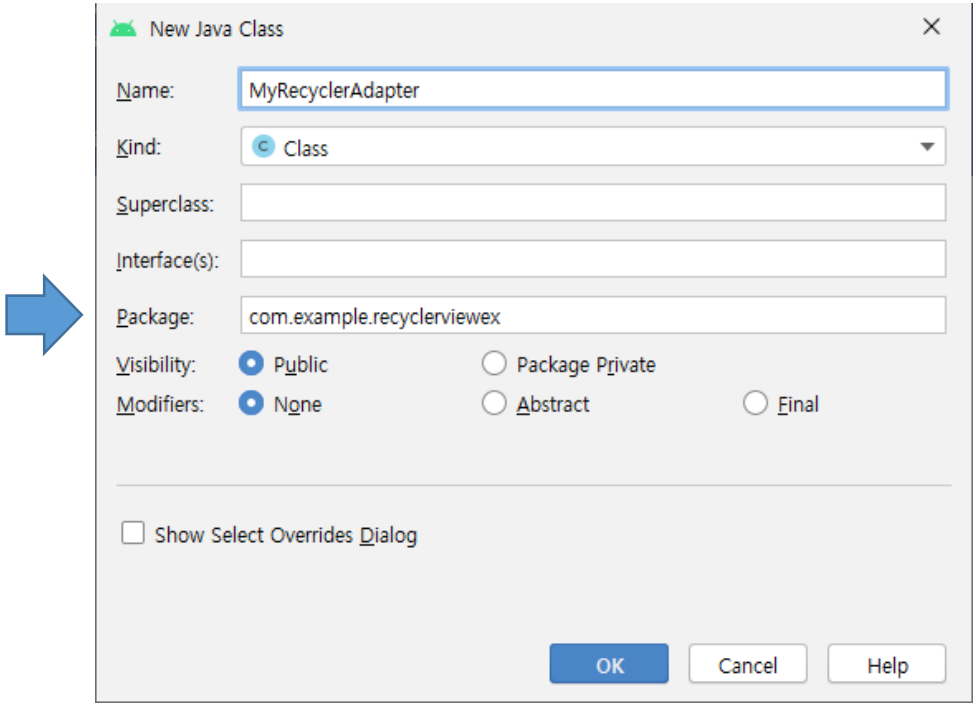


ItemData.java


```java
public class ItemData {
    int image;
    String title;
    String contents;

    public ItemData(int image, String title, String contents) {
        this.image = image;
        this.title = title;
        this.contents = contents;
    }

    public int getImage() {
        return image;
    }

    public void setImage(int image) {
        this.image = image;
    }

    public String getTitle() {
        return title;
    }

    public void setTitle(String title) {
        this.title = title;
    }

    public String getContents() {
        return contents;
    }

    public void setContents(String contents) {
        this.contents = contents;
    }
}
```

MyRecyclerAdapter.java





ViewHolder 생성


```
public class MyRecyclerAdapter {

    public static class ViewHolder extends RecyclerView.ViewHolder {

    }
}
```

```
public class MyRecyclerAdapter {

    public static class ViewHolder extends RecyclerView.ViewHolder {

    }
}
```

Create constructor matching super
Create Test
Create subclass
Make 'private'
Make 'protected'
Make package-private

```
public class MyRecyclerAdapter {

    public static class ViewHolder extends RecyclerView.ViewHolder {

        public ViewHolder(View itemView) {
            super(itemView);
        }
    }
}
```

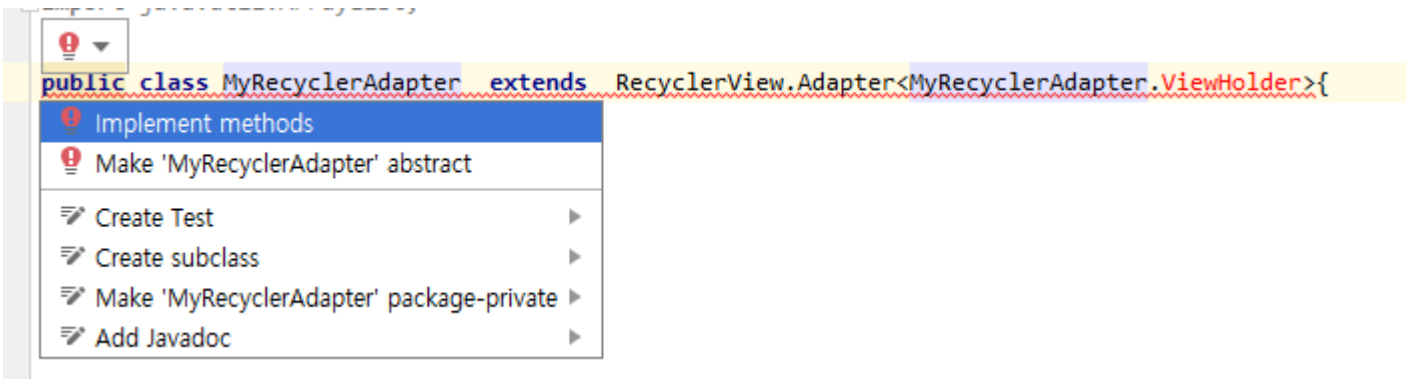
MyRecyclerAdapter.java

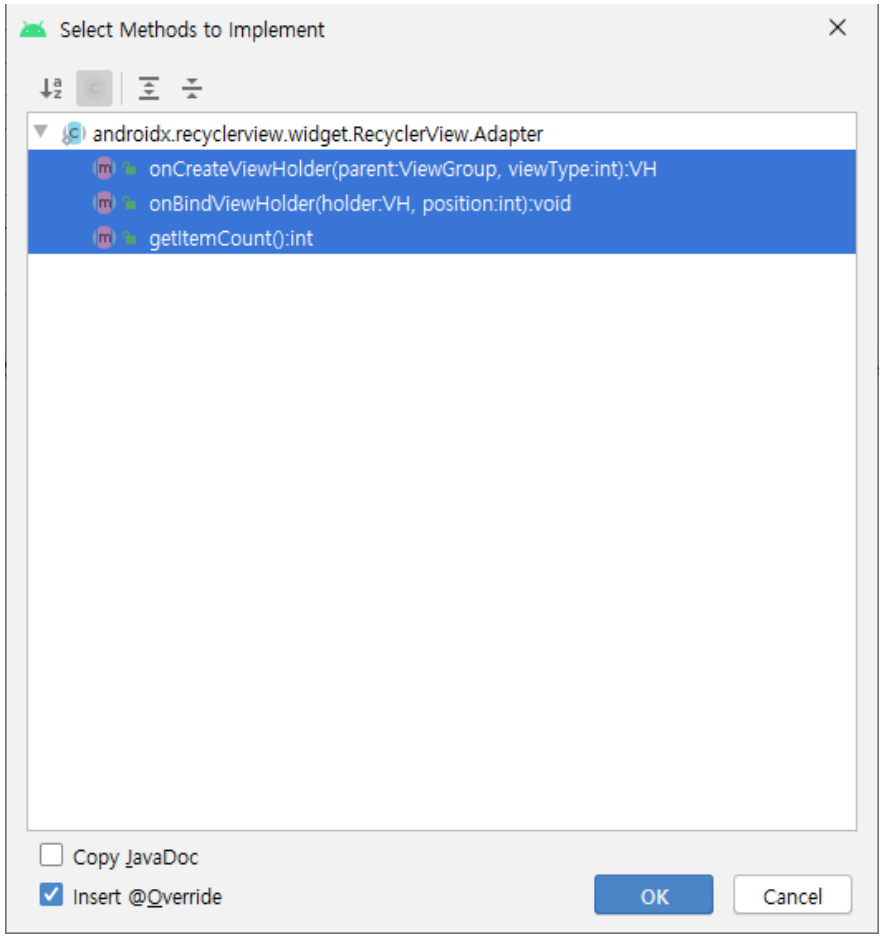

```
public class MyRecyclerAdapter  extends  RecyclerView.Adapter<MyRecyclerAdapter.ViewHolder>{

    public class ViewHolder extends RecyclerView.ViewHolder {
        TextView title;
        TextView contents;
        ImageView imageView;
        public ViewHolder(@NonNull View itemView) {
            super(itemView);
            title = itemView.findViewById(R.id.title_text);
            contents = itemView.findViewById(R.id.contents_text);
            imageView = itemView.findViewById(R.id.imageView);
        }
    }
}
```

MyRecyclerAdapter.java


```
public class MyRecyclerAdapter {
}
```

```
public class MyRecyclerAdapter extends RecyclerView.Adapter<MyRecyclerAdapter.ViewHolder> {
}
```





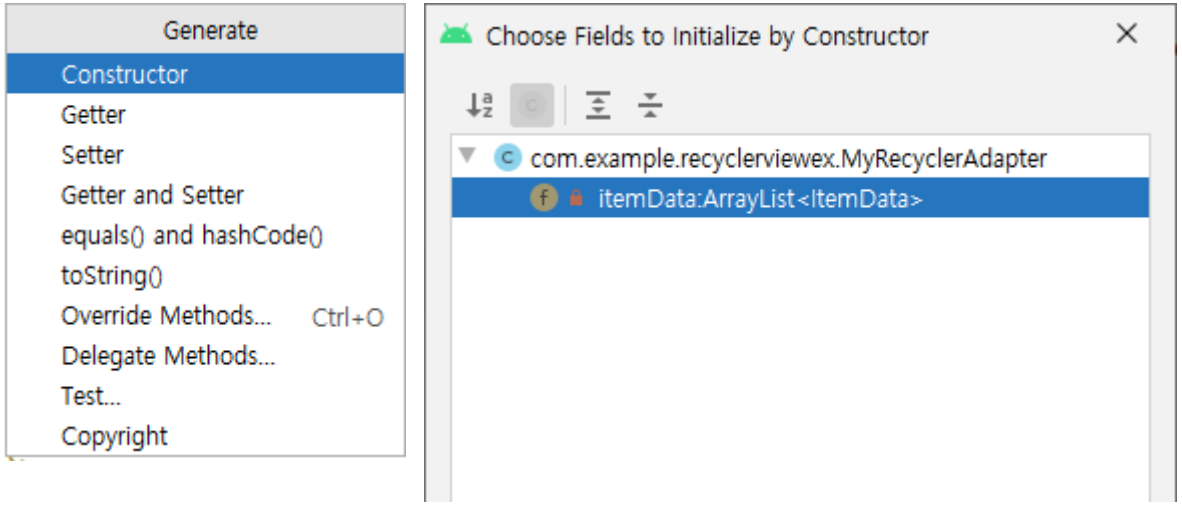
MyRecyclerAdapter.java


```
public class MyRecyclerAdapter  extends  RecyclerView.Adapter<MyRecyclerAdapter.ViewHolder>{
    @NonNull
    @Override
    public MyRecyclerAdapter.ViewHolder onCreateViewHolder(@NonNull ViewGroup parent, int viewType) {
        return null;
    }

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

    }

    @Override
    public int getItemCount() {
        return 0;
    }

    public class ViewHolder extends RecyclerView.ViewHolder {
        public ViewHolder(@NonNull View itemView) {
            super(itemView);
        }
    }
}
```

MyRecyclerAdapter.java

생성자를 통해 외부 데이터를 가져옴

```
public class MyRecyclerAdapter  extends  RecyclerView.Adapter<MyRecyclerAdapter.ViewHolder>{

    private ArrayList<ItemData> itemData;

    public MyRecyclerAdapter(ArrayList<ItemData> itemData) {
        this.itemData = itemData;
    }
}
```

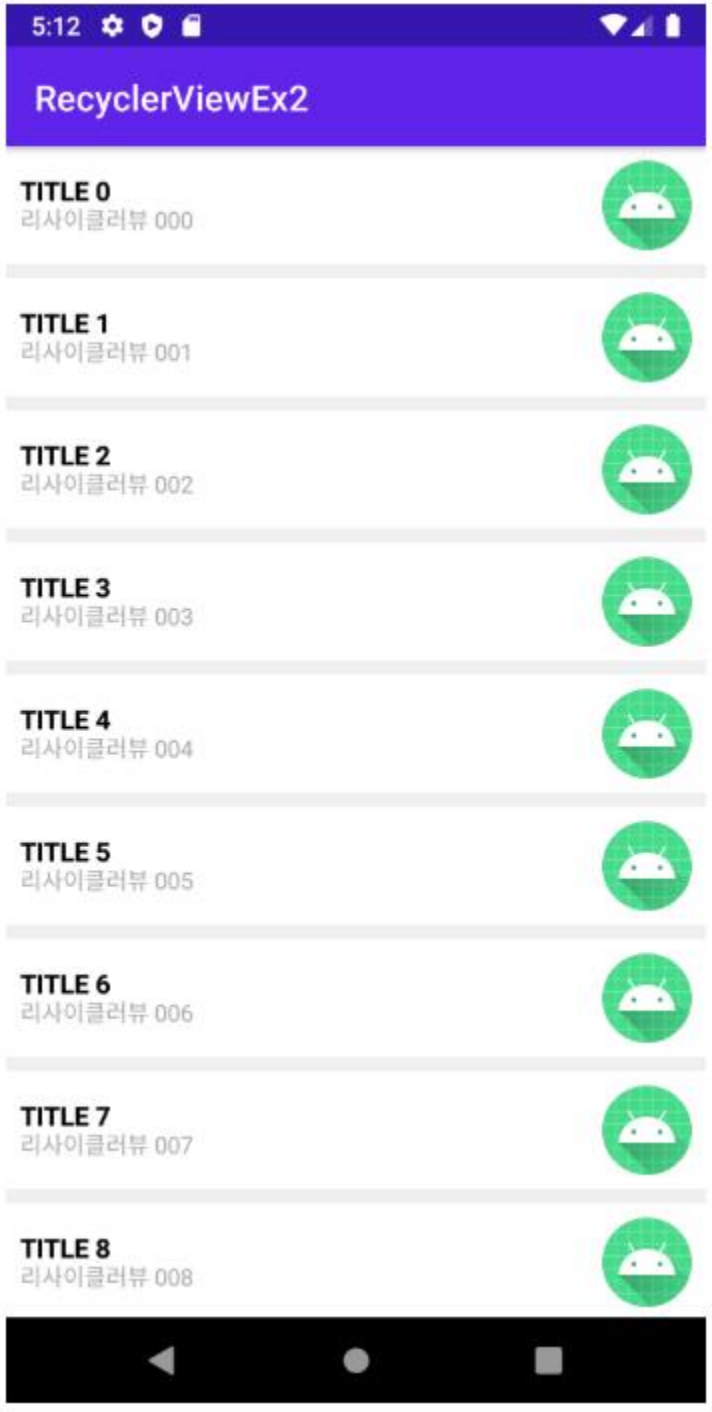


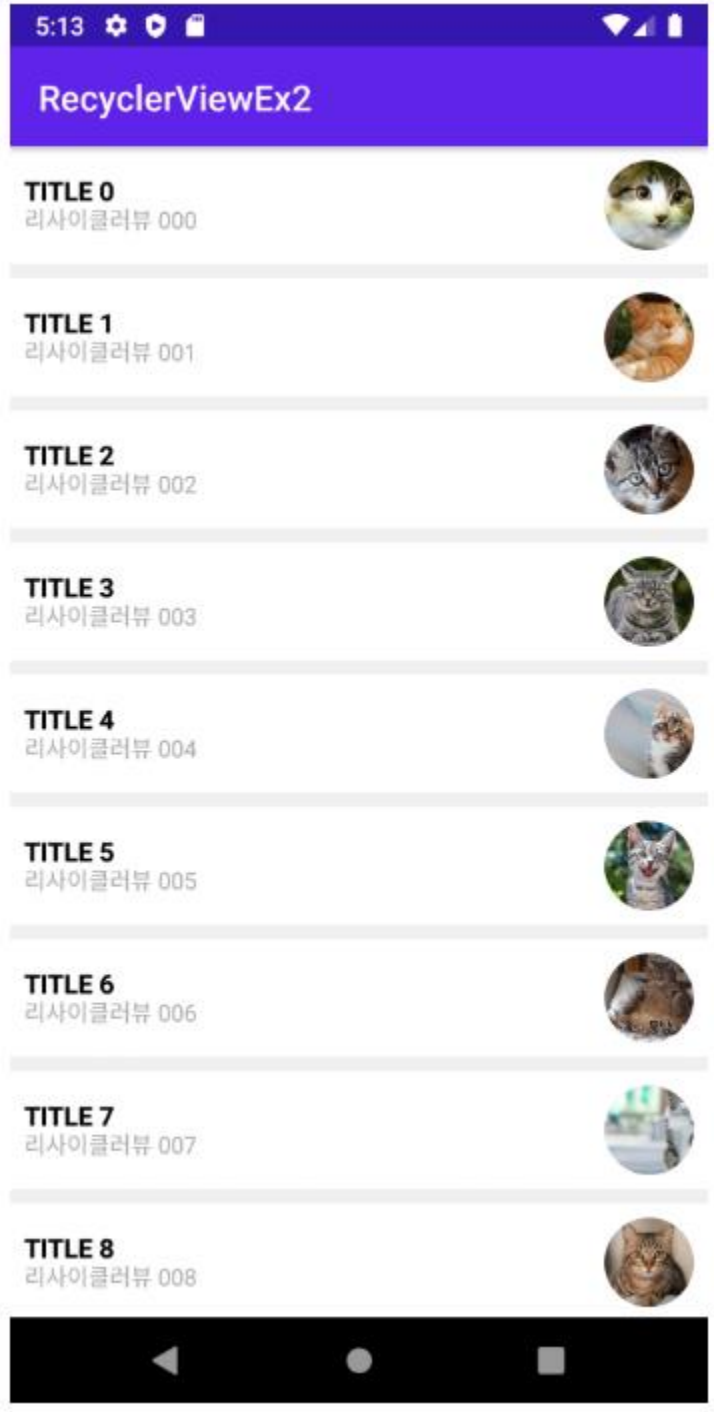
MyRecyclerAdapter.java

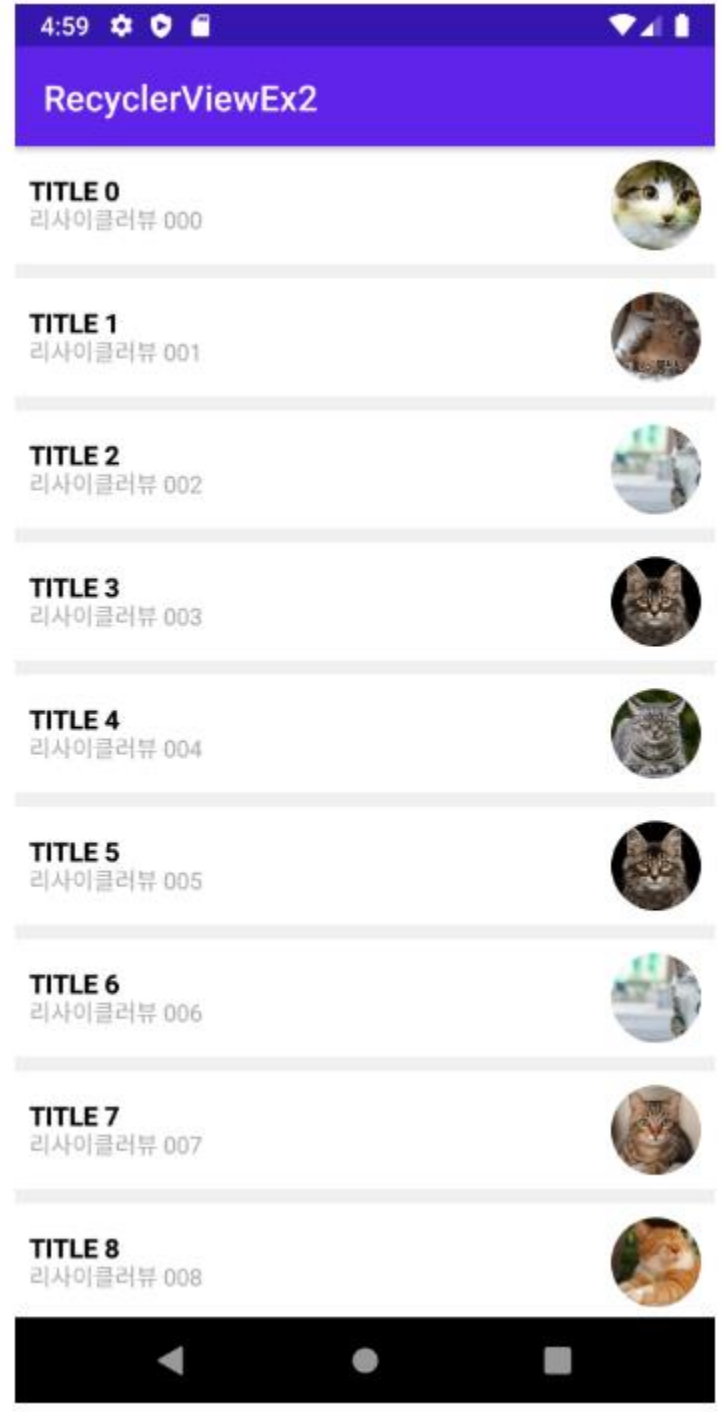

```
public class MyRecyclerAdapter  extends  RecyclerView.Adapter<MyRecyclerAdapter.ViewHolder>{

    @NonNull
    @Override
    public MyRecyclerAdapter.ViewHolder onCreateViewHolder(@NonNull ViewGroup parent, int viewType) {
        View view = LayoutInflater.from(parent.getContext())
                .inflate(R.layout.list_item, parent, false);
        return new ViewHolder(view);
    }
}
```

MyRecyclerAdapter.java


```
public class MyRecyclerAdapter  extends  RecyclerView.Adapter<MyRecyclerAdapter.ViewHolder>{

    @Override
    // 외부에서 가져온 데이터 셋팅
    public void onBindViewHolder(@NonNull MyRecyclerAdapter.ViewHolder holder, int position) {
        ItemData item = itemData.get(position);
        holder.title.setText(item.getTitle());
        holder.contents.setText(item.getContents());
        holder.imageView.setImageResource(item.getImage());
    }

    @Override
    // 외부에서 가져온 데이터 개수
    public int getItemCount() {
        return itemData.size();
    }

}
```


5:12
RecyclerViewEx2
TITLE 0
리사이클러뷰 000
TITLE 1
리사이클러뷰 001
TITLE 2
리사이클러뷰 002
TITLE 3
리사이클러뷰 003
TITLE 4
리사이클러뷰 004
TITLE 5
리사이클러뷰 005
TITLE 6
리사이클러뷰 006
TITLE 7
리사이클러뷰 007
TITLE 8
리사이클러뷰 008


5:13
RecyclerViewEx2
TITLE 0
리사이클러뷰 000
TITLE 1
리사이클러뷰 001
TITLE 2
리사이클러뷰 002
TITLE 3
리사이클러뷰 003
TITLE 4
리사이클러뷰 004
TITLE 5
리사이클러뷰 005
TITLE 6
리사이클러뷰 006
TITLE 7
리사이클러뷰 007
TITLE 8
리사이클러뷰 008


4:59
RecyclerViewEx2
TITLE 0
리사이클러뷰 000
TITLE 1
리사이클러뷰 001
TITLE 2
리사이클러뷰 002
TITLE 3
리사이클러뷰 003
TITLE 4
리사이클러뷰 004
TITLE 5
리사이클러뷰 005
TITLE 6
리사이클러뷰 006
TITLE 7
리사이클러뷰 007
TITLE 8
리사이클러뷰 008

고양이 그림 가운데 중심으로 자르기(CenterCrop / list_item.xml)

```xml
    <ImageView
        android:id="@+id/imageView"
        android:layout_width="50dp"
        android:layout_height="50dp"
        android:scaleType="centerCrop"
        app:srcCompat="@mipmap/ic_launcher"/>
```

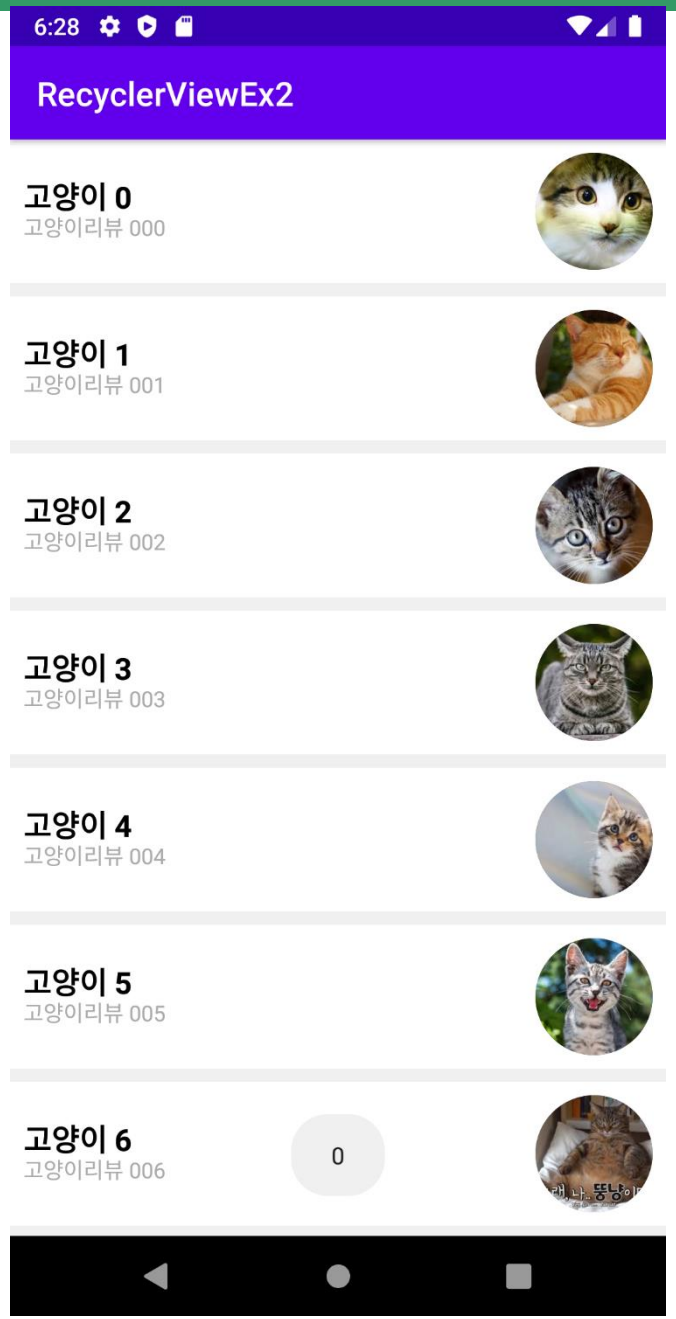
고양이 그림 원형으로 표시(MyRecyclerAdapter.java)

```java
public class MyRecyclerAdapter  extends  RecyclerView.Adapter<MyRecyclerAdapter.ViewHolder>{
        public class ViewHolder extends RecyclerView.ViewHolder {
        TextView title;
        TextView contents;
        ImageView imageView;
        public ViewHolder(@NonNull View itemView) {
            super(itemView);
            title = itemView.findViewById(R.id.title_text);
            contents = itemView.findViewById(R.id.contents_text);
            imageView = itemView.findViewById(R.id.imageView);
            imageView.setBackground(new ShapeDrawable(new OvalShape()));
            imageView.setClipToOutline(true);
        }
    }
}
```

MainActivity.java


```
public class MainActivity extends AppCompatActivity {

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

        RecyclerView recyclerView = findViewById(R.id.recyclerView);
        RecyclerView.LayoutManager layoutManager = new LinearLayoutManager(this);
        recyclerView.setLayoutManager(layoutManager);


        ArrayList<ItemData> dataList = new ArrayList<>();
        for(int i=0; i<10; i++){
            dataList.add(new ItemData(R.mipmap.ic_launcher_round, "고양이 "+i,
                    String.format("고양이리뷰 %03d",i)));
        }

        MyRecyclerAdapter adapter = new MyRecyclerAdapter(dataList);
        recyclerView.setAdapter(adapter);
    }
}
```

이벤트 처리


6:28
RecyclerViewEx2
고양이 0
고양이리뷰 000
고양이 1
고양이리뷰 001
고양이 2
고양이리뷰 002
고양이 3
고양이리뷰 003
고양이 4
고양이리뷰 004
고양이 5
고양이리뷰 005
고양이 6
고양이리뷰 006
0

MyRecyclerAdapter.java

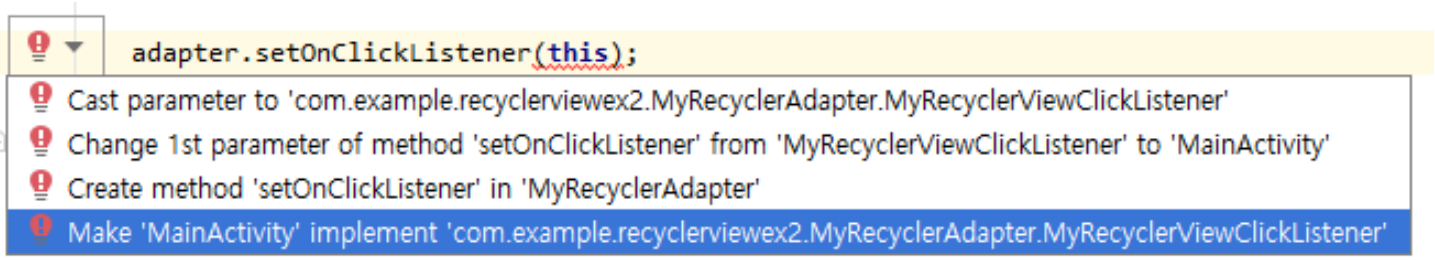

```
public interface MyRecyclerViewClickListener{
    void onItemClicked(int position);
}
private MyRecyclerViewClickListener mListener;
public void setOnClickListener(MyRecyclerViewClickListener listener){
    this.mListener = listener;
}



@Override
public void onBindViewHolder(@NonNull MyRecyclerAdapter.ViewHolder holder, int position) {
    ItemData item = itemData.get(position);
    holder.title.setText(item.getTitle());
    holder.contents.setText(item.getContents());
    holder.imageView.setImageResource(item.getImage());

    if(mListener != null){
        final  int pos = position;
        holder.itemView.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                mListener.onItemClicked(pos); //
            }
        });
    }
}
```

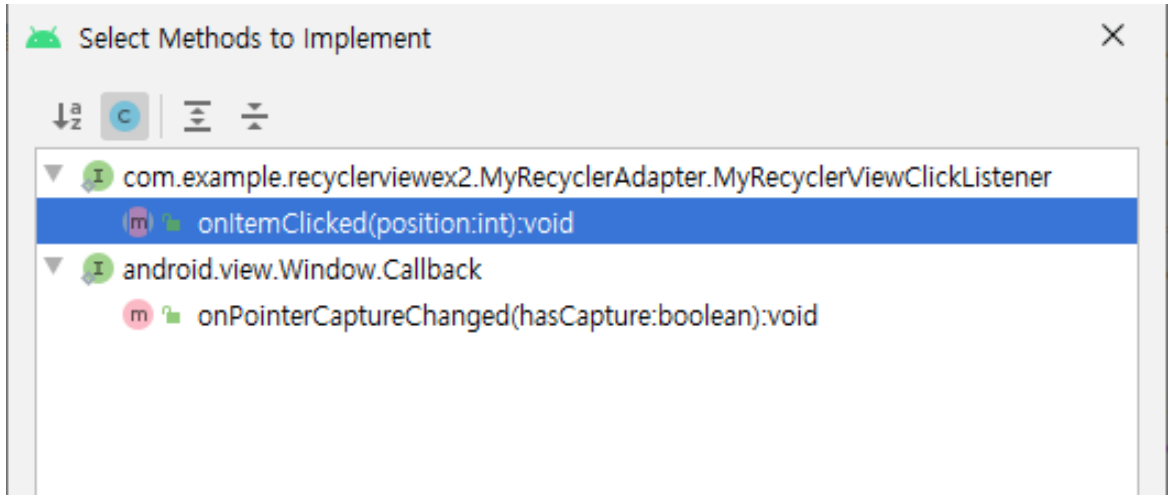
MainActivity.java


```
public class MainActivity extends AppCompatActivity implements MyRecyclerAdapter.MyRecyclerViewClickListener {

    private ArrayList<ItemData> dataList = new ArrayList<>();

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

        RecyclerView recyclerView = findViewById(R.id.recyclerView);
        RecyclerView.LayoutManager layoutManager = new LinearLayoutManager(this);
        recyclerView.setLayoutManager(layoutManager);

        final MyRecyclerAdapter adapter = new MyRecyclerAdapter(dataList);
        recyclerView.setAdapter(adapter);


        adapter.setOnClickListener(this);
    }
```

```
RecyclerView.LayoutManager layoutManager = new GridLayoutManager( context: this,  spanCount: 2);
recyclerView.setLayoutManager(layoutManager);
```

MainActivity.java





MainActivity.java


```
public class MainActivity extends AppCompatActivity implements MyRecyclerAdapter.MyRecyclerViewClickListener {

    private int[] cat;
    private String[] catName;
    private ArrayList<ItemData> dataList = new ArrayList<>();

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        RecyclerView recyclerView = findViewById(R.id.recyclerView);
        RecyclerView.LayoutManager layoutManager = new LinearLayoutManager(this);
        recyclerView.setLayoutManager(layoutManager);

        cats = new int[]{
                R.drawable.pic_001,R.drawable.pic_002,R.drawable.pic_003,R.drawable.pic_004,R.drawable.pic_005,
                R.drawable.pic_006,R.drawable.pic_007,R.drawable.pic_008,R.drawable.pic_009,R.drawable.pic_010};
        final MyRecyclerAdapter adapter = new MyRecyclerAdapter(dataList);
        recyclerView.setAdapter(adapter);

        adapter.setOnClickListener(this);
    }

    @Override
    public void onItemClicked(int position) {
        Toast.makeText(getApplicationContext(),""+position,Toast.LENGTH_SHORT).show();
    }
}
```

6:29

RecyclerViewEx2

고양이 0
고양이리뷰 000

고양이 1
고양이리뷰 001

고양이 2
고양이리뷰 002

고양이 3
고양이리뷰 003

고양이 4
고양이리뷰 004

고양이 5
고양이리뷰 005

고양이 6
고양이리뷰 006

R.drawable.pic_001

6:25

RecyclerViewEx2

TITLE 0
리사이클러뷰 000

TITLE 1
리사이클러뷰 001

TITLE 2
리사이클러뷰 002

TITLE 3
리사이클러뷰 003

TITLE 4
리사이클러뷰 004

TITLE 5
리사이클러뷰 005

TITLE 6
리사이클러뷰 006

R.drawable.pic_002

6:25

RecyclerViewEx2

TITLE 0
리사이클러뷰 000

TITLE 1
리사이클러뷰 001

TITLE 2
리사이클러뷰 002

TITLE 3
리사이클러뷰 003

TITLE 4
리사이클러뷰 004

TITLE 5
리사이클러뷰 005

TITLE 6
리사이클러뷰 006

R.drawable.pic_005

7:34

RecyclerViewEx

고양이 0
고양이리뷰 000

고양이 1
고양이리뷰 001

고양이 2
고양이리뷰 002

고양이 3
고양이리뷰 003

고양이 4
고양이리뷰 004

BUTTON

7:34

RecyclerViewEx

고양이 0
고양이리뷰 000

고양이 1
고양이리뷰 001

고양이 2
고양이리뷰 002

고양이 3
고양이리뷰 003

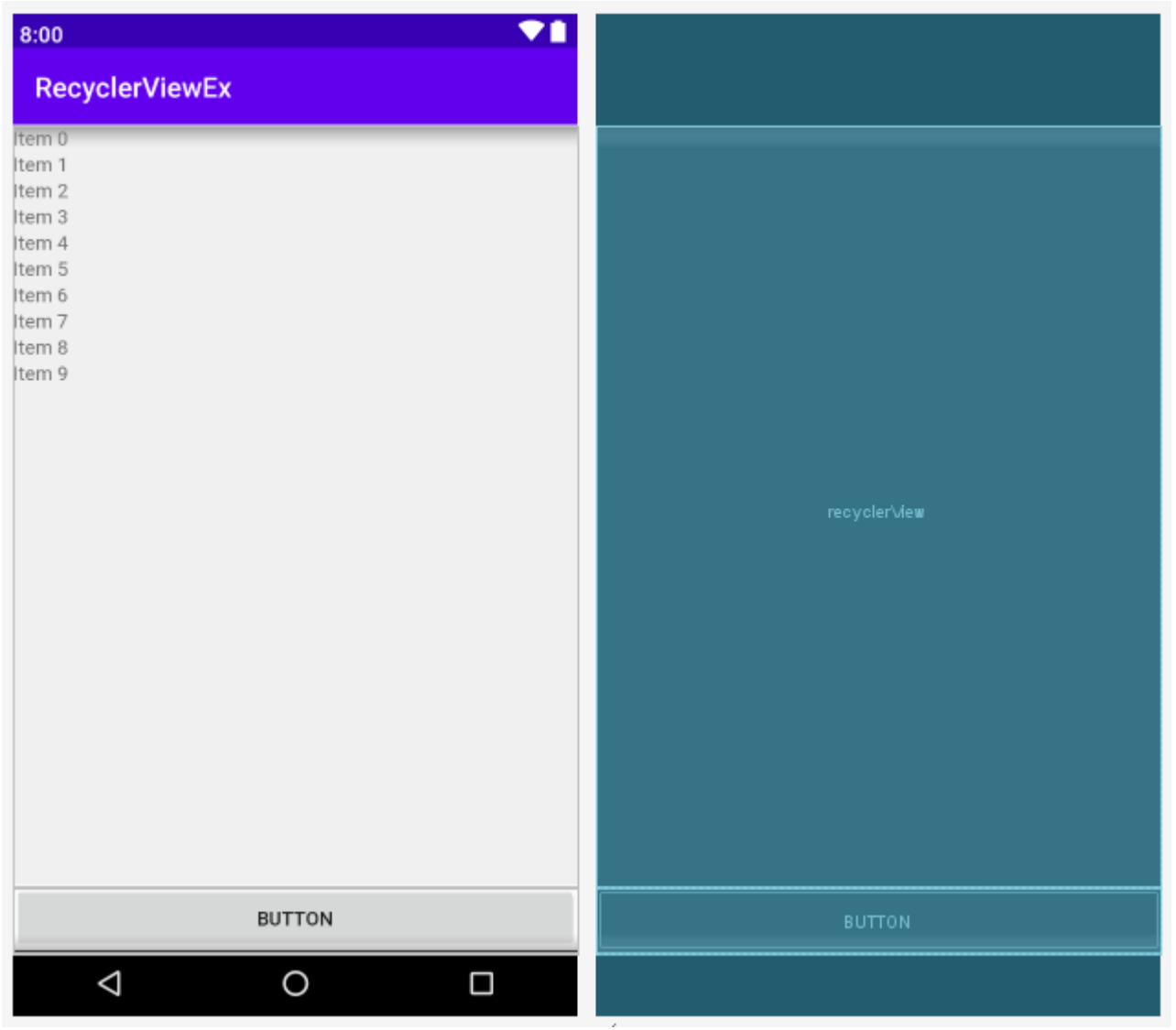
고양이 4
고양이리뷰 004

고양이 5
고양이리뷰 005

BUTTON

activity_main.xml


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

    <androidx.recyclerview.widget.RecyclerView
        android:id="@+id/recyclerView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:background="#F0F0F0"
        >

    </androidx.recyclerview.widget.RecyclerView>

    <Button
        android:id="@+id/button"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Button" />
</LinearLayout>
```



```java
public class MainActivity extends AppCompatActivity implements MyRecyclerAdapter.MyRecyclerViewClickListener {

    private int[] cat;
    private String[] catName;
    private ArrayList<ItemData> dataList = new ArrayList<>();

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

        RecyclerView recyclerView = findViewById(R.id.recyclerView);
        RecyclerView.LayoutManager layoutManager = new LinearLayoutManager(this);
        recyclerView.setLayoutManager(layoutManager);

        cat = new int[]{R.drawable.pic_001, R.drawable.pic_002,R.drawable.pic_003,R.drawable.pic_004,R.drawable.pic_005,
                R.drawable.pic_006,R.drawable.pic_007,R.drawable.pic_008,R.drawable.pic_009,R.drawable.pic_010};
        catName = new String[]{"R.drawable.pic_001", "R.drawable.pic_002","R.drawable.pic_003",
                "R.drawable.pic_004","R.drawable.pic_005", "R.drawable.pic_006",
                "R.drawable.pic_007","R.drawable.pic_008","R.drawable.pic_009","R.drawable.pic_010"};

        final MyRecyclerAdapter adapter = new MyRecyclerAdapter(dataList);
        recyclerView.setAdapter(adapter);

        Button button = findViewById(R.id.button);
        button.setOnClickListener(new View.OnClickListener() {
            int i=0;
            @Override
            public void onClick(View v) {
                dataList.add(new ItemData(cat[i],"고양이 "+i,String.format("고양이리뷰 %03d",i)));
                adapter.notifyDataSetChanged();
                i++;
            }
        });
        adapter.setOnClickListener(this);
    }

    @Override
    public void onItemClicked(int position) {
        Toast.makeText(getApplicationContext(),""+position,Toast.LENGTH_SHORT).show();
    }

    @Override
    public void onImageViewClicked(int position) {
        Toast.makeText(getApplicationContext(),""+catName[position],Toast.LENGTH_SHORT).show();
    }
}
```

```java
public class MainActivity extends AppCompatActivity implements MyRecyclerAdapter.MyRecyclerViewClickListener {

    private int[] cat;
    private String[] catName;
    private ArrayList<ItemData> dataList = new ArrayList<>();

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

        RecyclerView recyclerView = findViewById(R.id.recyclerView);
        RecyclerView.LayoutManager layoutManager = new LinearLayoutManager(this);
        recyclerView.setLayoutManager(layoutManager);

        cat = new int[]{R.drawable.pic_001, R.drawable.pic_002,R.drawable.pic_003,R.drawable.pic_004,R.drawable.pic_005,
                R.drawable.pic_006,R.drawable.pic_007,R.drawable.pic_008,R.drawable.pic_009,R.drawable.pic_010};
        catName = new String[]{"R.drawable.pic_001", "R.drawable.pic_002","R.drawable.pic_003",
                "R.drawable.pic_004","R.drawable.pic_005", "R.drawable.pic_006",
                "R.drawable.pic_007","R.drawable.pic_008","R.drawable.pic_009","R.drawable.pic_010"};

        final MyRecyclerAdapter adapter = new MyRecyclerAdapter(dataList);
        recyclerView.setAdapter(adapter);

        Button button = findViewById(R.id.button);
        button.setOnClickListener(new View.OnClickListener() {
            int i=0;
            @Override
            public void onClick(View v) {
                dataList.add(new ItemData(cat[i],"고양이 "+i,String.format("고양이리뷰 %03d",i)));
                adapter.notifyDataSetChanged();
                i++;
            }
        });
        adapter.setOnClickListener(this);
    }

    @Override
    public void onItemClicked(int position) {
        Toast.makeText(getApplicationContext(),""+position,Toast.LENGTH_SHORT).show();
    }

    @Override
    public void onImageViewClicked(int position) {
        Toast.makeText(getApplicationContext(),""+catName[position],Toast.LENGTH_SHORT).show();
    }
}
```

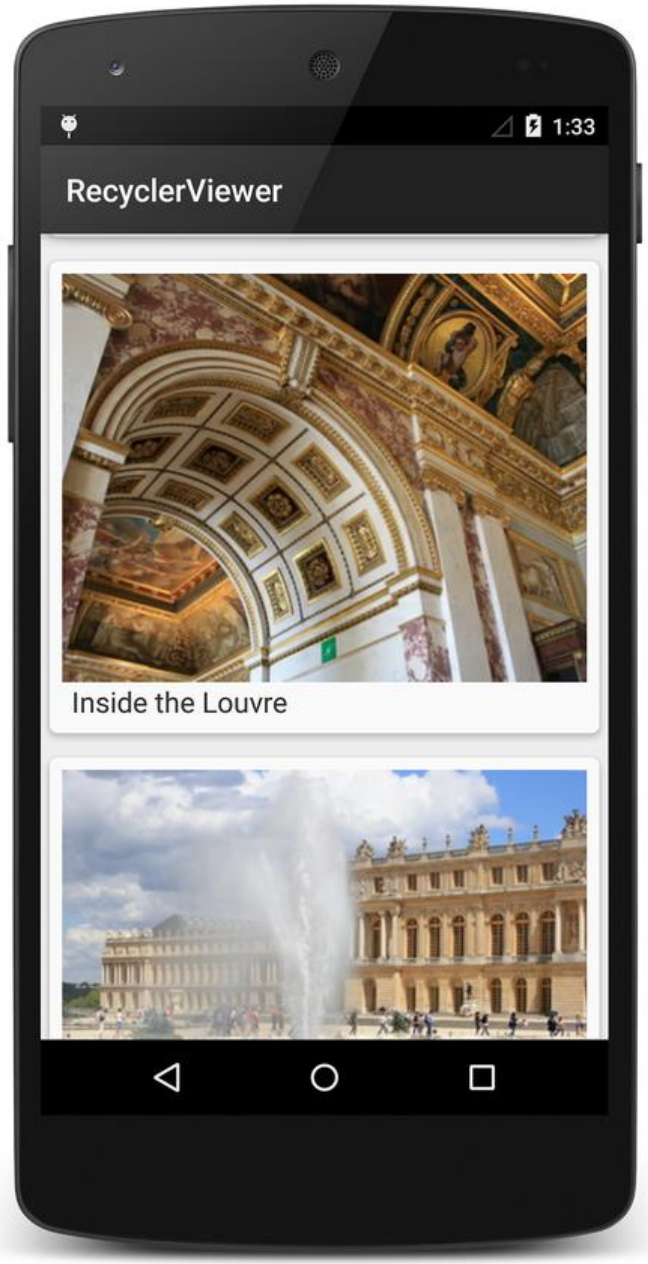
클릭 이벤트 처리

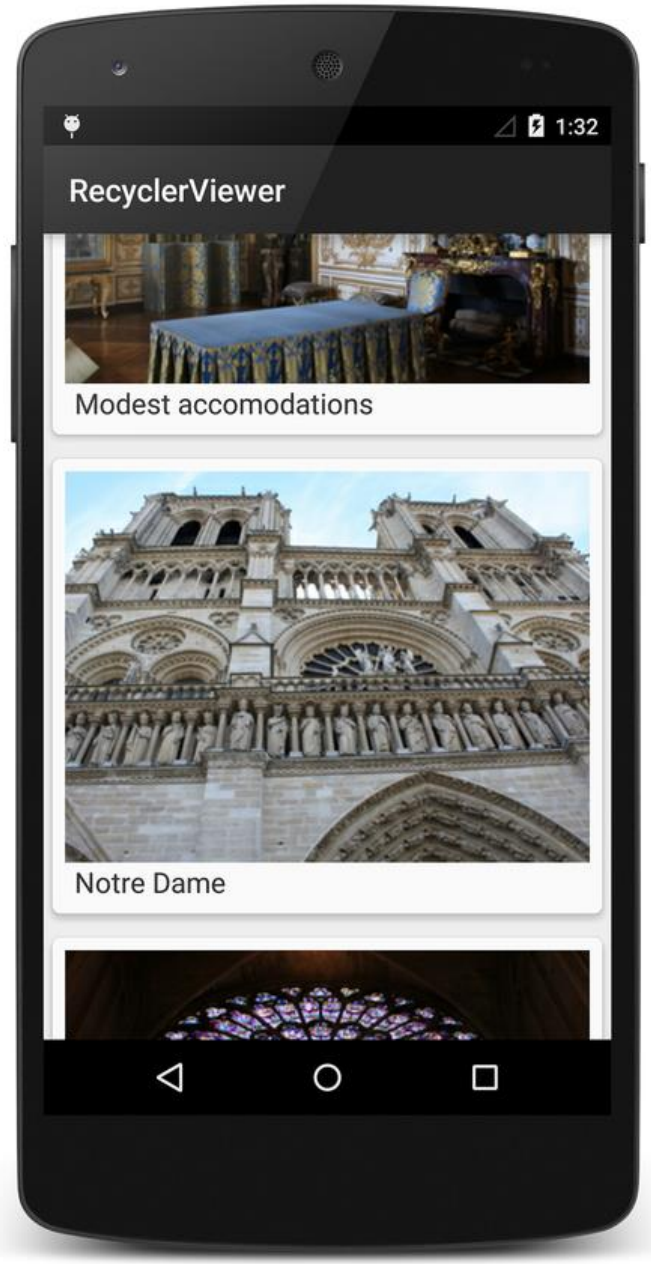
클릭 효과 나타내기

```
<android.support.v7.widget.CardView …생략…>
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:background="?android:attr/selectableItemBackground"
        android:orientation="vertical">
```

클릭 되는 효과를 배경으로 지정

실습해 보기


1:33
RecyclerViewer
Inside the Louvre


1:32
RecyclerViewer
Modest accomodations
Notre Dame

LongClick으로 리스트 삭제

MyRecyclerAdapter.java


```
public class MyRecyclerAdapter  extends  RecyclerView.Adapter<MyRecyclerAdapter.ViewHolder>{

    private ArrayList<ItemData> itemData;

    public interface MyRecyclerViewClickListener{
        void onItemClicked(int position);
        void onImageViewClicked(int position);
        void onItemLongClicked(int position);
    }
    private MyRecyclerViewClickListener mListener;
    public void setOnClickListener(MyRecyclerViewClickListener listener){
        this.mListener = listener;
    }
}
```

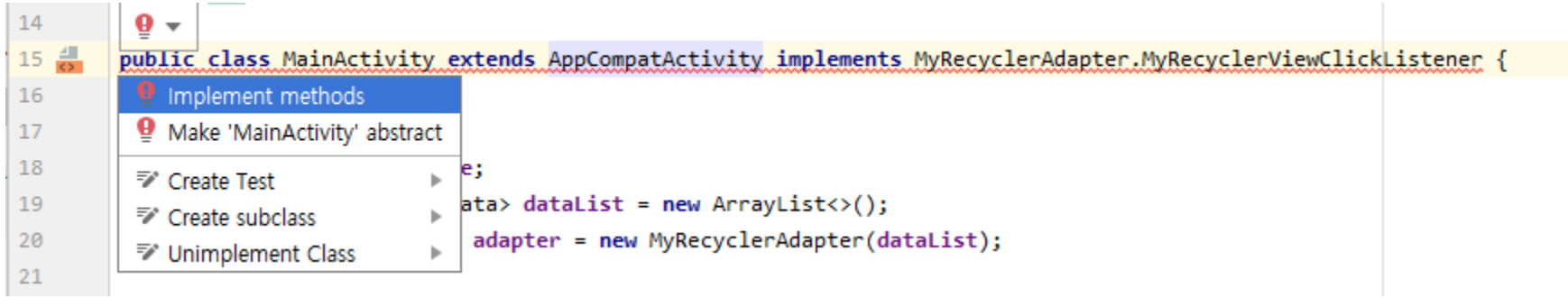
MyRecyclerAdapter.java


```
public class MyRecyclerAdapter  extends  RecyclerView.Adapter<MyRecyclerAdapter.ViewHolder>{
    ...
    @Override
    public int getItemCount() {
        return itemData.size();
    }
    // 맨 아래쪽에 remove method 생성
    public void remove(int position){
        try {
            itemData.remove(position);
            notifyDataSetChanged();
        }catch (IndexOutOfBoundsException e){
            e.printStackTrace();
        }
    }

}
```

MyRecyclerAdapter.java


```
@Override
public void onBindViewHolder(@NonNull MyRecyclerAdapter.ViewHolder holder, int position) {
    ItemData item = itemData.get(position);
    holder.title.setText(item.getTitle());
    holder.contents.setText(item.getContents());
    holder.imageView.setImageResource(item.getImage());

    if(mListener != null){
        final  int pos = position;
        holder.itemView.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                mListener.onItemClicked(pos);
            }
        });
        holder.itemView.setOnLongClickListener(new View.OnLongClickListener() {
             @Override
             public boolean onLongClick(View v) {
                 mListener.onItemLongClicked(holder.getAdapterPosition());
                 // pos 와 holder.getAdapterPosition() 는 동일
                 return true;
             }
        });

    }
}
```

MainActivity.java

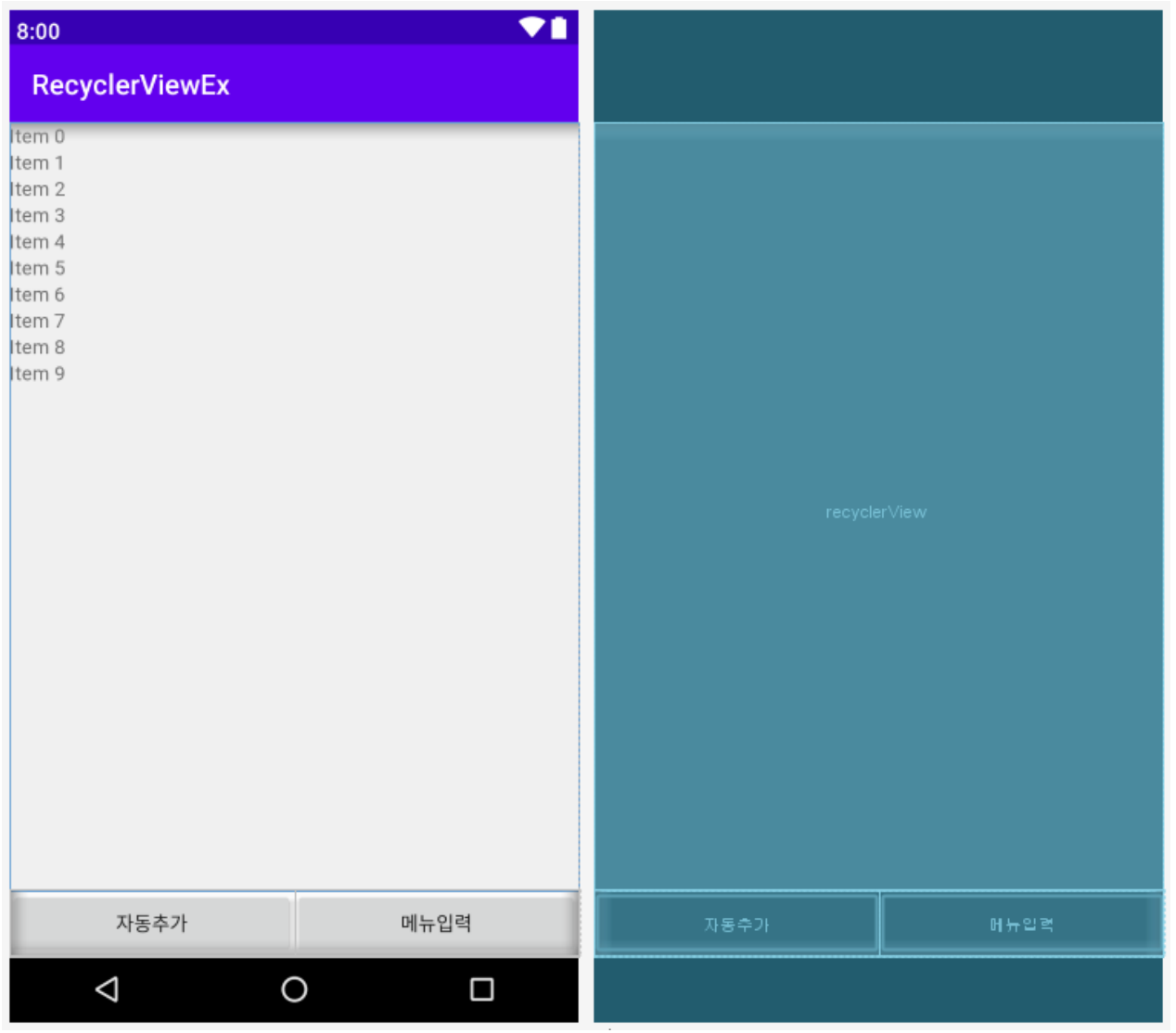



```
public class MainActivity extends AppCompatActivity implements MyRecyclerAdapter.MyRecyclerViewClickListener {

    final MyRecyclerAdapter adapter = new MyRecyclerAdapter(dataList);  // 전역으로 이동

    ...

    @Override
    public void onItemLongClicked(int position) {
        adapter.remove(position);
        Toast.makeText(getApplicationContext(),position+ " is removed",Toast.LENGTH_SHORT).show();
    }
}
```

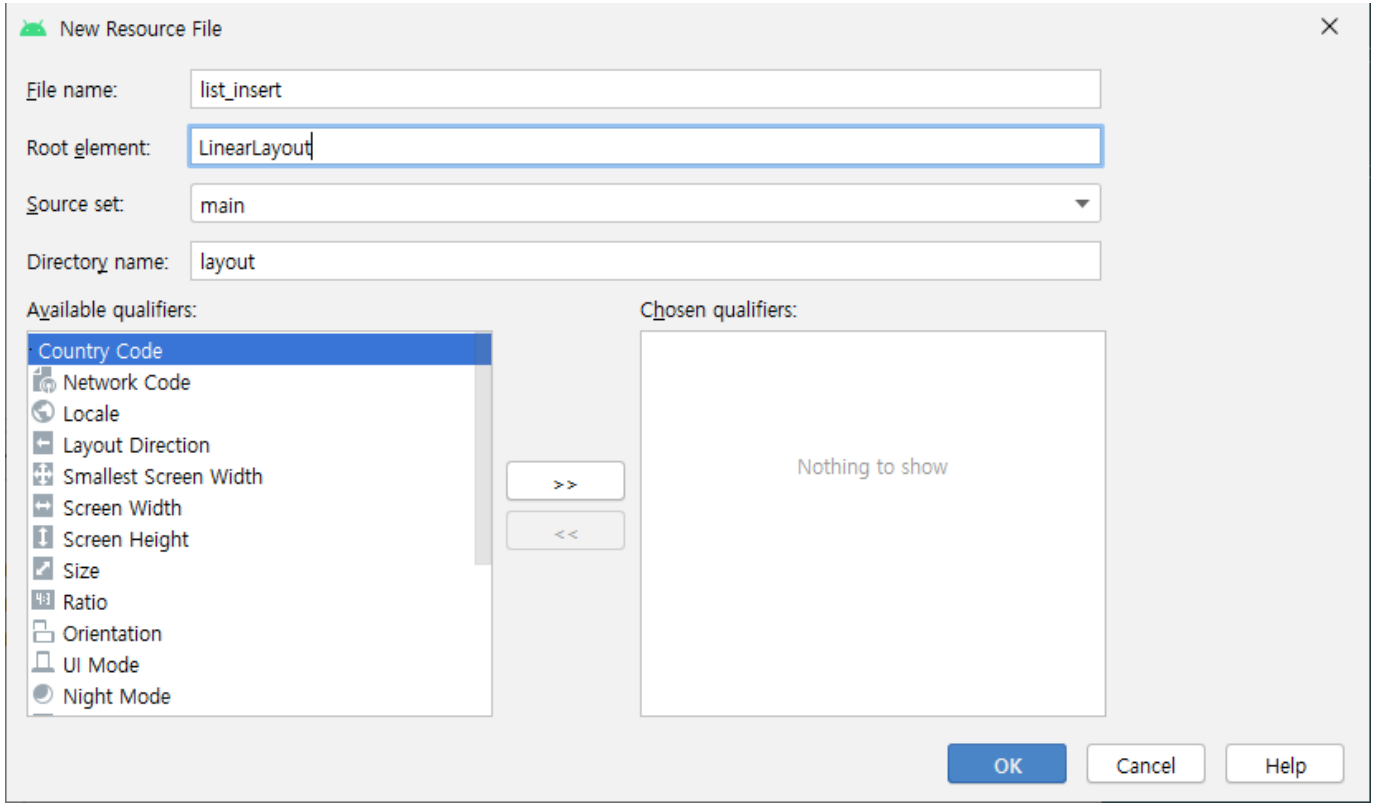
메뉴 입력

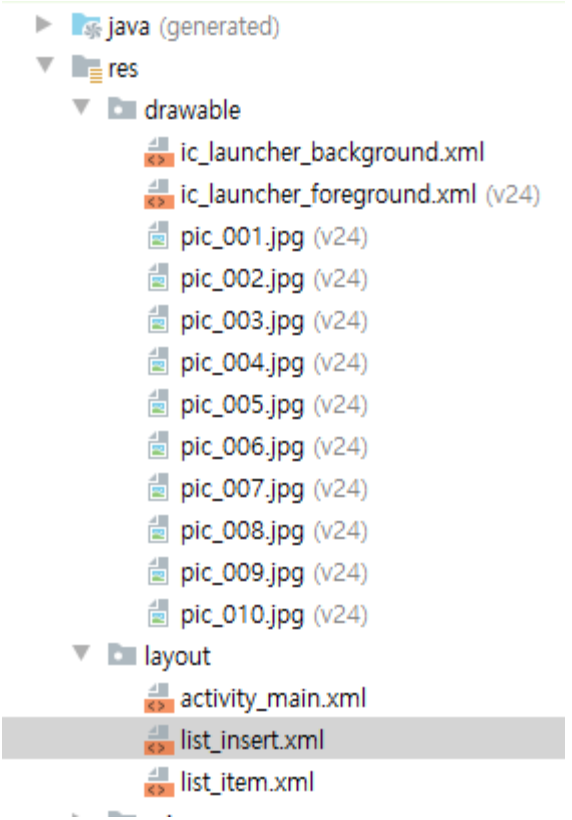
activity_main.xml


```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical"
    android:layout_width="match_parent"
    android:layout_height="match_parent">
    <androidx.recyclerview.widget.RecyclerView
        android:id="@+id/recyclerView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:background="#F0F0F0"
        >
    </androidx.recyclerview.widget.RecyclerView>

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal">

        <Button
            android:id="@+id/button_add"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="자동추가" />

        <Button
            android:id="@+id/button_insert"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:onClick="onMenuInsert"
            android:layout_weight="1"
            android:text="메뉴입력" />
    </LinearLayout>
</LinearLayout>
```

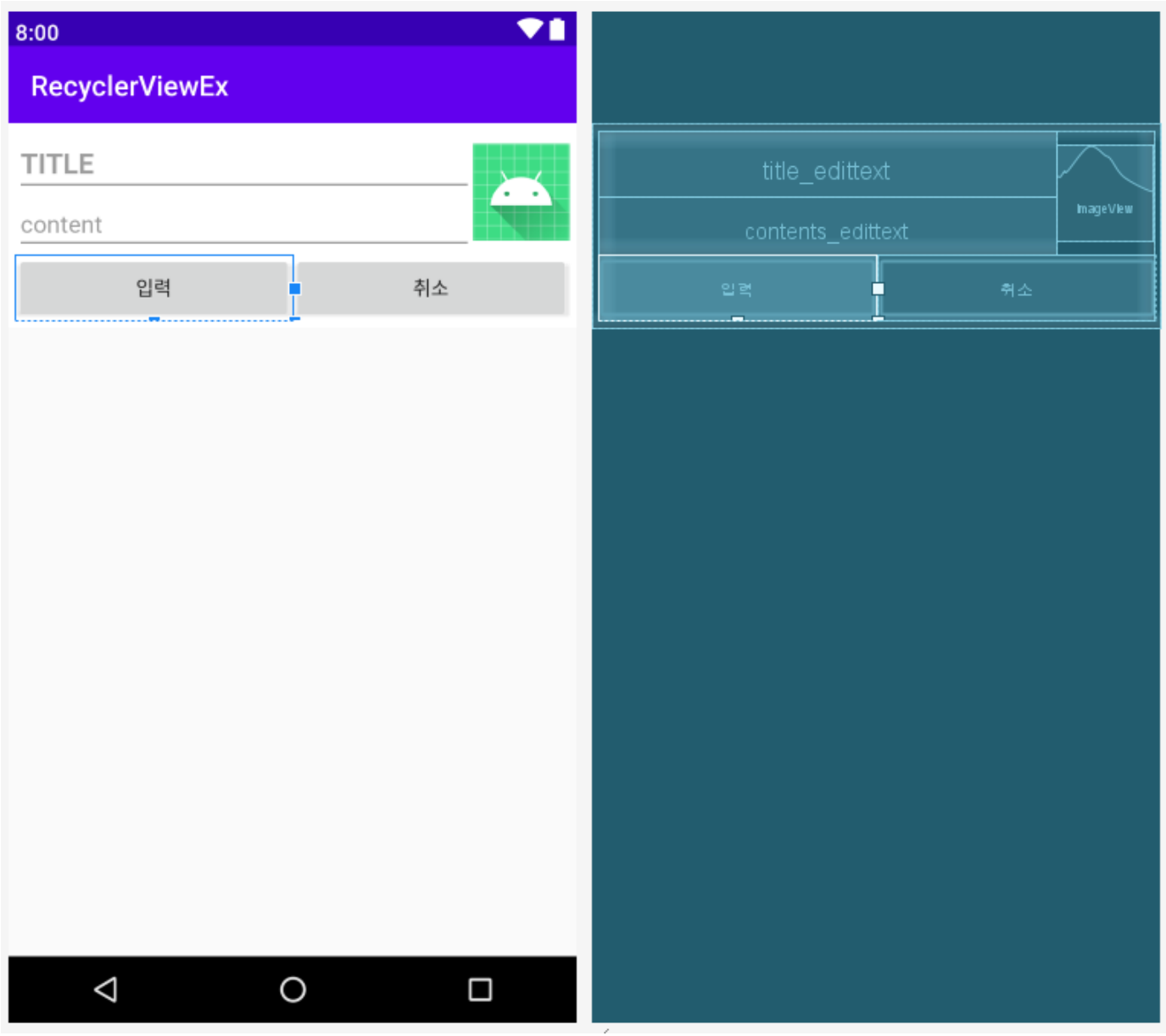


list_insert.xml





list_insert.xml



list_insert.xml


```
<LinearLayout 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"
    android:layout_marginBottom="5dp"
    android:background="@android:color/white"
    android:gravity="center_vertical"
    android:orientation="vertical"
    android:padding="5dp">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="90dp">

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

            <EditText
                android:id="@+id/title_edittext"
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:hint="TITLE"
                android:textColor="@android:color/black"
                android:textSize="20sp"
                android:textStyle="bold" />

            <EditText
                android:id="@+id/contents_edittext"
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:hint="content"
                android:textColor="@android:color/darker_gray"
                android:textSize="17sp" />
        </LinearLayout>

        <ImageView
            android:id="@+id/imageView_insert"
            android:layout_width="70dp"
            android:layout_height="70dp"
            android:layout_gravity="center_vertical"
            android:scaleType="centerCrop"
            app:srcCompat="@mipmap/ic_launcher" />

    </LinearLayout>

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent">

        <Button
            android:id="@+id/button_go"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="입력" />

        <Button
            android:id="@+id/button_cancel"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="취소" />
    </LinearLayout>

</LinearLayout>
```

MainActivity.java


```
public class MainActivity extends AppCompatActivity implements MyRecyclerAdapter.MyRecyclerViewClickListener {

    private int[] cat;
    private String[] catName;
    private ArrayList<ItemData> dataList = new ArrayList<>();
    final MyRecyclerAdapter adapter = new MyRecyclerAdapter(dataList);
    static int i=0;
    ...
}
```

MainActivity.java

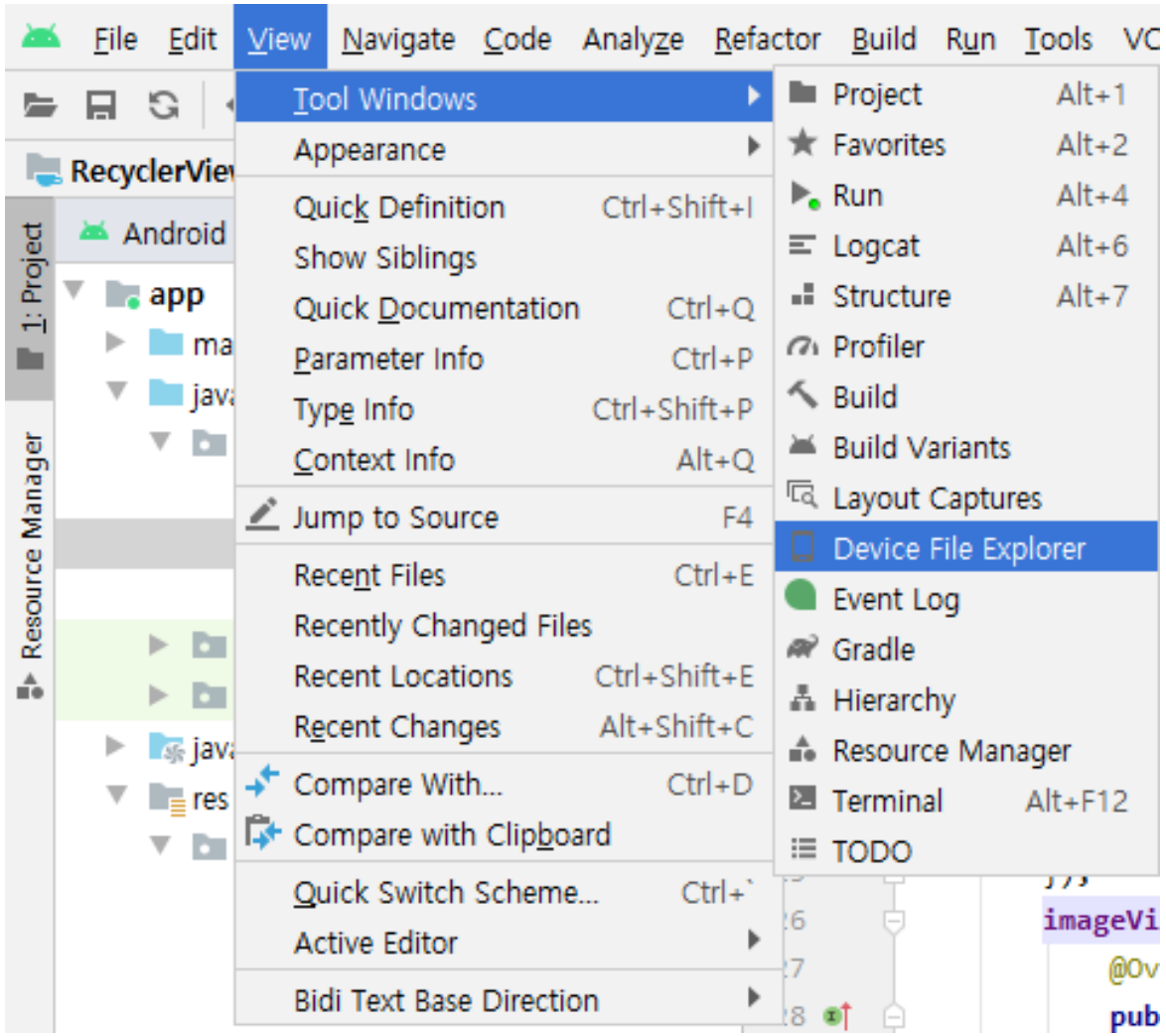

```
 public void onMenuInsert(View view) {
        final View innerView = getLayoutInflater().inflate(R.layout.list_insert, null);

        final Dialog mDialog = new Dialog(this);
        mDialog.setTitle("Title");
        mDialog.setContentView(innerView);
        mDialog.setCancelable(true);

        // Dialog 사이즈 조절 하기
        WindowManager.LayoutParams params = mDialog.getWindow().getAttributes();
        params.width = WindowManager.LayoutParams.MATCH_PARENT;
//          params.height = WindowManager.LayoutParams.MATCH_PARENT;
        mDialog.getWindow().setAttributes((android.view.WindowManager.LayoutParams) params);


        mDialog.setContentView(R.layout.list_insert);
        mDialog.setTitle("로그인 화면");
        final  EditText title_edittext = mDialog.findViewById(R.id.title_edittext);
        final  EditText contents_edittext = mDialog.findViewById(R.id.contents_edittext);
        ImageView imageView_insert = mDialog.findViewById(R.id.imageView_insert);
        Button button_go = mDialog.findViewById(R.id.button_go);
        Button button_cancel = mDialog.findViewById(R.id.button_cancel);
}
```

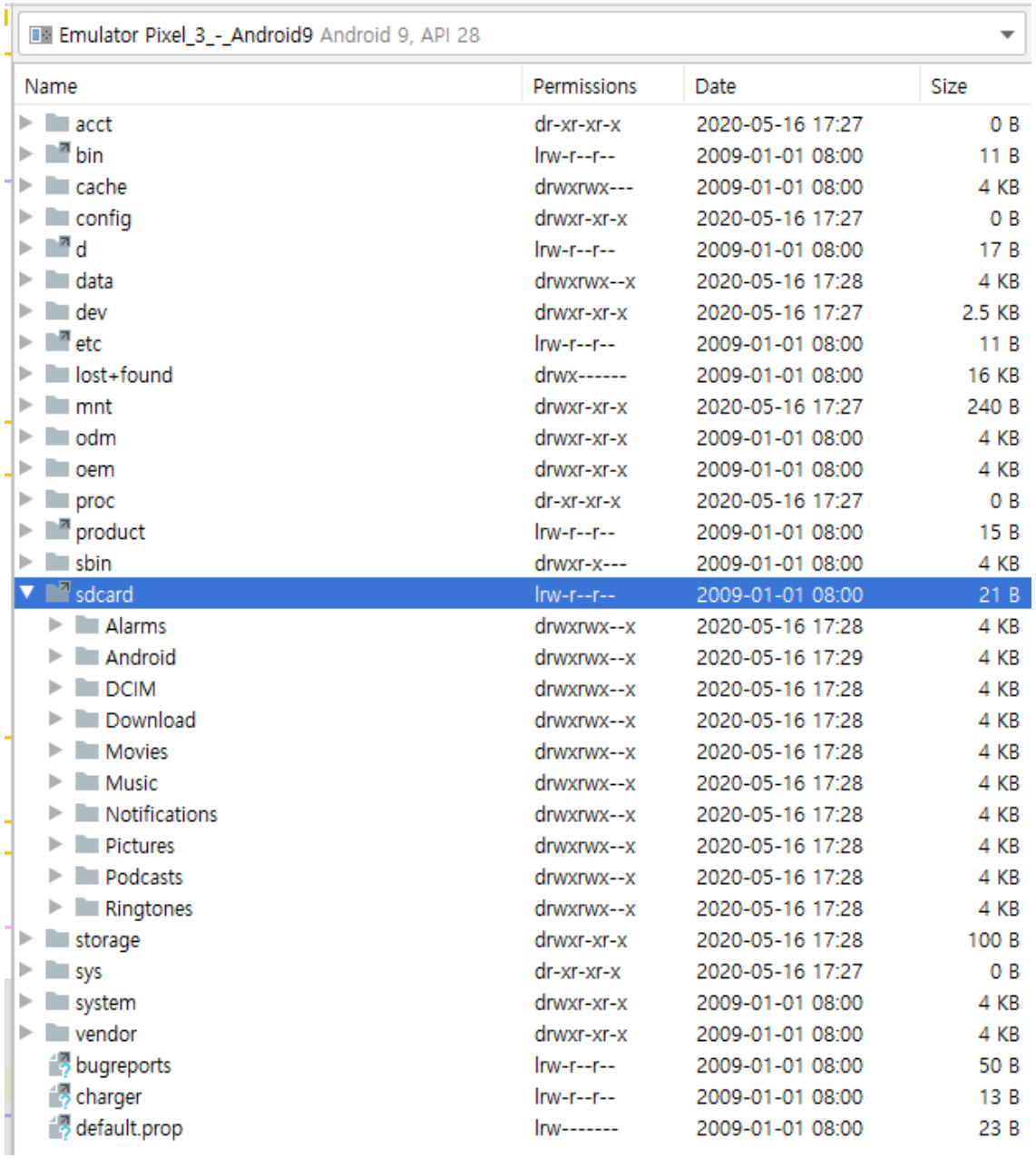
MainActivity.java

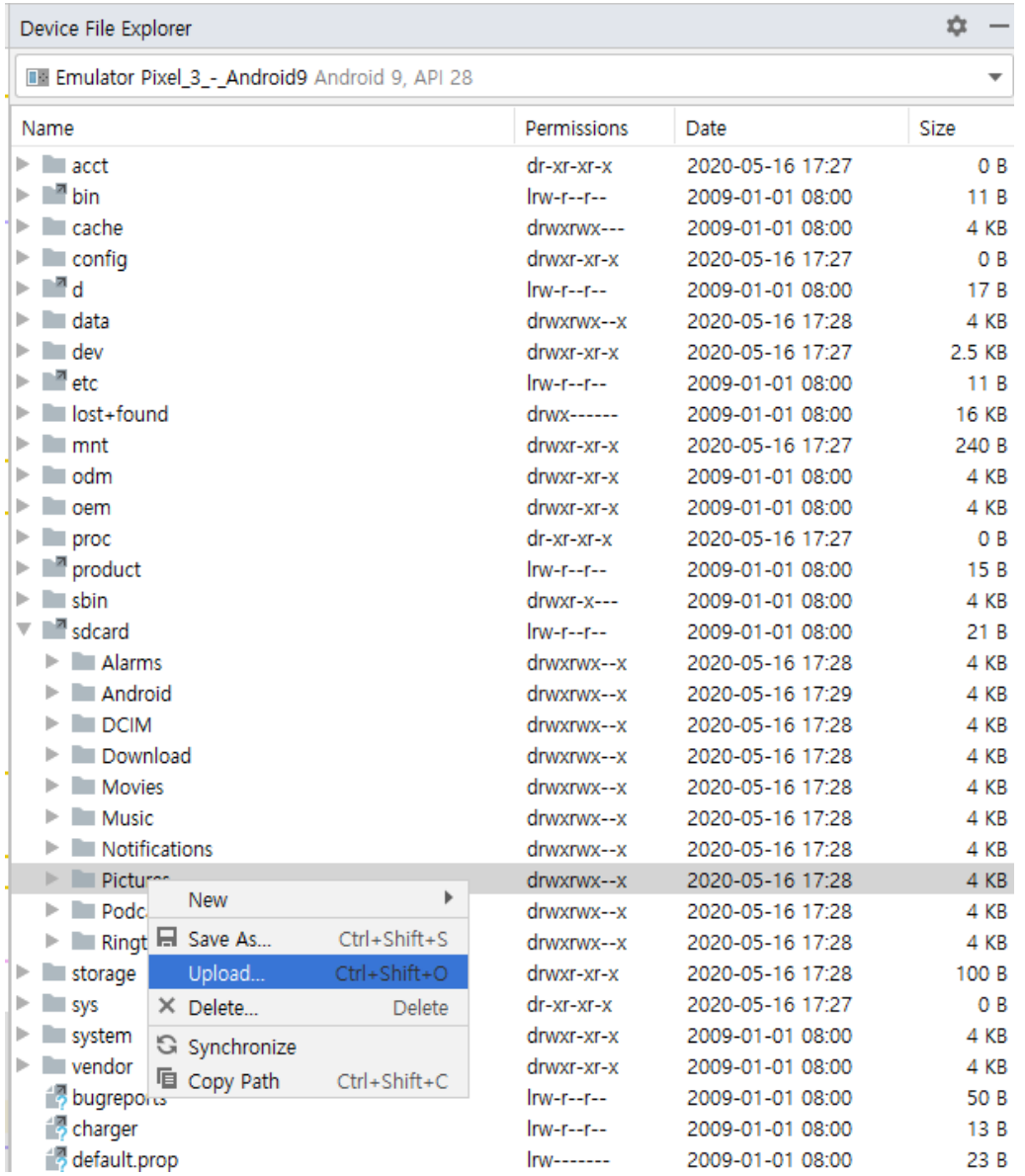

```
 public void onMenuInsert(View view) {
        final View innerView = getLayoutInflater().inflate(R.layout.list_insert, null);

        final Dialog mDialog = new Dialog(this);
        mDialog.setTitle("Title");
        mDialog.setContentView(innerView);
        mDialog.setCancelable(true);

        // Dialog 사이즈 조절 하기
        WindowManager.LayoutParams params = mDialog.getWindow().getAttributes();
        params.width = WindowManager.LayoutParams.MATCH_PARENT;
//          params.height = WindowManager.LayoutParams.MATCH_PARENT;
        mDialog.getWindow().setAttributes((android.view.WindowManager.LayoutParams) params);


        mDialog.setContentView(R.layout.list_insert);
        mDialog.setTitle("로그인 화면");
        final  EditText title_edittext = mDialog.findViewById(R.id.title_edittext);
        final  EditText contents_edittext = mDialog.findViewById(R.id.contents_edittext);
        ImageView imageView_insert = mDialog.findViewById(R.id.imageView_insert);
        Button button_go = mDialog.findViewById(R.id.button_go);
        Button button_cancel = mDialog.findViewById(R.id.button_cancel);
}
```

MainActivity.java


```
public void onMenuInsert(View view) {
        ...

        button_go.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String mMenuTitle = title_edittext.getText().toString();
                String mMenuContent = contents_edittext.getText().toString();
                dataList.add(new ItemData(cat[i],mMenuTitle,mMenuContent));
                mDialog.dismiss();
            }
        });
        button_cancel.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                mDialog.dismiss();
            }
        });
        imageView_insert.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
            }
        });
        i++;
        mDialog.show();
        adapter.notifyDataSetChanged();
}
```


File
Edit
View
Navigate
Code
Analyze
Refactor
Build
Run
Tools
VC
Tool Windows
Appearance
Quick Definition Ctrl+Shift+I
Show Siblings
Quick Documentation Ctrl+Q
Parameter Info Ctrl+P
Type Info Ctrl+Shift+P
Context Info Alt+Q
Jump to Source F4
Recent Files Ctrl+E
Recently Changed Files
Recent Locations Ctrl+Shift+E
Recent Changes Alt+Shift+C
Compare With... Ctrl+D
Compare with Clipboard
Quick Switch Scheme... Ctrl+`
Active Editor
Bidi Text Base Direction
Project Alt+1
Favorites Alt+2
Run Alt+4
Logcat Alt+6
Structure Alt+7
Profiler
Build
Build Variants
Layout Captures
Device File Explorer
Event Log
Gradle
Hierarchy
Resource Manager
Terminal Alt+F12
TODO
RecyclerVie
Android
app
1: Project
Resource Manager
imageVi
@Ov
pub


Emulator Pixel_3_-_Android9 Android 9, API 28
Name
Permissions
Date
Size
acct dr-xr-xr-x 2020-05-16 17:27 0 B
bin lrw-r--r-- 2009-01-01 08:00 11 B
cache drwxrwx--- 2009-01-01 08:00 4 KB
config drwxr-xr-x 2020-05-16 17:27 0 B
d lrw-r--r-- 2009-01-01 08:00 17 B
data drwxrwx--x 2020-05-16 17:28 4 KB
dev drwxr-xr-x 2020-05-16 17:27 2.5 KB
etc lrw-r--r-- 2009-01-01 08:00 11 B
lost+found drwx------ 2009-01-01 08:00 16 KB
mnt drwxr-xr-x 2020-05-16 17:27 240 B
odm drwxr-xr-x 2009-01-01 08:00 4 KB
oem drwxr-xr-x 2009-01-01 08:00 4 KB
proc dr-xr-xr-x 2020-05-16 17:27 0 B
product lrw-r--r-- 2009-01-01 08:00 15 B
sbin drwxr-x--- 2009-01-01 08:00 4 KB
sdcard lrw-r--r-- 2009-01-01 08:00 21 B
Alarms drwxrwx--x 2020-05-16 17:28 4 KB
Android drwxrwx--x 2020-05-16 17:29 4 KB
DCIM drwxrwx--x 2020-05-16 17:28 4 KB
Download drwxrwx--x 2020-05-16 17:28 4 KB
Movies drwxrwx--x 2020-05-16 17:28 4 KB
Music drwxrwx--x 2020-05-16 17:28 4 KB
Notifications drwxrwx--x 2020-05-16 17:28 4 KB
Pictures drwxrwx--x 2020-05-16 17:28 4 KB
Podcasts drwxrwx--x 2020-05-16 17:28 4 KB
Ringtones drwxrwx--x 2020-05-16 17:28 4 KB
storage drwxr-xr-x 2020-05-16 17:28 100 B
sys dr-xr-xr-x 2020-05-16 17:27 0 B
system drwxr-xr-x 2009-01-01 08:00 4 KB
vendor drwxr-xr-x 2009-01-01 08:00 4 KB
bugreports lrw-r--r-- 2009-01-01 08:00 50 B
charger lrw-r--r-- 2009-01-01 08:00 13 B
default.prop lrw------- 2009-01-01 08:00 23 B


Device File Explorer
Emulator Pixel_3_-_Android9 Android 9, API 28
Name
Permissions
Date
Size
acct dr-xr-xr-x 2020-05-16 17:27 0 B
bin lrw-r--r-- 2009-01-01 08:00 11 B
cache drwxrwx--- 2009-01-01 08:00 4 KB
config drwxr-xr-x 2020-05-16 17:27 0 B
d lrw-r--r-- 2009-01-01 08:00 17 B
data drwxrwx--x 2020-05-16 17:28 4 KB
dev drwxr-xr-x 2020-05-16 17:27 2.5 KB
etc lrw-r--r-- 2009-01-01 08:00 11 B
lost+found drwx------ 2009-01-01 08:00 16 KB
mnt drwxr-xr-x 2020-05-16 17:27 240 B
odm drwxr-xr-x 2009-01-01 08:00 4 KB
oem drwxr-xr-x 2009-01-01 08:00 4 KB
proc dr-xr-xr-x 2020-05-16 17:27 0 B
product lrw-r--r-- 2009-01-01 08:00 15 B
sbin drwxr-x--- 2009-01-01 08:00 4 KB
sdcard lrw-r--r-- 2009-01-01 08:00 21 B
Alarms drwxrwx--x 2020-05-16 17:28 4 KB
Android drwxrwx--x 2020-05-16 17:29 4 KB
DCIM drwxrwx--x 2020-05-16 17:28 4 KB
Download drwxrwx--x 2020-05-16 17:28 4 KB
Movies drwxrwx--x 2020-05-16 17:28 4 KB
Music drwxrwx--x 2020-05-16 17:28 4 KB
Notifications drwxrwx--x 2020-05-16 17:28 4 KB
Pictur drwxrwx--x 2020-05-16 17:28 4 KB
Podc drwxrwx--x 2020-05-16 17:28 4 KB
Ringt drwxrwx--x 2020-05-16 17:28 4 KB
storage drwxr-xr-x 2020-05-16 17:28 100 B
sys dr-xr-xr-x 2020-05-16 17:27 0 B
system drwxr-xr-x 2009-01-01 08:00 4 KB
vendor drwxr-xr-x 2009-01-01 08:00 4 KB
bugrepo lrw-r--r-- 2009-01-01 08:00 50 B
charger lrw-r--r-- 2009-01-01 08:00 13 B
default.prop lrw------- 2009-01-01 08:00 23 B
New
Save As... Ctrl+Shift+S
Upload... Ctrl+Shift+O
Delete... Delete
Synchronize
Copy Path Ctrl+Shift+C