Exp 2: Grid Layout

1. Select Empty Views Activity and Create a Project

1. App/res/values/styles:

```xml
<?xml version="1.0" encoding="utf-8"?>
<resources>
    <style name="AppTheme" parent="Theme.AppCompat.Light.NoActionBar">

        <item name="colorPrimary">@color/colorPrimary</item>
        <item name="colorPrimaryDark">@color/colorPrimaryDark</item>
        <item name="colorAccent">@color/colorAccent</item>
    </style>
</resources>
```

2. App/res/values/colors:

```xml
<?xml version="1.0" encoding="utf-8"?>
<resources>
    <color name="colorPrimary">#4a148c</color>
    <color name="colorPrimaryDark">#4a148c</color>
    <color name="colorAccent">#03DAC5</color>

    <color name="colorWhite">#ffffff</color>
    <color name="colorBlack">#000000</color>
    <color name="colorPurple">#4a148c</color>

</resources>
```

3. App → Right Click → New → Vector Asset → 50*50 → save in drawables.

4. Drawable → new cut_card_background.xml
```xml
<?xml version="1.0" encoding="utf-8"?>
<shape xmlns:android="http://schemas.android.com/apk/res/android"
    android:shape="rectangle">

    <solid android:color="@color/colorPurple"/>

    <corners
        android:topLeftRadius="400dp"
        android:bottomRightRadius="0dp"/>

</shape>
```
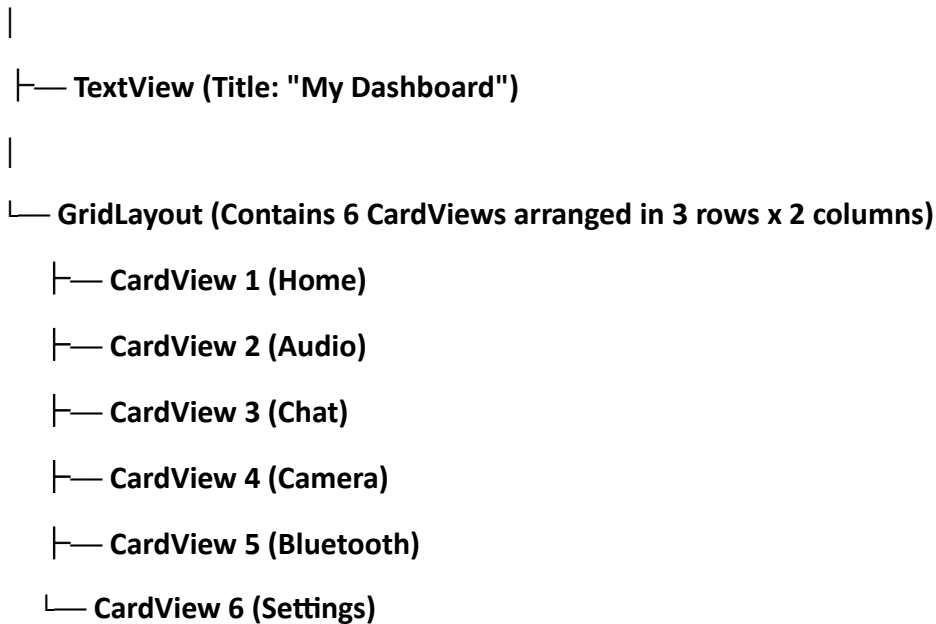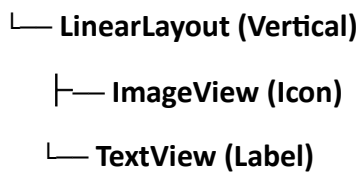
5. Activity_main.xml

RelativeLayout (Root Layout)

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├── **TextView (Title: "My Dashboard")**

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└── **GridLayout (Contains 6 CardViews arranged in 3 rows x 2 columns)**

    ├── **CardView 1 (Home)**

    ├── **CardView 2 (Audio)**

    ├── **CardView 3 (Chat)**

    ├── **CardView 4 (Camera)**

    ├── **CardView 5 (Bluetooth)**

    └── **CardView 6 (Settings)**

Each CardView contains:

    └── **LinearLayout (Vertical)**

        ├── **ImageView (Icon)**

        └── **TextView (Label)**

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@drawable/cut_card_background"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="My Dashboard"
        android:textSize="30sp"
        android:textStyle="bold"
        android:textColor="@color/colorBlack"
        android:layout_margin="12dp"/>
```

```xml
<GridLayout
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_below="@+id/textView"
    android:layout_marginTop="20dp"
    android:layout_margin="20dp"
    android:columnCount="2"
    android:rowCount="3">

    <androidx.cardview.widget.CardView
        android:id="@+id/cardHome"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="fill"
        android:layout_columnWeight="1"
        android:layout_rowWeight="1"
        android:layout_column="0"
        android:layout_row="0"
        app:cardCornerRadius="8dp"
        android:elevation="8dp"
        app:cardUseCompatPadding="true">


        <LinearLayout
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_gravity="center_vertical|center_horizontal"
            android:gravity="center"
            android:orientation="vertical">

            <ImageView
                android:layout_height="wrap_content"
                android:layout_width="wrap_content"
                android:src="@drawable/ic_home"/>

            <TextView
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:text="Home"
                android:textSize="16sp"
                android:textStyle="bold"
                android:textColor="@color/colorBlack"/>

        </LinearLayout>

    </androidx.cardview.widget.CardView>

</GridLayout>
```

</RelativeLayout>

6. Activity_main.java

MainActivity (extends AppCompatActivity)

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├── **Member Variables:**

| ├── **CardView cardHome**

| ├── **CardView cardChat**

| ├── **CardView cardSettings**

| ├── **CardView cardBluetooth**

| ├── **CardView cardCamera**

| └── **CardView cardAudio**

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├── **onCreate(Bundle savedInstanceState)**

| ├── **setContentView (set XML layout)**

| ├── **Initialize all CardViews using findViewById**

| └── **Set onClickListeners for each CardView**

| └── **On click → call showToast() with respective label**

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└── **showToast(String message)**

└── **Displays a short Toast message with the given text**

package com.example.cardview;

import android.content.Context;

import android.os.Bundle;

import android.view.View;

import android.widget.Toast;

import androidx.activity.EdgeToEdge;

import androidx.appcompat.app.AppCompatActivity;

import androidx.cardview.widget.CardView;

import androidx.core.graphics.Insets;

```java
import androidx.core.view.ViewCompat;

import androidx.core.view.WindowInsetsCompat;


public class MainActivity extends AppCompatActivity {


    CardView cardHome; //To Be done for all the 6 cards


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


        cardHome=findViewById(R.id.cardHome); //To be done for all the 6 cards
cardHome.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view)
            {
                showToast("Home Clicked");
            }
        });
//To be done for all the 6 cards.
    }


    public void showToast(String message)
    {
        Toast.makeText(this, message, Toast.LENGTH_SHORT).show();
    }
}
```