

# EREN KIZILIRMAK 210704025

In this lab, we will develop different layouts and use different widgets.

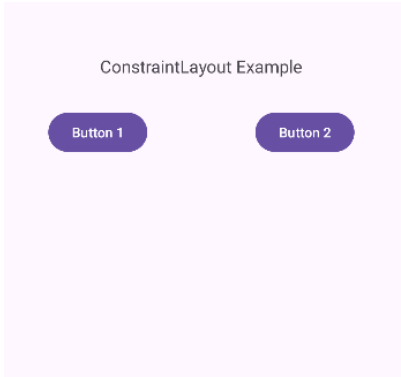
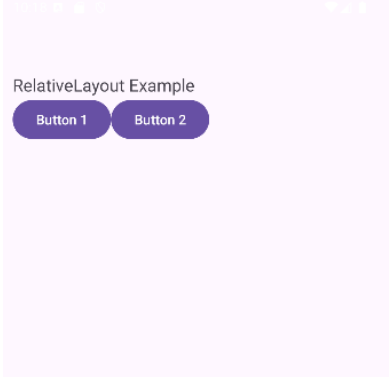
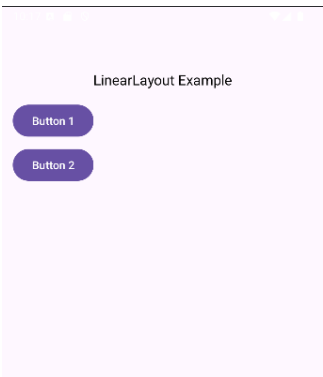
## Basic Widgets

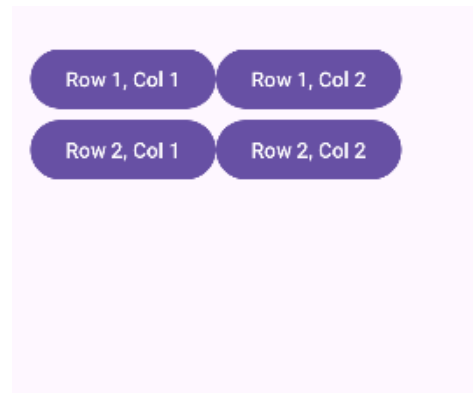
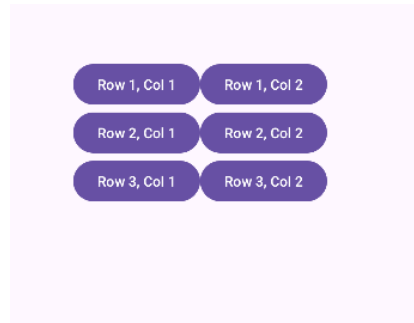
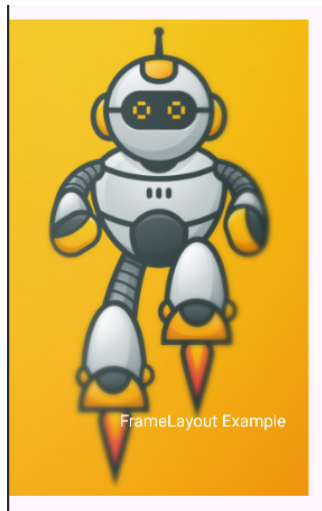
- **TextView**: Displays text to the user.
  - **EditText**: Allows users to input text.
  - **Button**: A clickable button that performs an action.
  - **ImageButton**: A button with an image instead of text.
  - **ImageView**: Displays an image or drawable.
  - **CheckBox**: A checkbox for binary choices.
  - **RadioButton**: Used in groups for single-selection choices.
  - **ToggleButton**: A button with an on/off state.
  - **Switch**: A modern on/off toggle switch.
- 

## 2. Layout Widgets

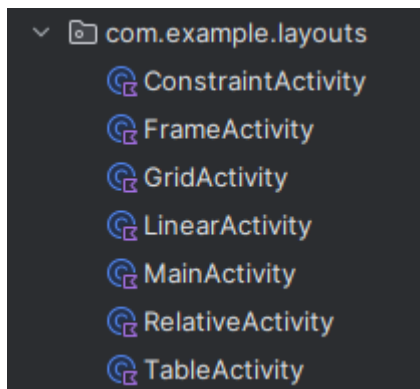
- **LinearLayout**: Arranges child views in a single row or column.
- **RelativeLayout**: Positions child views relative to each other or the parent.
- **ConstraintLayout**: A flexible layout for creating complex UIs with constraints.
- **FrameLayout**: Stacks child views on top of each other.
- **GridLayout**: Arranges child views in a grid.
- **TableLayout**: Arranges child views in rows and columns (like a table).

activity\_main.xml will have six buttons one for each layout type When a button is clicked it will open the corresponding activity with its layout showing.

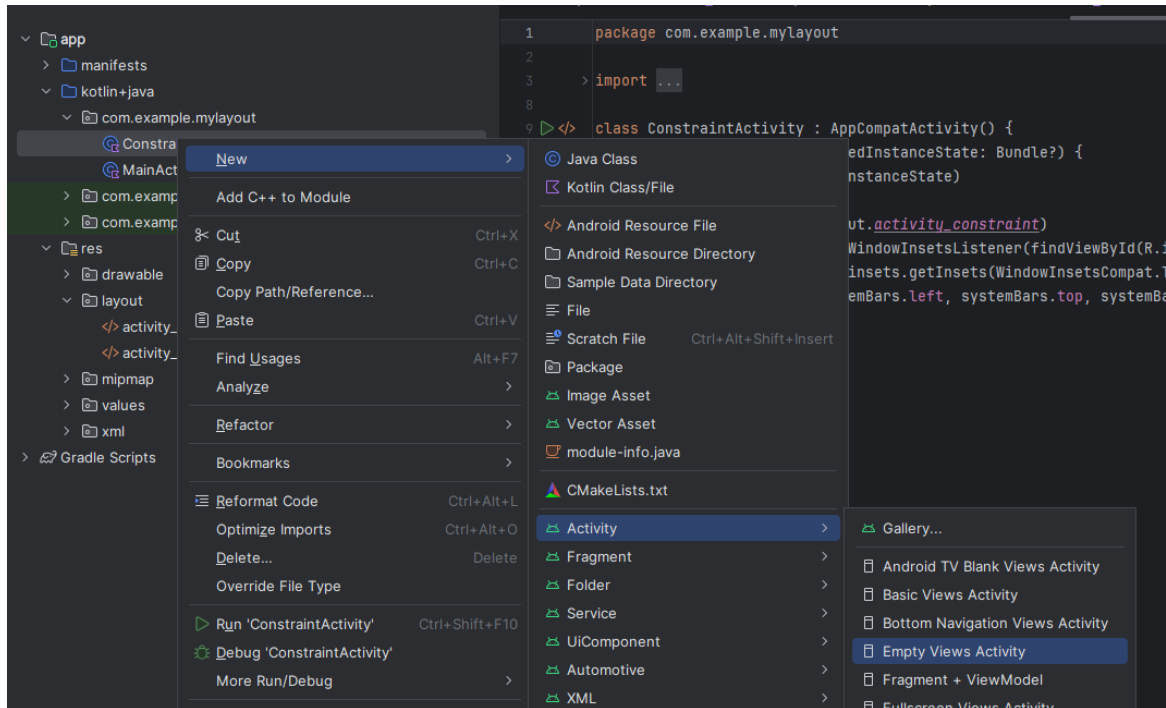




- Start a new application (Empty Views Activity)
- Create new activities, one for each layout type



Lets first create ConstraintActivity.kt



- Note the layout files are created automatically and activity is added to AndroidManifest
- We have seven activities and seven layout files once they are all added
- Copy the layout headers from Android Studio UI widgets.doc to corresponding layout files except activity\_constraint.xml which has the correct headers. activity\_main has a linear layout
- MainActivity.kt

```
class MainActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)

        findViewById<Button>(R.id.btnRelative).setOnClickListener {
            startActivity(Intent(this, RelativeActivity::class.java))
        }

        findViewById<Button>(R.id.btnConstraint).setOnClickListener {
            startActivity(Intent(this, ConstraintActivity::class.java))
        }

        findViewById<Button>(R.id.btnFrame).setOnClickListener {
            startActivity(Intent(this, FrameActivity::class.java))
        }

        findViewById<Button>(R.id.btnTable).setOnClickListener {
            startActivity(Intent(this, TableActivity::class.java))
        }
    }
}
```

```

        findViewById<Button>(R.id.btnGrid).setOnClickListener {
            startActivity(Intent(this, GridActivity::class.java))
        }

        findViewById<Button>(R.id.btnLinear).setOnClickListener {
            startActivity(Intent(this, LinearActivity::class.java))
        }
    }
}

```

- Put four widgets in each page, copy and paste the CODE and screen capture of the EMULATOR

Relative Layout

Constraint Layout

Table Layout

```

<?xml version="1.0" encoding="utf-8"?>
<TableLayout 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:orientation="horizontal">

    <TableRow android:background="@color/white" android:padding="20dp">

        <Button
            android:id="@+id/button11"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Button" />
    </TableRow>
</TableLayout>

```

```
<Button
    android:id="@+id/button12"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Button" />
```

```
<Button
    android:id="@+id/button13"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Button" />
```

```
<Button
    android:id="@+id/button14"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Button" />
```

```
</TableRow>
```

```
<TableRow android:background="@color/white" android:padding="20dp">
```

```
<RatingBar
    android:id="@+id/ratingBar"
    android:layout_width="127dp"
    android:layout_height="wrap_content" />
```

```
<TextView
    android:id="@+id/textView"
    android:layout_width="87dp"
    android:layout_height="31dp"
    android:text="TextView" />
```

```
<Button
    android:id="@+id/button15"
    android:layout_width="wrap_content"
```

```

        android:layout_height="wrap_content"

        android:text="Button" />

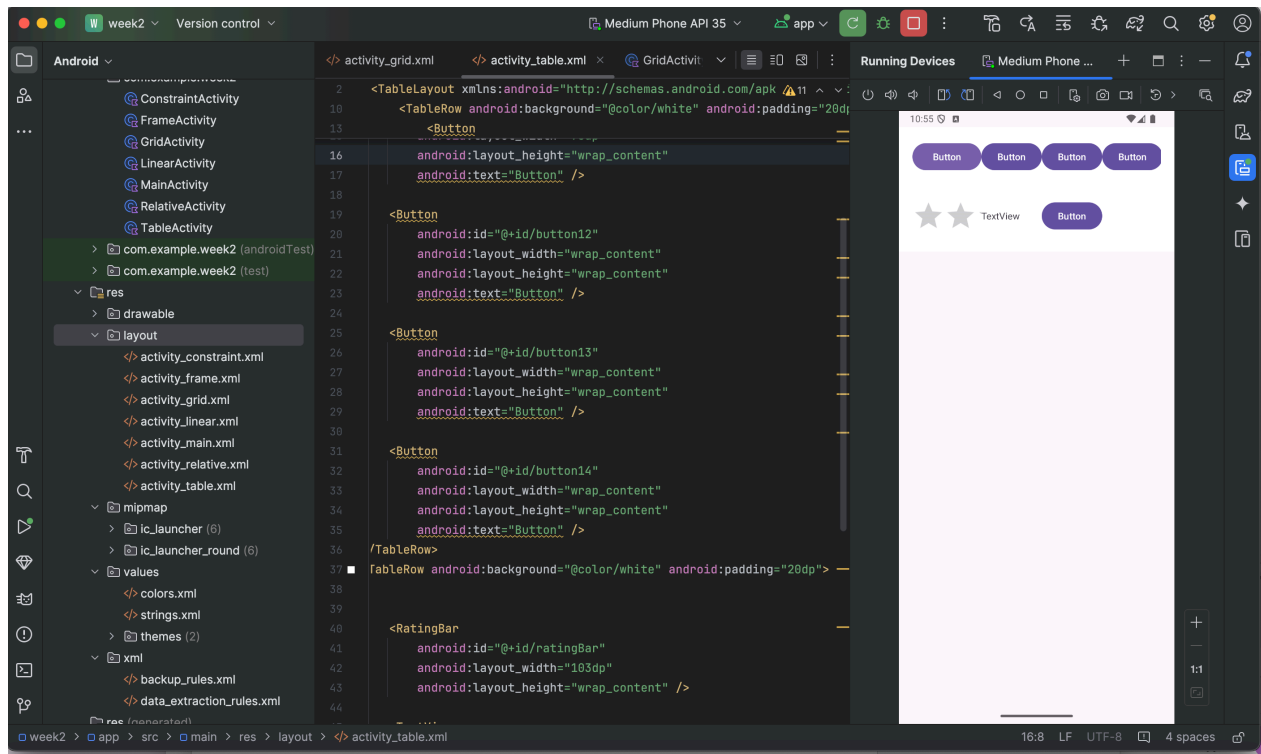
</TableRow>

```

```

</TableLayout>

```



## Frame Layout

```

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

```

```

<FrameLayout

```

```

    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_marginTop="64dp"

```

```

    android:layout_width="match_parent"

```

```

    android:layout_height="match_parent">

```

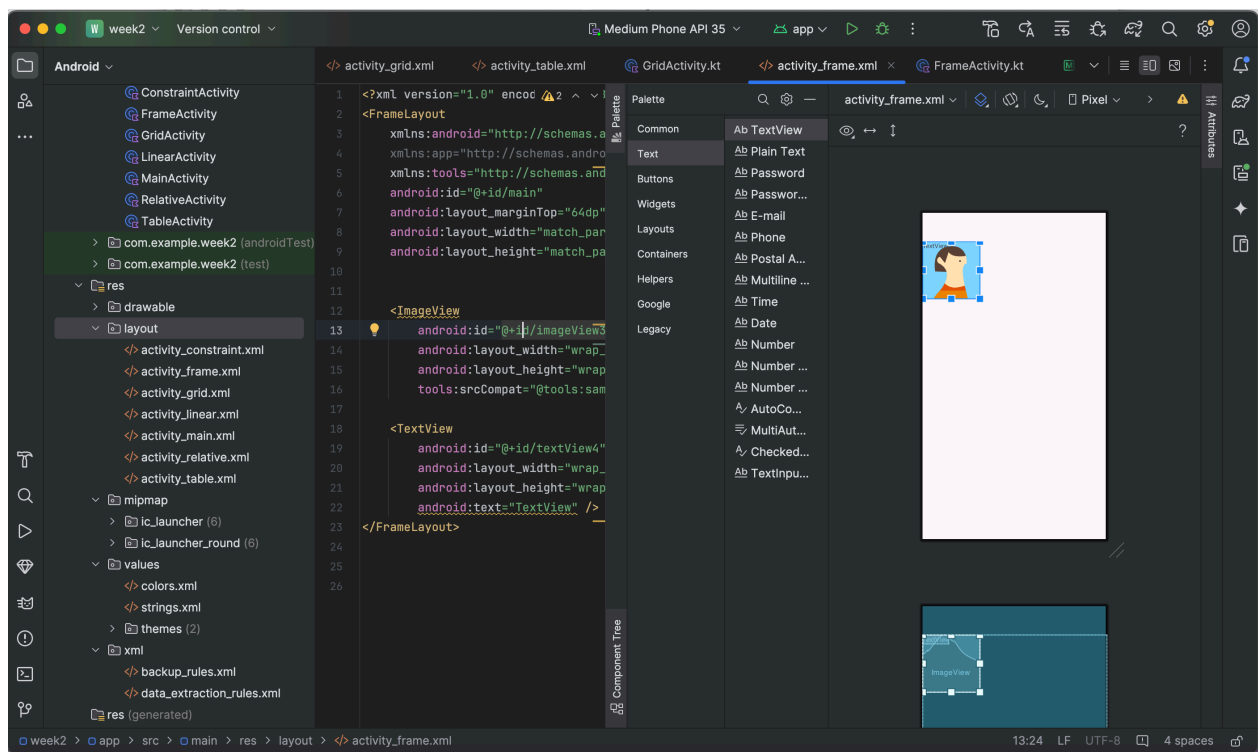
<ImageView

```
    android:id="@+id/imageView3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    tools:srcCompat="@tools:sample/avatars" />
```

<TextView

```
    android:id="@+id/textView4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="TextView" />
```

</FrameLayout>





## Grid Layout

```
<?xml version="1.0" encoding="utf-8"?>
<GridLayout 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:rowCount="2"
    android:columnCount="2"
    android:padding="16dp">
```

```
<Button
    android:id="@+id/button5"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_row="0"
    android:layout_column="0"
    android:text="Row1, Col1" />
```

```
<Button
    android:id="@+id/button6"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_row="0"
    android:layout_column="1"
    android:text="Row1, Col2" />
```

```
<Button
```

```

android:id="@+id/button7"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_row="1"
android:layout_column="0"
android:text="Row2, Col1" />

```

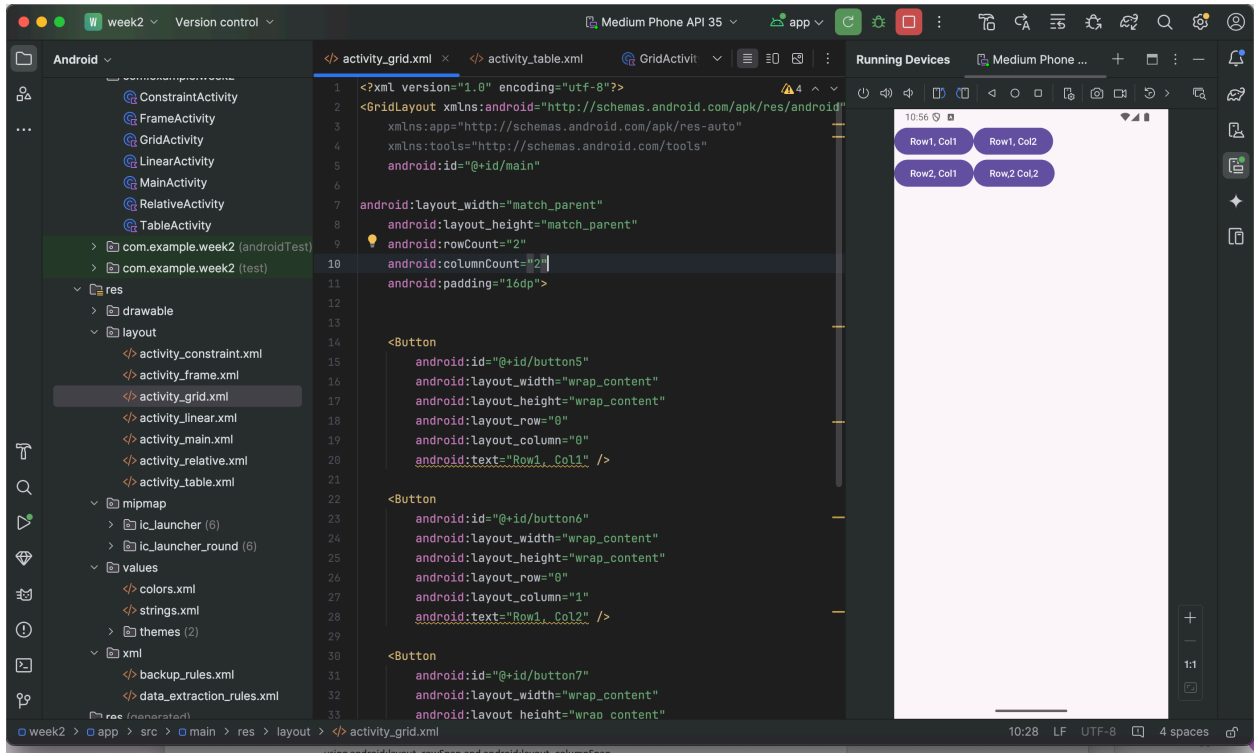
<Button

```

android:id="@+id/button10"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_row="1"
android:layout_column="1"
android:text="Row,2 Col,2" />

```

</GridLayout>



## Linear Layout

- `<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:id="@+id/main"`
- `android:layout_width="match_parent"`
- `android:layout_height="match_parent"`
- `android:orientation="horizontal">`
- 
- `<Button`
- `android:id="@+id/button8"`
- `android:layout_width="wrap_content"`
- `android:layout_height="wrap_content"`
- `android:layout_weight="1"`
- `android:text="Button" />`
- 
- `<Button`
- `android:id="@+id/button9"`
- `android:layout_width="wrap_content"`
- `android:layout_height="wrap_content"`
- `android:layout_weight="1"`
- `android:text="Button" />`
- 
- `</LinearLayout>`
- 

