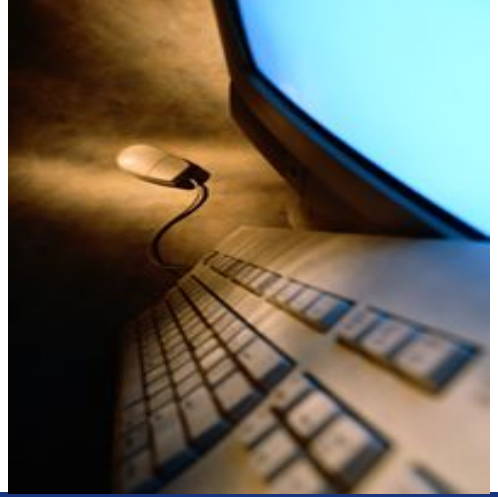
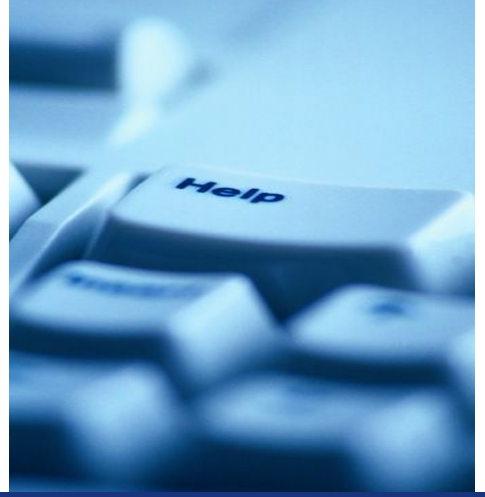
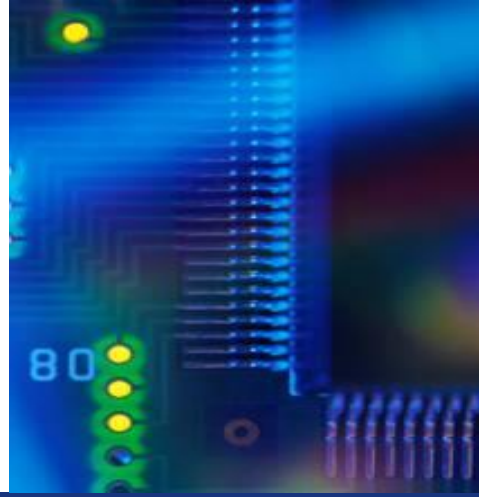
UNIVERSITAS
BUDI LUHUR



FAKULTAS TEKNOLOGI INFORMASI

Mobile Programming

[PG119/ 3 SKS]

Riskiana Wulan, MKom

Review Before UTS


Pengumuman

Libur (Cuti Bersama) Natal dan Tahun Baru

2024-12-24 (Week 13)
CUTI BERSAMA

2024-12-31 (Week 14)
CUTI BERSAMA

Kuliah Pengganti (ONLINE)

2024-12-13 (Jumat, jam 09.45 sampai selesai)
2024-12-20 (Jumat, jam 09.45 sampai selesai)

Layout

1. Linear Layout

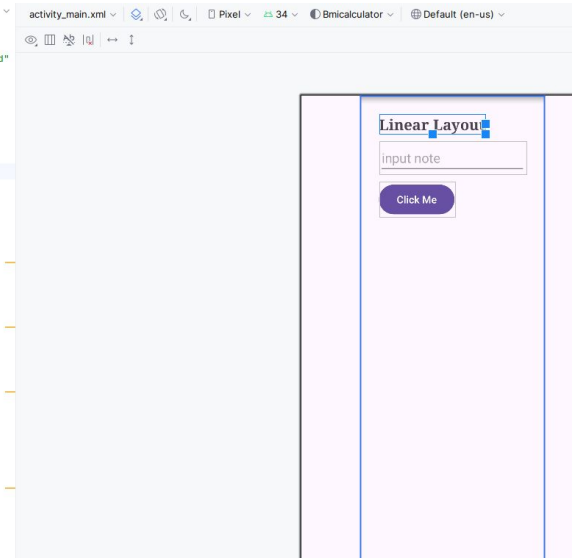
Description: Arranges child views in a single column (vertical) or a single row (horizontal).

Orientation: Either vertical or horizontal.

Usage: Use android:orientation="vertical" for a vertical layout and android:orientation="horizontal" for a horizontal layout.

Sample vertical layout

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    android:orientation="vertical"
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_height="match_parent"
    android:layout_width="wrap_content"
    android:layout_gravity="center_horizontal"
    android:padding="20dp"
    >

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="5dp"
        android:fontFamily="serif"
        android:text="Linear Layout"
        android:textSize="20sp"
        android:textStyle="bold" />

    <EditText
        android:layout_width="200dp"
        android:layout_height="wrap_content"
        android:layout_margin="5dp"
        android:hint="input note" />

    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="5dp"
        android:text="Click Me" />


</LinearLayout>
```

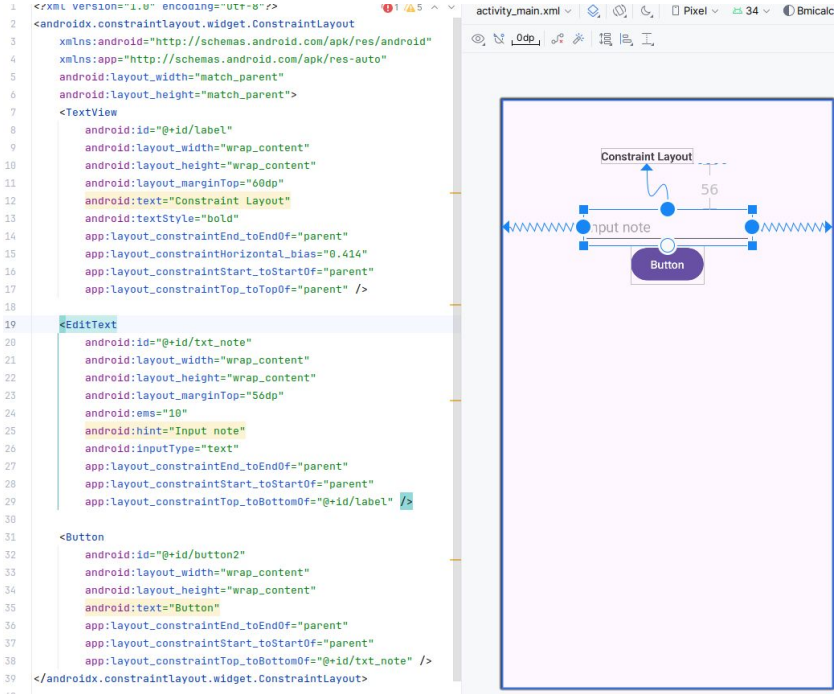


2. Constraint Layout

Description: Allows positioning and sizing of views in a flexible way using constraints.

Usage: Ideal for complex layouts where views are linked with constraints to each other or the parent.

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    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="match_parent">
    <TextView
        android:id="@+id/label"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="60dp"
        android:text="Constraint Layout"
        android:textStyle="bold"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.414"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <EditText
        android:id="@+id/txt_note"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="56dp"
        android:ems="10"
        android:hint="Input note"
        android:inputType="text"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/label" />

    <Button
        android:id="@+id/button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Button"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/txt_note" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

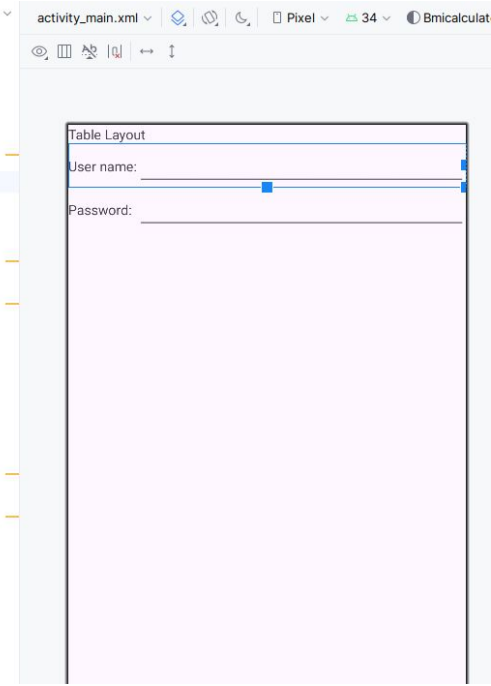


3. Table Layout

Allows you to organize views in a table format, with rows and columns. Each row in a TableLayout is defined by a TableRow element.

Within each TableRow, you can place views (like TextView, Button, etc.), and they will be organized in columns.

```
<TableLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:stretchColumns="1">
    <TextView
        android:text="Table Layout"/>

        <TableRow>
            <TextView
                android:layout_width="wrap_content"
                android:text="User name:" />

            <EditText
                android:id="@+id/txt_username"
                android:width="200dp" />
        </TableRow>

        <TableRow>
            <TextView
                android:layout_width="wrap_content"
                android:text="Password:" />

            <EditText
                android:id="@+id/txt_password"
                android:width="200dp" />
        </TableRow>

</TableLayout>
```



View Component (part 2)

View Component

1. Spinner

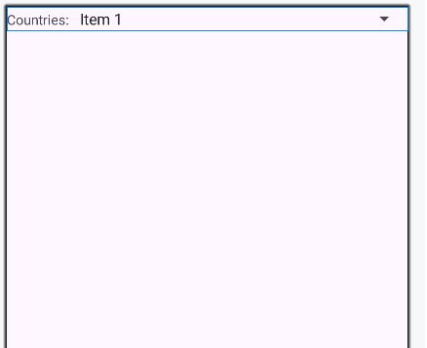
Spinner provides a dropdown menu to select one item from a list.

Useful for selecting from a small set of items.

activity_main.xml

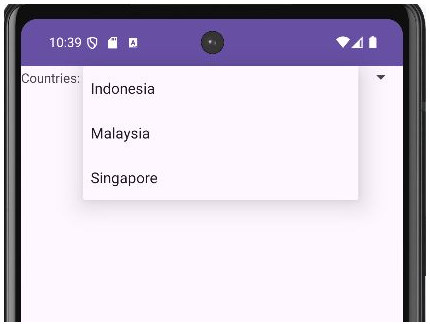
activity_main.xml | strings.xml | MainActivity.java

```
<TableLayout
    xmlns:android="http://schemas.android.com/apk/res/andr
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:stretchColumns="1">

    <TableRow>
        <TextView
            android:text="Countries: "
            />
        <Spinner
            android:id="@+id/spinner"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content" />
    </TableRow>


</TableLayout>
```



MainActivity.java

```
public class MainActivity extends AppCompatActivity {
    Spinner spinner;  2 usages

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

        String[] countries = {"Indonesia", "Malaysia", "Singapore"};
        ArrayAdapter<String> adapter = new ArrayAdapter<>( context: this, android.R.layout.simple_spinner_item, countries);
        adapter.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_item);
        spinner.setAdapter(adapter);

    }
}
```



2. Checkbox

CheckBox allows users to select or deselect an option.
Multiple checkboxes can be checked at the same time.

activity_main.xml | strings.xml | MainActivity.java

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="vertical"
    android:stretchColumns="1">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hobbies: " />

    <CheckBox
        android:id="@+id/chk_singing"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Singing">

    </CheckBox>

    <CheckBox
        android:id="@+id/chk_cooking"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Cooking">

    </CheckBox>

    <CheckBox
        android:id="@+id/chk_travelling"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Travelling">

    </CheckBox>


</LinearLayout>
```

3. Radio Button

RadioButton allows single selection within a group.

Must be used within a RadioGroup for mutual exclusivity.

```
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Gender: " />

<RadioGroup
    android:layout_width="wrap_content"
    android:layout_height="wrap_content">
    <RadioButton
        android:id="@+id/radio_button1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Male">
    </RadioButton>
    <RadioButton
        android:id="@+id/radio_button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Female">
    </RadioButton>

</RadioGroup>
```


4. Edit Text

```
<EditText
    android:id="@+id/txt_fullname"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="8dp"
    android:hint="full name" />
```


Handling User Input

```
EditText fullname;
fullName = findViewById(R.id.txt_fullname);
String fullnameValue  = fullname.getText().toString();
```

findViewById: Finds the view component (EditText Button, etc) by their IDs to interact with them in Java code.

getText().toString(): Retrieves the input text as a String (important for passing user input as data).

Handling button

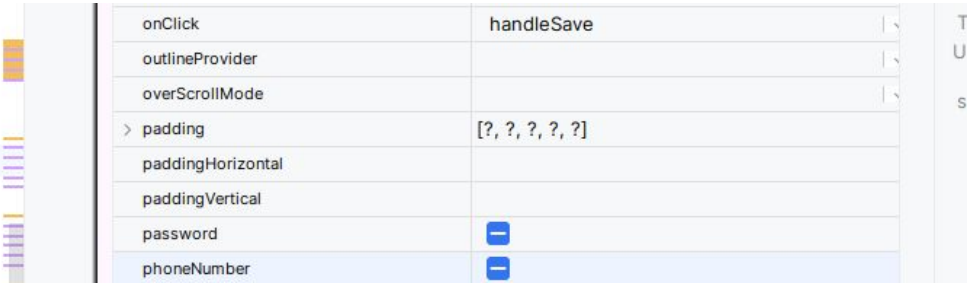
```
Button btnSave = findViewById(R.id.btnSave);
btnSave.setOnClickListener(new
View.OnClickListener() {
            @Override
            public void onClick(View v) {
                 // Add your logic
              }
        });
    }
```

Handling Button

Atau bisa dengan menambahkan nama method pada onClick attribute

```
public void handleSave(View v) {
//add your logic here
}
```

```
<Button
    android:id="@+id/btn_save"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="8dp"
    android:onClick="handleSave"
    android:text="Calculate" />
```



ACTIVITY and INTENT (Recap)

Activity

Definition: A single screen in an Android app with a user interface.

Purpose: Manages UI components and handles interactions for a screen in the app.

Lifecycle Overview: *onCreate, onStart, etc.*

```
public class MainActivity extends AppCompatActivity
{
    @Override
    protected void onCreate(Bundle
savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
}
```


Intent

Definition: An Intent is a messaging object you can use to request an action from another app component.

Types of Intents:

- **Explicit Intent**: Used to start a specific activity.
- **Implicit Intent**: Used to perform an action without specifying the exact app or component (e.g., open email, viewing a web page).

Intent: Creates an explicit intent targeting SecondActivity.

putExtra: Passes additional data (message) to the new activity.

startActivity: Starts the new activity.

Using Explicit Intents to Start Another Activity

```
public class MainActivity extends AppCompatActivity
{
   @Override
   protected void onCreate(Bundle
savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

String resultString = "This is result";
Intent resultIntent = new Intent(MainActivity.this,
SecondActivity.class);
resultIntent.putExtra("result", resultString);
startActivity(resultIntent);

}
```

Receiving Data in Another Activity

```
public class SecondActivity extends AppCompatActivity {

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

        resultText = findViewById(R.id.txt_result);
        backButton=findViewById(R.id.btn_back);

        Intent intent = getIntent();
        String result = intent.getStringExtra("result");
        resultText.setText(result);



    }
```

getIntent(): Retrieves the intent that started this activity.

getStringExtra: Extracts the data passed from MainActivity.