

Unit 1

Widget 2

1. Tujuan

Mahasiswa mampu mendesain *userinterface* menggunakan *widget* Dialog, List View, Spinner View, Time Picker, Date Picker, Analog Clock, Digital Clock, Gallery View.

2. Teori Dasar

a. Dialog

Dialog adalah jendela kecil yang meminta pengguna untuk membuat keputusan atau memasukkan informasi tambahan. Dialog tidak mengisi layar dan biasanya digunakan untuk kejadian modal yang mengharuskan pengguna untuk melakukan aksi sebelum bisa melanjutkan.

b. List View

List View adalah kelompok tampilan yang menampilkan daftar item yang dapat digulir. Item daftar secara otomatis dimasukkan ke daftar dengan menggunakan Adapter yang menarik materi dari sumber seperti larik atau kueri database dan mengonversi setiap hasil item menjadi sebuah tampilan yang dimasukkan ke dalam daftar.

c. Spinner View

Spinner adalah salah satu widget yang berfungsi sebagai komponen user interface yang dapat menampilkan daftar drop down (pilihan).

d. Time Picker

Time picker adalah salah satu widget yang berfungsi sebagai komponen user interface yang dapat menampilkan waktu serta memungkinkan user untuk memilih atau mengubah jam dan menit.

e. Date Picker

Date picker adalah salah satu widget yang berfungsi sebagai komponen user interface yang dapat menampilkan tanggal, bulan dan tahun serta memungkinkan user untuk memilih atau mengubahnya.

f. Analog Clock

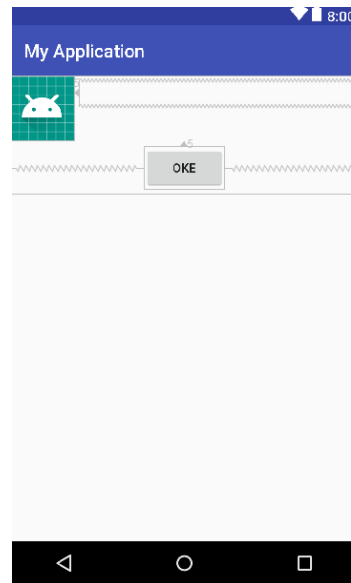
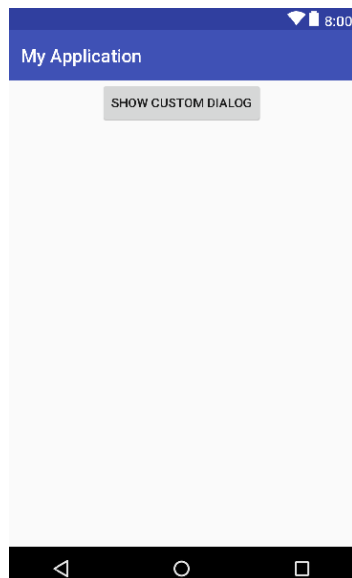
Analog Clock adalah salah satu widget yang berfungsi sebagai komponen user interface yang dapat menampilkan jam analog seperti jam dinding.

g. Digital Clock

Digital Clock adalah salah satu widget yang berfungsi sebagai komponen user interface yang dapat menampilkan jam digital.

3. Praktikum

a. Custom Dialog



XML

(layout_customdialog)

```
<?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"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content">

    <ImageView
        android:id="@+id/iv_icon"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        app:srcCompat="@android:drawable/sym_def_app_icon"/>

    <TextView
        android:padding="5dp"
        android:id="@+id/tv_desc"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="5dp"
        android:layout_toRightOf="@+id/iv_icon"/>

    <Button
        android:id="@+id/bt_ok"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/iv_icon"
        android:layout_centerHorizontal="true"
        android:layout_margin="5dp"
        android:text=" Oke " />

</RelativeLayout>
```

(activity_main)

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
```

```

        android:orientation="vertical"
        android:layout_width="match_parent"
        android:layout_height="match_parent">

        <Button
            android:id="@+id/bt_showdialog"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Show Custom Dialog"
            android:onClick="customDialog"
            android:layout_gravity="center"/>

    </LinearLayout>

```

Java

```

package com.example.lenovo.myapplication;

import android.app.Dialog;
import android.os.Bundle;
import android.support.v7.app.AppCompatActivity;
import android.view.View;
import android.widget.Button;
import android.widget.ImageView;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {

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

    public void customDialog(View view) {
        /**
         * Initiate Custom Dialog
         */
        final Dialog belajar_dialog = new Dialog(MainActivity.this);
        belajar_dialog.setContentView(R.layout.layout_customdialog);
        belajar_dialog.setTitle("Custom Dialog");

        /**
         * Mengeset komponen dari custom dialog
         */
        TextView teks = (TextView) belajar_dialog.findViewById(R.id.tv_desc);
        teks.setText("Belajar custom Dialog pada android studio");
        ImageView gambar = (ImageView) belajar_dialog.findViewById(R.id.iv_icon);
        gambar.setImageResource(R.mipmap.ic_launcher);

        Button dialogButton = (Button) belajar_dialog.findViewById(R.id.bt_ok);
        /**
         * Jika tombol diklik, tutup dialog
         */
        dialogButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                belajar_dialog.dismiss();
            }
        });

        belajar_dialog.show();
    }
}

```

b. Alert Dialog

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"
tools:context=".MainActivity">

<<Button
    android:id="@+id/bt_alert"
    android:layout_width="match_parent"
    android:text="Munculkan Alert Dialog"
    android:elevation="0dp"
    android:layout_height="wrap_content"
    android:onClick="dialogButon"
    android:gravity="center"/>

</LinearLayout>

```

Java

```

package com.example.lenovo.myapplication;

import android.content.DialogInterface;
import android.os.Bundle;
import android.support.v7.app.AlertDialog;
import android.support.v7.app.AppCompatActivity;
import android.view.View;

public class MainActivity extends AppCompatActivity {

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

    public void dialogButon(View view) {
        showDialog();
    }

    private void showDialog(){
        AlertDialog.Builder alertDialogBuilder = new AlertDialog.Builder(this);

        // set title dialog
        alertDialogBuilder.setTitle("Keluar dari aplikasi?");

        // set pesan dari dialog
        alertDialogBuilder
            .setMessage("Klik Ya untuk keluar!")
            .setIcon(R.mipmap.ic_launcher)
            .setCancelable(false)
            .setPositiveButton("Ya",new DialogInterface.OnClickListener() {
                public void onClick(DialogInterface dialog, int id) {
                    // jika tombol diklik, maka akan menutup activity ini
                    MainActivity.this.finish();
                }
            })
            .setNegativeButton("Tidak",new DialogInterface.OnClickListener() {
                public void onClick(DialogInterface dialog, int id) {
                    // jika tombol ini diklik, akan menutup dialog
                    // dan tidak terjadi apa2
                    dialog.cancel();
                }
            });

        // membuat alert dialog dari builder
        AlertDialog alertDialog = alertDialogBuilder.create();
    }

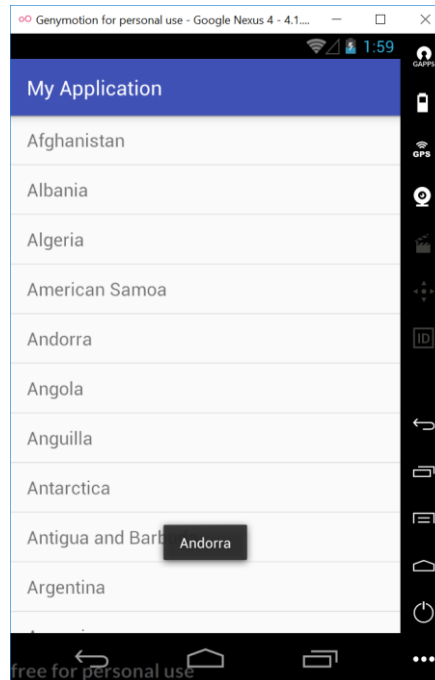
```

```

        // menampilkan alert dialog
        alertDialog.show();
    }
}

```

c. List View



XML

```

<?xml version="1.0" encoding="utf-8"?>
<ListView
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/listView"
    android:layout_width="match_parent"
    android:layout_height="match_parent">

</ListView>

```

Java

```

package com.example.lenovo.myapplication;

import android.os.Bundle;
import android.support.v7.app.AppCompatActivity;
import android.view.View;
import android.widget.AdapterView;
import android.widget.AdapterView.OnItemClickListener;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    ListView listView;
    ArrayAdapter<CharSequence> adapter;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
    }
}

```

```

        setContentView(R.layout.activity_main);

        listView = (ListView) findViewById(R.id.listView);
        adapter = ArrayAdapter.createFromResource(this, R.array.countries_arr,
        android.R.layout.simple_list_item_1);
        //adapter= new ArrayAdapter<String>(this,
        android.R.layout.simple_list_item_1);
        listView.setAdapter(adapter);
        listView.setOnItemClickListener(new AdapterView.OnItemClickListener() {

            public void onItemClick(AdapterView<?> parent, View view, int position,
            long id) {
                Toast.makeText(getApplicationContext(), adapter.getItem(position),
                Toast.LENGTH_SHORT).show();
            }
        });
    }
}

```

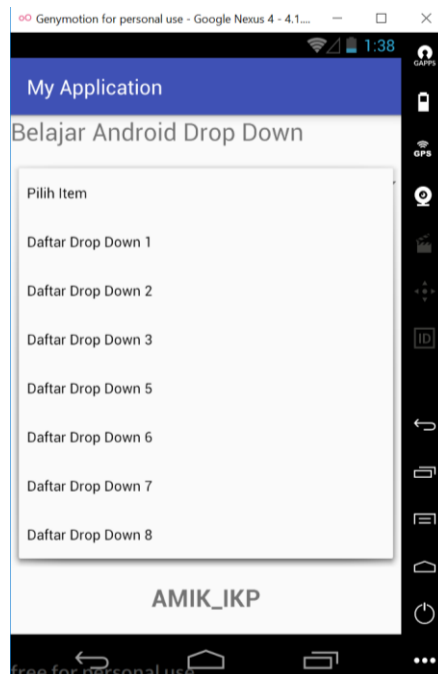
String.xml

```

<resources>
    <string name="app_name">My Application</string>
    <string-array name="countries_arr">
        <item>Afghanistan</item>
        <item>Albania</item>
        <item>Algeria</item>
        <item>American Samoa</item>
        <item>Andorra</item>
        <item>Angola</item>
        <item>Anguilla</item>
        <item>Antarctica</item>
        <item>Antigua and Barbuda</item>
        <item>Argentina</item>
        <item>Armenia</item>
        <item>Aruba</item>
        <item>Australia</item>
        <item>Austria</item>
        <item>Azerbaijan</item>
        <item>Bahrain</item>
        <item>Bangladesh</item>
        <item>Barbados</item>
        <item>Belarus</item>
        <item>Belgium</item>
    </string-array>
</resources>

```

d. Spinner View



XML

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

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginBottom="20dp"
        android:text="Belajar Android Drop Down"
        android:textSize="24sp" />

    <Spinner
        android:id="@+id/spinner"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:backgroundTint="#2ecc71"
        android:entries="@array/android_dropdown_arrays"
        android:padding="5dp" />

    <TextView
        android:layout_width="fill_parent"
        android:layout_height="fill_parent"
        android:layout_marginBottom="20dp"
        android:gravity="bottom|center"
        android:text="AMIK_IKP"
        android:textSize="24sp"
        android:textStyle="bold" />

</LinearLayout>
```

Java

```

package com.example.lenovo.myapplication;

import android.os.Bundle;
import android.support.v7.app.AppCompatActivity;
import android.view.View;
import android.widget.AdapterView;
import android.widget.AdapterView.OnItemClickListener;
import android.widget.AdapterView.OnItemSelectedListener;
import android.widget.Spinner;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    private Spinner spinner1;

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

        spinner1 = (Spinner) findViewById(R.id.spinner);
        spinner1.setOnItemSelectedListener(new ItemSelectedListener());
    }

    public class ItemSelectedListener implements AdapterView.OnItemSelectedListener {

        //get strings of first item
        String firstItem = String.valueOf(spinner1.getSelectedItem());

        public void onItemSelected(AdapterView<?> parent, View view, int pos, long
id) {
            if (firstItem.equals(String.valueOf(spinner1.getSelectedItem()))) {
                // TODO when first item is selected
            } else {
                Toast.makeText(parent.getContext(),
                    "Kamu telah memilih : " +
parent.getItemAtPosition(pos).toString(),
                    Toast.LENGTH_LONG).show();
                // TODO when item is selected by the user
            }
        }

        @Override
        public void onNothingSelected(AdapterView<?> arg) {

        }
    }
}

```

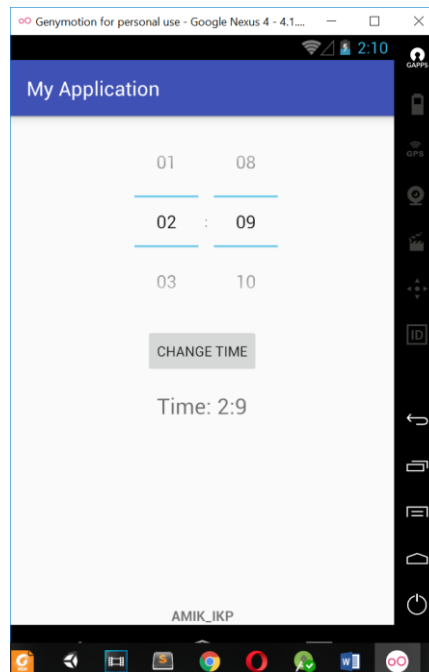
String.XML

```

<resources>
    <string name="app_name">My Application</string>
    <string-array name="android_dropdown_arrays">
        <item>Pilih Item</item>
        <item>Daftar Drop Down 1</item>
        <item>Daftar Drop Down 2</item>
        <item>Daftar Drop Down 3</item>
        <item>Daftar Drop Down 5</item>
        <item>Daftar Drop Down 6</item>
        <item>Daftar Drop Down 7</item>
        <item>Daftar Drop Down 8</item>
    </string-array>
</resources>

```

e. Time Picker



XML

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:gravity="center_horizontal"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <TimePicker
        android:id="@+id/timePicker"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content" />

    <Button
        android:id="@+id/bchange_time"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Change Time" />

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="16dp"
        android:text="Display Current Time"
        android:textSize="22dp" />

    <TextView
        android:layout_width="fill_parent"
        android:layout_height="fill_parent"
        android:text="AMIK_IKP"
        android:gravity="center|bottom"
        android:textStyle="bold" />
</LinearLayout>
```

Java

```
package com.example.lenovo.myapplication;

import android.os.Bundle;
import android.support.v7.app.AppCompatActivity;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import android.widget.TimePicker;

public class MainActivity extends AppCompatActivity {

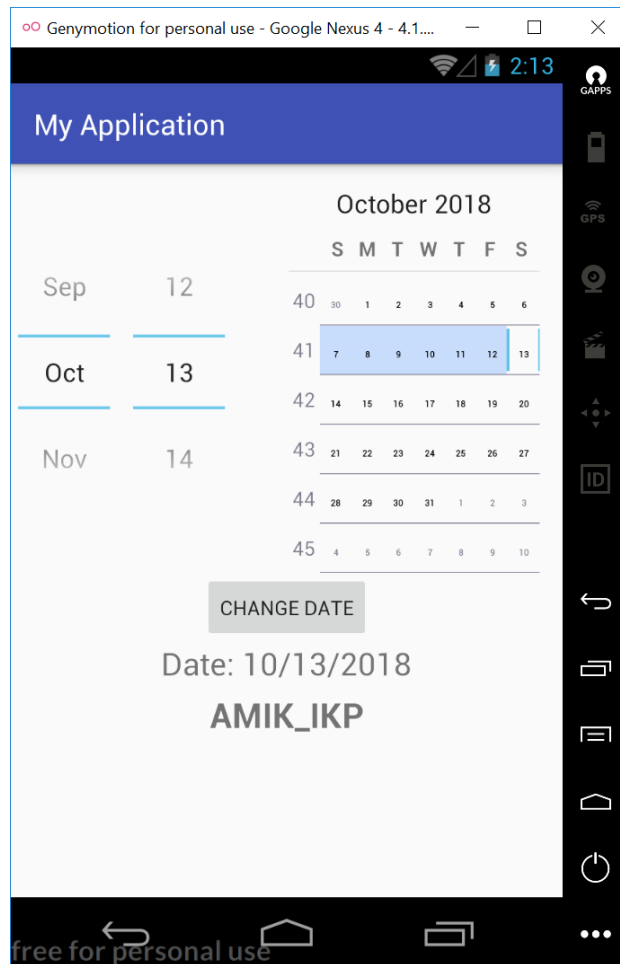
    TimePicker timePicker;
    TextView displayTime;
    Button changeTime;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        timePicker = (TimePicker) findViewById(R.id.timePicker);
        displayTime = (TextView) findViewById(R.id.textView);
        changeTime = (Button) findViewById(R.id.bchange_time);

        timePicker.setIs24HourView(true);
        displayTime.setText(currentTime());
        changeTime.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                displayTime.setText(currentTime());
            }
        });
    }

    public String currentTime() {
        String mcurrentTime = "Time: " + timePicker.getCurrentHour() + ":" +
        timePicker.getCurrentMinute();
        return mcurrentTime;
    }
}
```

f. Date Picker



XML

```
<?xml version="1.0" encoding="utf-8" ?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/android_date_picker"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_marginTop="5dp"
    android:gravity="center_horizontal"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <ScrollView
        android:layout_width="wrap_content"
        android:layout_height="match_parent">

        <LinearLayout
            android:layout_width="wrap_content"
            android:layout_height="match_parent"
            android:gravity="center_horizontal"
            android:orientation="vertical">

            <DatePicker
                android:id="@+id/datePicker"
                android:layout_width="wrap_content"
                android:layout_height="match_parent" />
        </LinearLayout>
    </ScrollView>
</LinearLayout>
```

```

        <Button
            android:id="@+id/change_date_button"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Change Date" />

        <TextView
            android:id="@+id/display_date"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Display Date"
            android:textSize="22sp" />

        <TextView
            android:layout_width="fill_parent"
            android:layout_marginTop="5dp"
            android:layout_height="fill_parent"
            android:gravity="center|bottom"
            android:text="AMIK_IKP"
            android:textSize="24sp"
            android:textStyle="bold" />
    </LinearLayout>
</ScrollView>
</LinearLayout>

```

Java

```

package com.example.lenovo.myapplication;

import android.os.Bundle;
import android.support.v7.app.AppCompatActivity;
import android.view.View;
import android.widget.Button;
import android.widget.DatePicker;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {

    DatePicker datePicker;
    TextView displayDate;
    Button changeDate;
    int month;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        datePicker = (DatePicker) findViewById(R.id.datePicker);
        displayDate = (TextView) findViewById(R.id.display_date);
        displayDate.setText("Display Date");
        changeDate = (Button) findViewById(R.id.change_date_button);

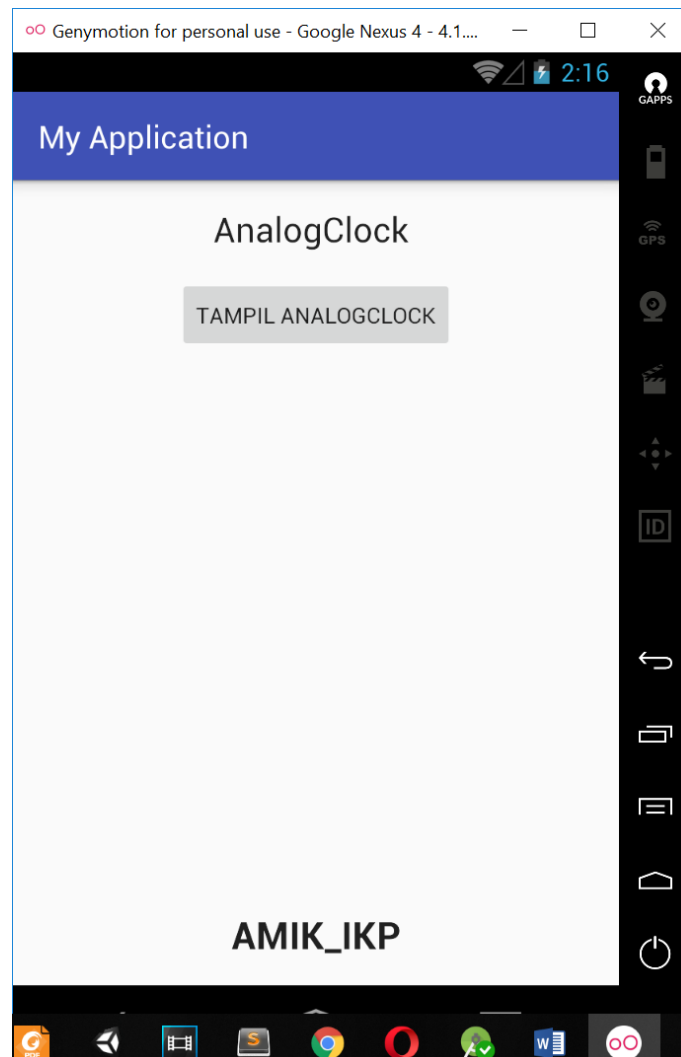
        displayDate.setText(currentDate());
        changeDate.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                displayDate.setText(currentDate());
            }
        });
    }

    public String currentDate() {
        StringBuilder mcurrentDate = new StringBuilder();
        month = datePicker.getMonth() + 1;
        mcurrentDate.append("Date: " + month + "/" + datePicker.getDayOfMonth() + "/"
+ datePicker.getYear());
        return mcurrentDate.toString();
    }
}

```

```
}
}
```

g. Analog Clock



XML

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_margin="16dp"
    android:gravity="center_horizontal"
    android:orientation="vertical">

    <TextView
        android:id="@+id/textView10"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="AnalogClock "
        android:textAppearance="?android:attr/textAppearanceLarge" />

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

```

        android:layout_height="wrap_content"
        android:layout_marginTop="16dp"
        android:onClick="onButtonClicked"
        android:text="Tampil AnalogClock" />

<AnalogClock
    android:id="@+id/analogClock"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginBottom="16dp"
    android:layout_marginTop="16dp" />

<TextView
    android:id="@+id/textView11"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent"
    android:gravity="center|bottom"
    android:text="AMIK_IKP"
    android:textAppearance="?android:attr/textAppearanceLarge"
    android:textSize="24sp"
    android:textStyle="bold" />
</LinearLayout>

```

Java

```

package com.example.lenovo.myapplication;

import android.os.Bundle;
import android.support.v7.app.AppCompatActivity;
import android.view.View;
import android.widget.AnalogClock;
import android.widget.Button;

public class MainActivity extends AppCompatActivity {

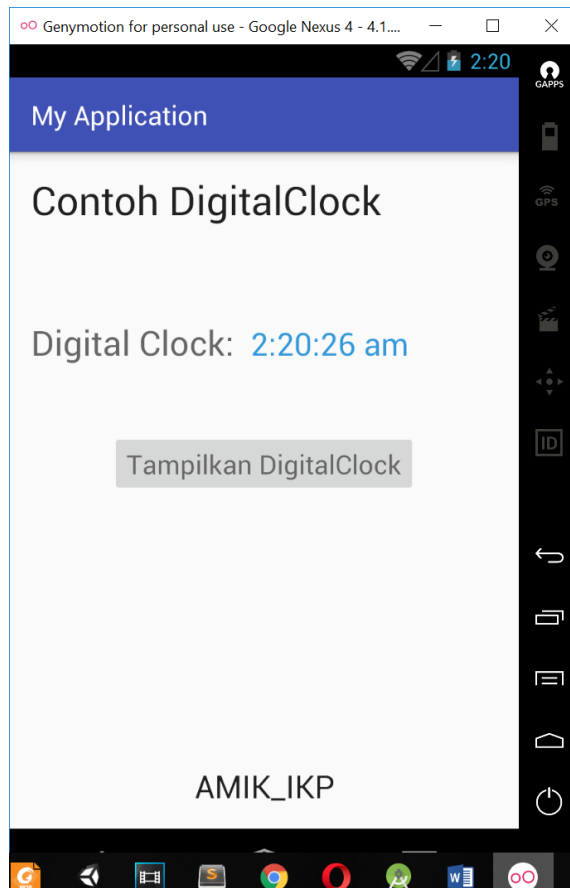
    AnalogClock analogClock;
    Button button;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        analogClock = (AnalogClock) findViewById(R.id.analogClock);
        button = (Button) findViewById(R.id.button);
        analogClock.setVisibility(View.INVISIBLE);
    }

    public void onButtonClicked(View view) {
        button.setText("Analog Clock");
        analogClock.setVisibility(View.VISIBLE);
    }
}

```

h. Digital Clock



XML

```
<?xml version="1.0" encoding="utf-8" ?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_margin="16dp"
    android:orientation="vertical">

    <TextView
        android:id="@+id/textView12"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Contoh DigitalClock "
        android:textAppearance="?android:attr/textAppearanceLarge"
        android:textSize="30sp" />

    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginBottom="30dp"
        android:layout_marginTop="70dp"
        android:orientation="horizontal">

        <TextView
            android:id="@+id/textView13"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Digital Clock: "

            android:textAppearance="?android:attr/textAppearanceLarge"
```

```

        android:textColor="#666"
        android:textSize="26sp" />

<DigitalClock
    android:id="@+id/digitalClock"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginLeft="6dp"
    android:textColor="#3498db"
    android:textSize="24sp" />

</LinearLayout>

<LinearLayout
    android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:layout_marginBottom="30dp"
    android:layout_marginTop="20dp"
    android:gravity="center_horizontal"
    android:orientation="vertical">

    <Button
        android:id="@+id/showDigitalClock"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:onClick="showDigitalClock"
        android:text="Tampilkan DigitalClock"

        android:textAppearance="?android:attr/textAppearanceLarge"
        android:textColor="#666"
        android:textSize="20sp" />

        <DigitalClock
            android:id="@+id/digitalClock1"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginTop="20dp"
            android:textColor="#3498db"
            android:textSize="40sp" />

    </LinearLayout>

    <TextView
        android:id="@+id/textView14"
        android:layout_width="fill_parent"
        android:layout_height="fill_parent"
        android:gravity="bottom|center"
        android:text="AMIK_IKP"
        android:textAppearance="?android:attr/textAppearanceLarge"
        android:textSize="24sp" />
</LinearLayout>

```

Java

```

package com.example.lenovo.myapplication;

import android.os.Bundle;
import android.support.v7.app.AppCompatActivity;
import android.view.View;
import android.widget.Button;
import android.widget.DigitalClock;

public class MainActivity extends AppCompatActivity {

```



```

DigitalClock digitalClock1;
Button showAnotherDigitalClock;

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

    DigitalClock digitalClock = (DigitalClock) findViewById(R.id.digitalClock);

    digitalClock1 = (DigitalClock) findViewById(R.id.digitalClock1);
    digitalClock1.setVisibility(View.INVISIBLE);

    showAnotherDigitalClock = (Button) findViewById(R.id.showDigitalClock);
}

public void showDigitalClock(View view) {
    digitalClock1.setVisibility(View.VISIBLE);
    showAnotherDigitalClock.setText("Menampilkan DigitalClock");
}
}

```

4. Tugas

Selesaikan semua latihan proyek pada pint 3.