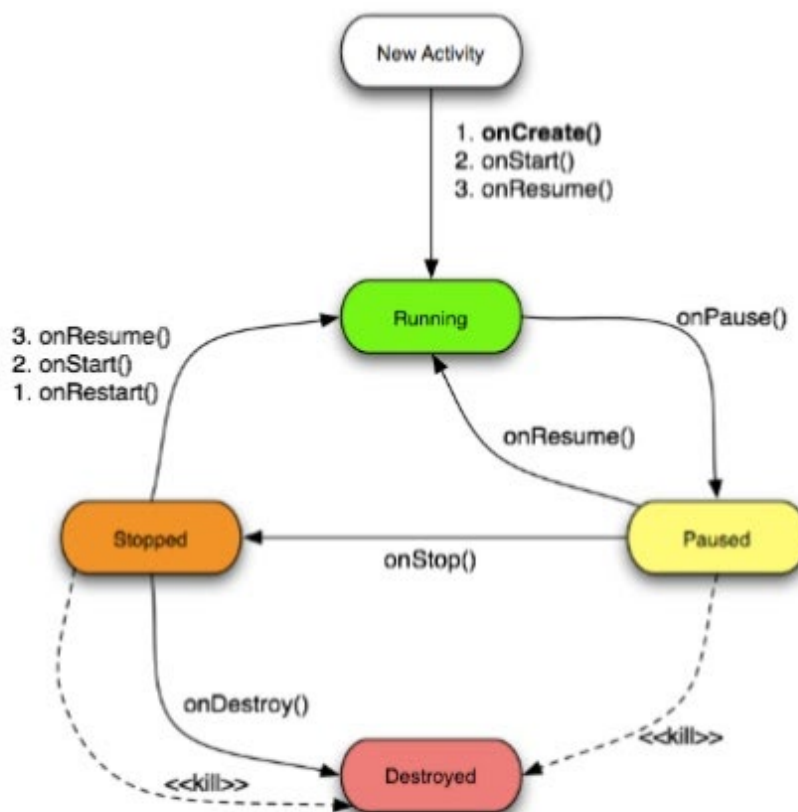## Outline of the lab 2:

- ✓ Task 1: Understanding activity lifecycle in Android
- ✓ Task 2: Simple App with intent
- ✓ Task 3: FirstApp with explicit intent

Objective:

This lab will provide you with the knowledge about activity life cycle, explicit intent in Android and how to use them to transfer data between activities.
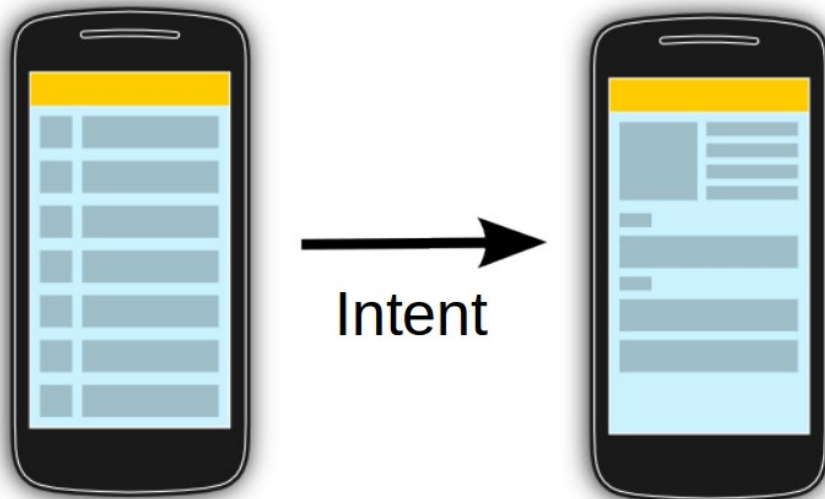
Task 1: Understanding activity lifecycle in Android

Task 2. Simple App with intent

Transferring between activities is very popular in Android. Implicit and explicit intents are two kinds of making intent. The below is modelling the process of making new intent. Simply, this is the way we call new activity.
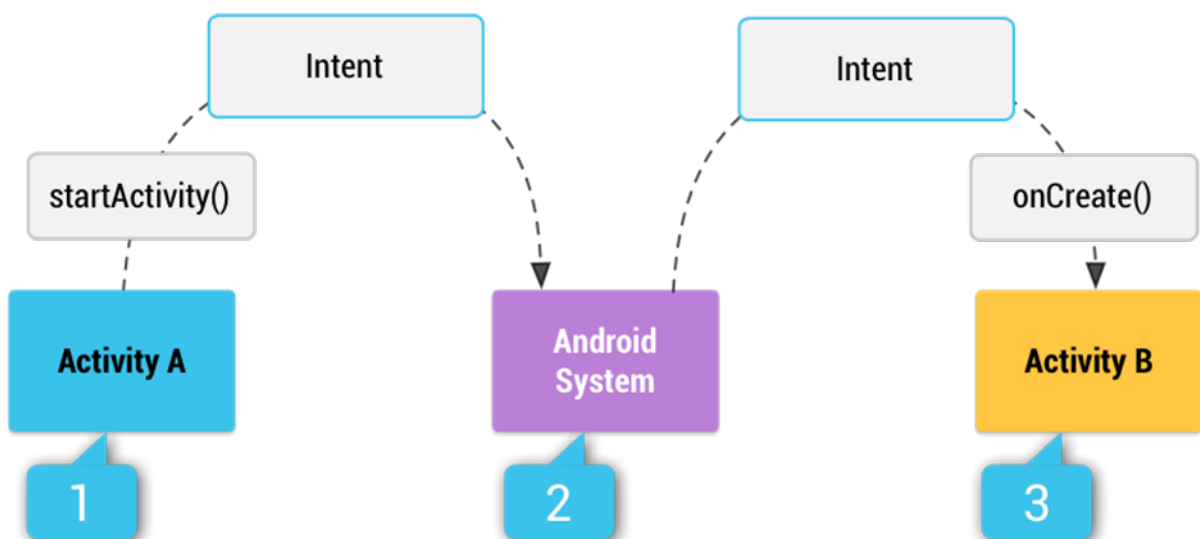

You can refer below links to receive more information about intent.

https://developer.android.com/guide/components/intents-filters

https://www.vogella.com/tutorials/AndroidIntent/article.html

The model below provides with the process of making the new intent from activity A to Activity B.

To make the new intent, activity A call the function startActivity(). Then android system will make the new Intent by start the onCreate() the activity B. as a result, activity B will create and start.

The following code demonstrates how you can start another activity via an intent

```
// Start the activity connect to the
// specified class

Intent i = new Intent(this, ActivityTwo.class); startActivity(i);
```

The task is to make 2 activities (two layouts and two java classes) as seen in the design below. Activity 1 (layout 1) has a button (Second Activity). When you click on this button. Then the activity 2 appear. The activity 2 has a button (Main Activity). When you click on this button, activity 1 will appear.
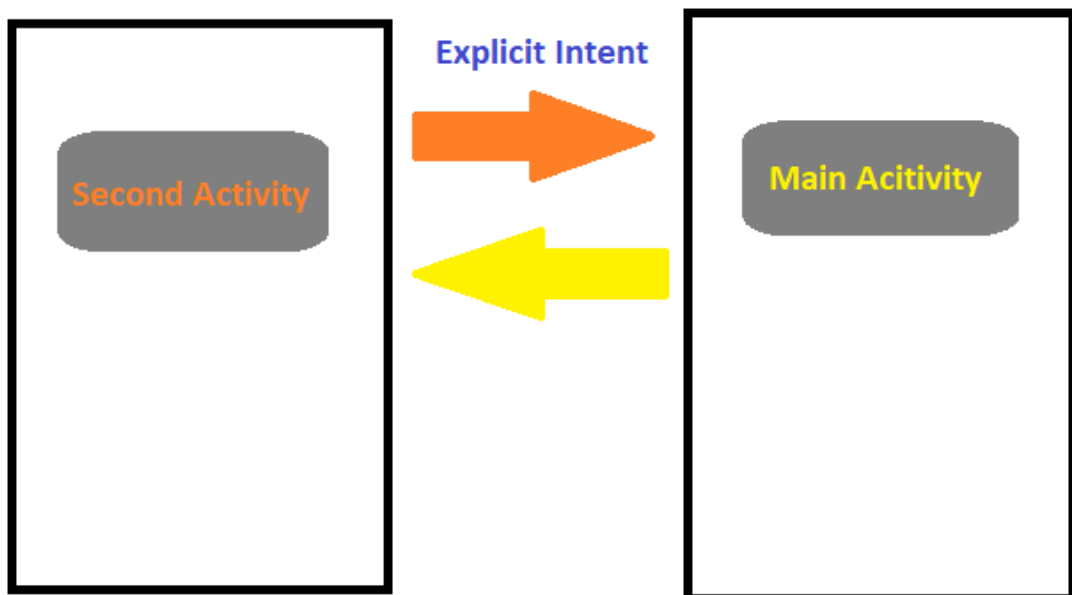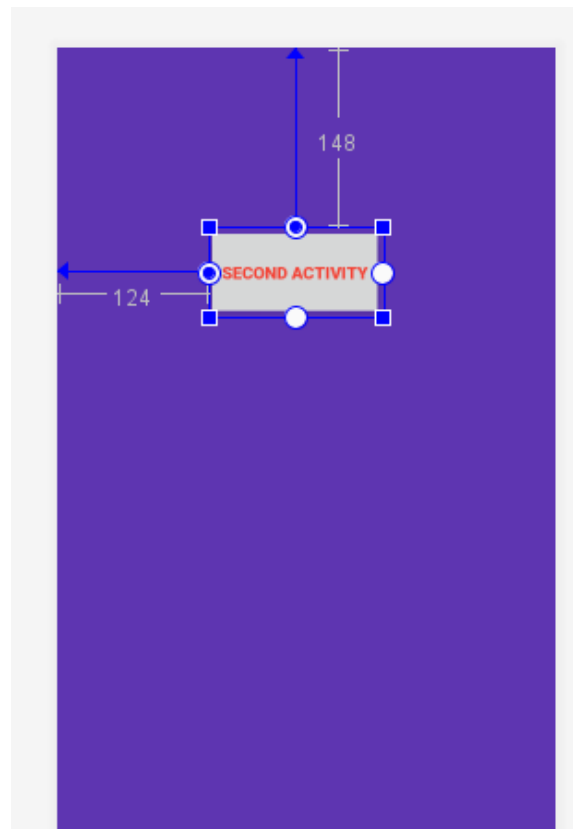

Make a Project name: Explicit Intent.

Design activity_main.xml

Background: Violet for example and Button with size bigger and color of the button.

Code for activity_main.xml file

```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"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#5E35B1"
    tools:context=".MainActivity">
    <Button
        android:id="@+id/bttFirst"
        android:layout_width="wrap_content"
        android:layout_height="75dp"
        android:layout_marginStart="124dp"
        android:layout_marginLeft="124dp"
        android:layout_marginTop="148dp"
        android:text="@string/bt_name"
        android:textColor="#F44336"
        android:textSize="14sp"
        android:textStyle="bold"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

String value for button

```xml
<resources>
    <string name="app_name">Explicit Intent</string>
    <string name="bt_name">Second Activity</string>
    <string name="btt_name2">Main Activity</string>
</resources>
```

Code for java file MainActivity.java

```java
package com.example.explicitintent;
import android.app.Activity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
public class MainActivity extends Activity {
    //declare the button for main activity
    Button btnMain;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        //catch from file R
        btnMain=(Button)findViewById(R.id.bttFirst);
        // Catch when we click the button
        btnMain.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                // Declare a new intent from Main to Second
                Intent intent=new Intent(MainActivity.this,SecondActivity.class);
                // Start to run the second activity
                startActivity(intent);
            }
        });
    }
}
```

For second activity do follows:

Right click on the package name >> New >> Activity >> Empty Activity
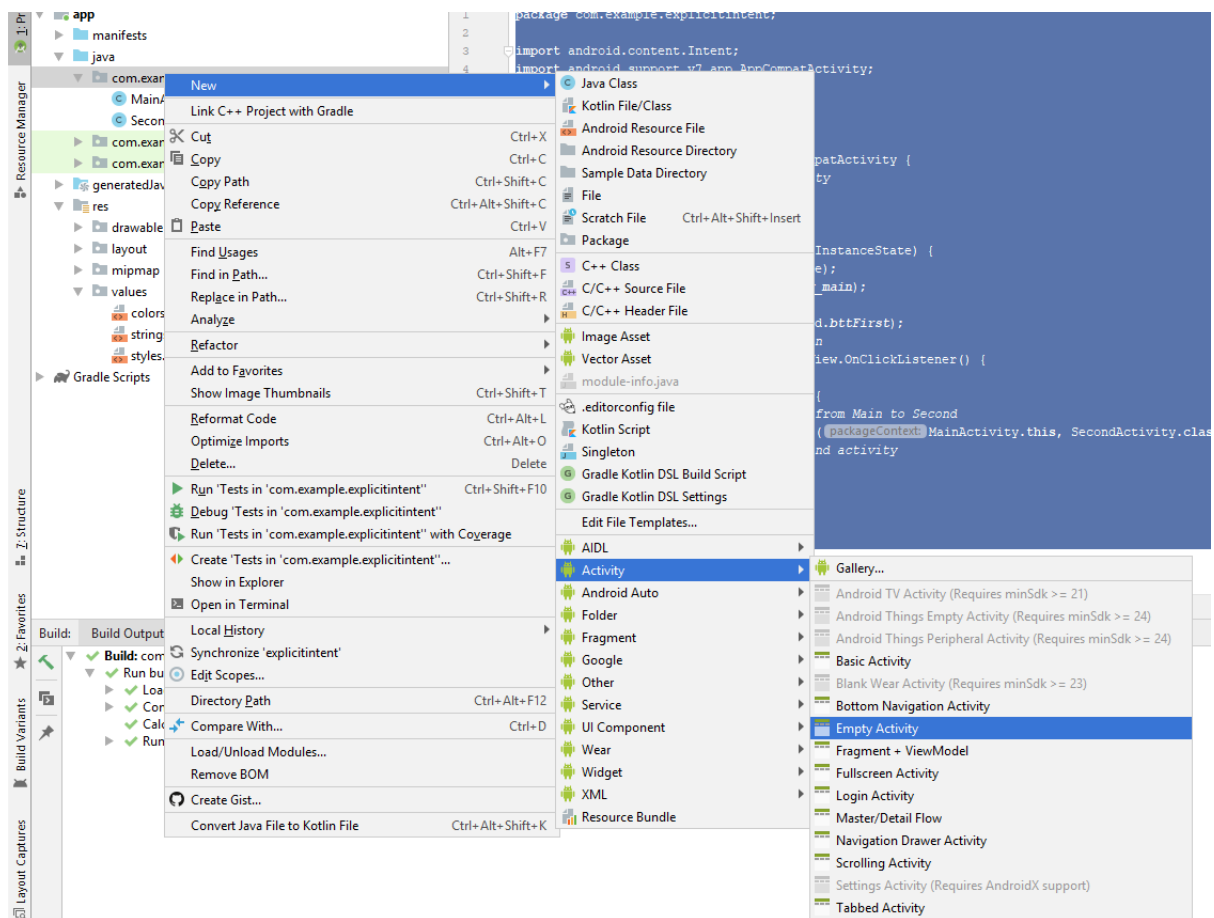
Then set the name for SecondActivity, automatically generating activity_second.xml

Background: Yellow for example and Button with size bigger and color of the button.

Code for activity_second.xml

```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"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#ff0"
    tools:context=".SecondActivity">


    <Button
        android:id="@+id/bttSecond"
```

```xml
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginStart="132dp"
            android:layout_marginLeft="132dp"
            android:layout_marginTop="128dp"
            android:text="@string/btt_name2"
            android:textColor="#5E35B1"
            android:textColorHint="#C0CA33"
            android:textStyle="bold"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```
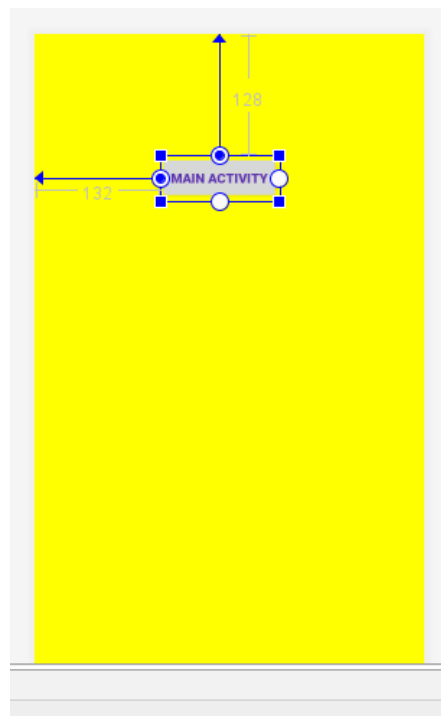

Code for SecondActivity.java file

```java
package com.example.explicitintent;
import android.app.Activity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
public class SecondActivity extends Activity {
    Button btnSecond;
    @Override
```

```java
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_second);
        btnSecond = (Button) findViewById(R.id.bttSecond);
        btnSecond.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent=new Intent(SecondActivity.this,
MainActivity.class);
                startActivity(intent);
            }
        });
    }
}
```

Then run and debug

Task 3: using explicit intent for the FirstApp built in lab 1

The task is demonstrated in the screen below. The screen 1 (activity_main.xml) has a edit_text to get your name and has a button (Greetings). When you click on greeting button. The screen 2 (message.xml) will appear and display on the text view with the message that we did from the lab 1. The screen 2 has a button (Main Act). When you click on this button. The main activity screen will appear.
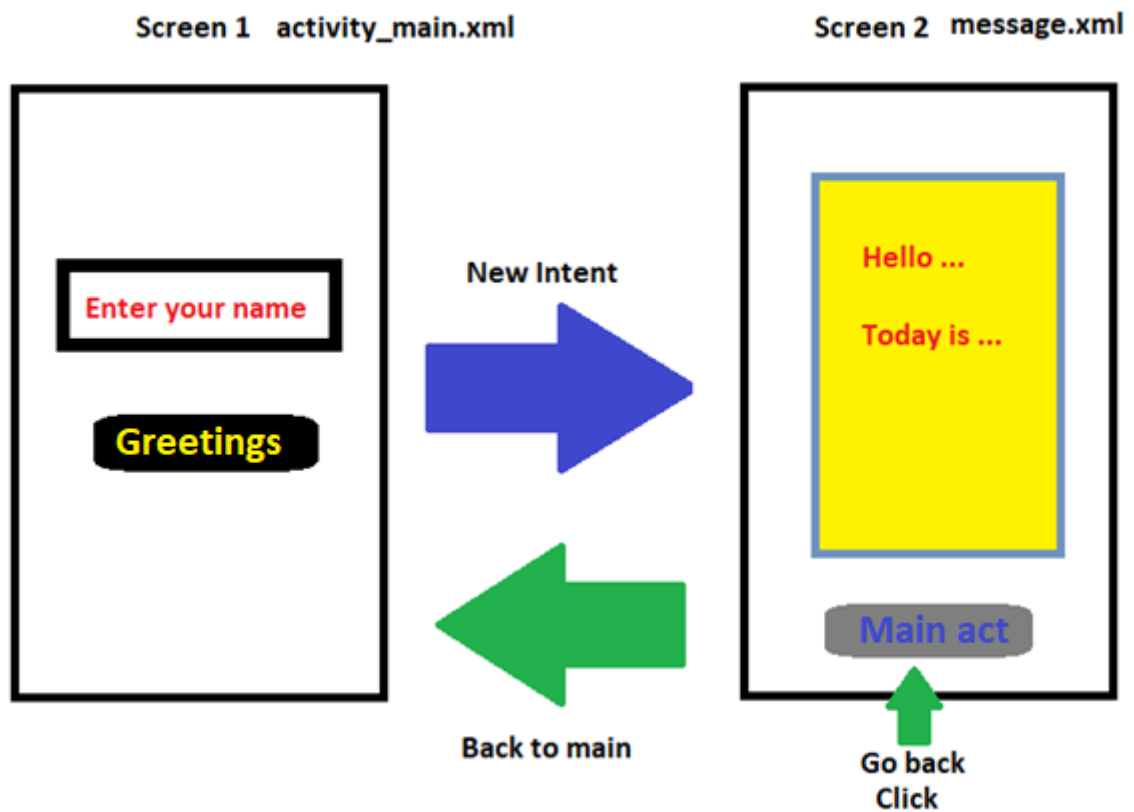
Make the new project name is First App Intent

Main activity like this
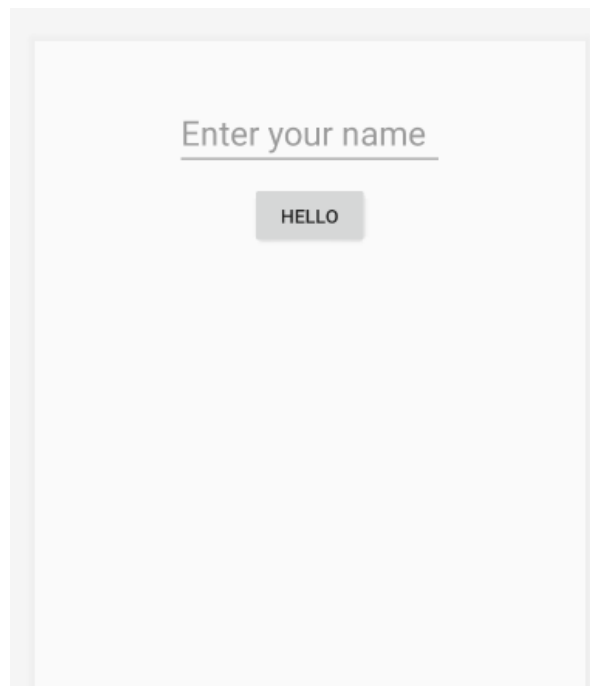
Code for activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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:paddingBottom="16dp"
    android:paddingLeft="16dp"
    android:paddingRight="16dp"
    android:paddingTop="16dp"
    tools:context=".MainActivity">
    <EditText
        android:id="@+id/editText1"
        android:layout_width="200dp"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="25dp"
        android:hint="@string/name"
        android:inputType="text"
        android:textSize="25sp"
        android:textColor="#000" />
    <Button
        android:id="@+id/button1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/editText1"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="10dp"
        android:text="@string/hello_name"/>
</RelativeLayout>
```

Add code into the strings.xml

```xml
<resources>
    <string name="app_name">First App Intent</string>
    <string name="hello_name">Hello</string>
    <string name="name">Enter your name</string>
    <string name="btn_name2">Main Act</string>
</resources>
```

Add code for Java file for MainActivity.java

```java
package com.example.firstappintent;
import android.app.Activity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import static android.provider.AlarmClock.EXTRA_MESSAGE;
public class MainActivity extends Activity {
    EditText edtTxt;
    Button btnSend;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        edtTxt=(EditText)findViewById(R.id.editText1);
        btnSend=(Button) findViewById(R.id.button1);
        btnSend.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                // Make new intent to Hello Activity
                Intent intent=new Intent(MainActivity.this, HelloActivity.class);
                // Declare message and get the string from edtTxt get the string
that we type
                String message=edtTxt.getText().toString();
                // Keep the message in the EXTRA_MESSAGE in intent to prepare to
send to the intent
                intent.putExtra("data", message);
                // Start the Hello Activity
                startActivity(intent);
            }
        });
    }
}
```

Now right click on the package name then create a new activity (empty)

Name for the activity is HelloActivity
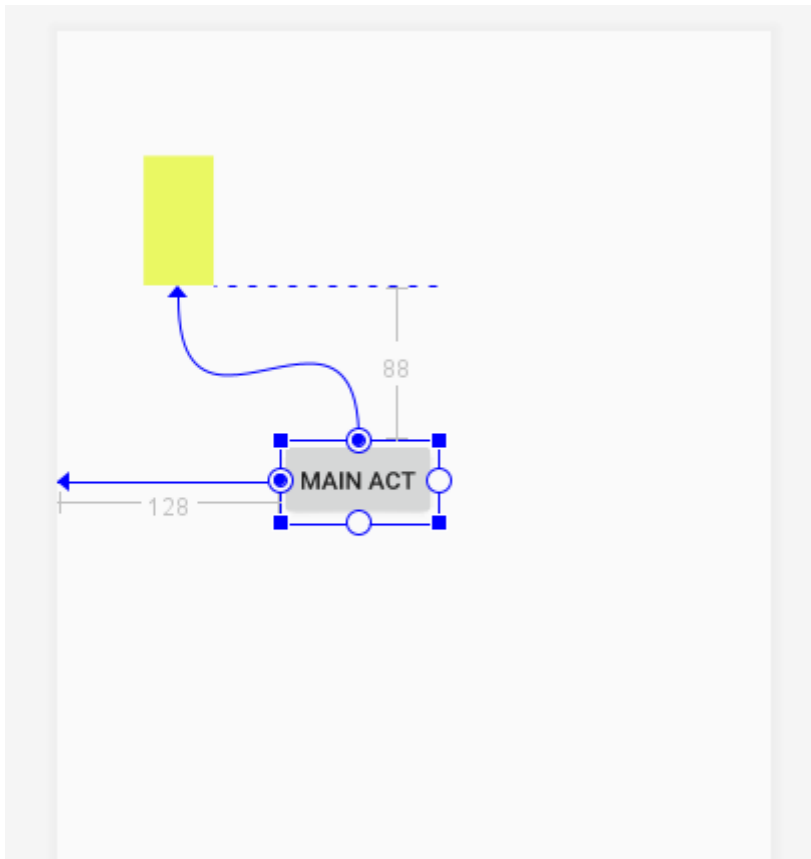
Add this code for xml file, activity_hello.xml

```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"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".HelloActivity">
    <TextView
        android:id="@+id/textView1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_marginStart="50dp"
        android:layout_marginLeft="50dp"
        android:layout_marginTop="72dp"
        android:background="#EAF863"
        android:padding="20dp"
        android:textColor="#F30723"
        android:textSize="25sp"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
```

```xml
    <Button
        android:id="@+id/btMain"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="128dp"
        android:layout_marginLeft="128dp"
        android:layout_marginTop="88dp"
        android:text="@string/btn_name2"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/textView1" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Java code for HelloActivity.java

```java
package com.example.firstappintent;
import android.app.Activity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import java.util.Date;
import static java.text.DateFormat.getDateInstance;

public class HelloActivity extends Activity {
    TextView txtV;
    Button btnMain;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_hello);
        txtV=(TextView)findViewById(R.id.textView1);
        btnMain=(Button)findViewById(R.id.btMain);
        // Get the Intent from Main and get the string from message name "data"
        final Intent intent=getIntent();
        String message=intent.getStringExtra("data");

        // Display the text view by hello user and today is...
        String currentDateTimeString = getDateInstance().format(new Date());
        txtV.setText("Hello! " + message + "\n Today is " +
currentDateTimeString);

        // Go back to the main activity when get the click on button main
        btnMain.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
            Intent intent1=new Intent(HelloActivity.this, MainActivity.class);
```

```
                startActivity(intent1);
            }
        });
    }
}
```