Rješenje zadaće:

*<?***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=".MainActivity"**>  
 <**TextView  
 android:id="@+id/textView"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="20dp"  
 android:layout\_marginTop="60dp"  
 android:text="Celsius"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"** />  
 <**TextView  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="20dp"  
 android:layout\_marginTop="120dp"  
 android:text="Fahrenheit"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"** />  
 <**EditText  
 android:id="@+id/input1"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="100dp"  
 android:layout\_marginTop="60dp"  
 android:ems="10"  
 android:inputType="textPersonName"  
 android:text="0"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"** />  
 <**EditText  
 android:id="@+id/input2"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="100dp"  
 android:layout\_marginTop="120dp"  
 android:ems="10"  
 android:inputType="textPersonName"  
 android:text="32"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"** />  
</**androidx.constraintlayout.widget.ConstraintLayout**>

**package** com.example.myapplication;  
**import** androidx.appcompat.app.AppCompatActivity;  
**import** android.view.MotionEvent;  
**import** android.view.View;  
**import** android.widget.EditText;  
**import** android.os.Bundle;  
**public class** MainActivity **extends** AppCompatActivity {  
 @Override  
 **protected void** onCreate(Bundle savedInstanceState) {  
 **super**.onCreate(savedInstanceState);  
 setContentView(R.layout.***activity\_main***);  
 EditText celsius = (EditText) findViewById(R.id.***input1***);  
 EditText fahrenheit = (EditText) findViewById(R.id.***input2***);  
 celsius.setOnTouchListener(**new** View.OnTouchListener() {  
 @Override  
 **public boolean** onTouch(View view, MotionEvent motionEvent) {  
  
 **double** c = Double.*valueOf*(celsius.getText().toString());  
 **double** f = c \* 1.8 + 32.0;  
 fahrenheit.setText(String.*valueOf*(f));  
 **return false**;  
 }  
 });  
 fahrenheit.setOnTouchListener(**new** View.OnTouchListener() {  
 @Override  
 **public boolean** onTouch(View view, MotionEvent motionEvent) {  
 **double** f = Double.*valueOf*(fahrenheit.getText().toString());  
 **double** c = (f - 32.0) \* (5.0 / 9.0);  
 celsius.setText(String.*valueOf*(c));  
 **return false**;  
 }  
 });  
 }  
}

## Životni ciklus Android Activity (life cycle)

Važno je razumjeti životni ciklus aktivnosti. To je niz stanja kroz koja prolazi aktivnost od trenutka njenog stvaranja do trenutka njenog gašenja. Na primjerima smo uočili da imamo glavnu aktivnost (**MainActivity**) koja proširuje klasu **AppCompatActivity** i svaka ativnost koja se kreira prvi put ima **onCreate**() metodu u kojoj je obično povezujemo s pripadnim grafičkim sučeljem **setContentView**().Za kreiranje elemenata korisničkog sučelja također je potrebno koristiti **onCreate**() metodu. Aktivnost se uništava kada se klikne gumb Natrag. Potrebno je napisati dodatni kod u aktivnost kako bi se sačuvalo stanje kada je uništena.

Metoda **onPause**() se poziva kada se aktivnost pošalje u pozadinu, kao i kada se ubije odnosno u trenutku kada korisnik pritisne tipku Natrag.

Kada se aktivnost pokrene, uvijek se pozivaju metode **onStart**() i **onResume**(), bez obzira je li aktivnost vraćena iz pozadine ili je tek stvorena.

Ako aplikacija ima samo jednu aktivnost i aktivnost je ubijena, aplikacija će i dalje raditi u memoriji.

Osnovna klasa Activity definira niz događaja koji upravljaju životnim ciklusom aktivnosti. Životnim ciklusom Android aplikacije strogo upravlja sustav. Android pokreće svaku aplikaciju u zasebnom procesu, od kojih svaki ima svoj vlastiti virtualni stroj.

Klasa Activity definira sljedeće događaje:

**onCreate()** se poziva kada se aktivnost prvi put kreira,

**onStart()** se poziva kada aktivnost postane vidljiva korisniku,

**onResume()** se poziva kada aktivnost počne komunicirati s korisnikom,

**onPause()** se poziva kada je trenutna aktivnost pauzirana, a prethodna aktivnost se nastavlja,

**onStop()** se poziva kada aktivnost više nije vidljiva korisniku,

**onDestroy()** se poziva prije nego što je aktivnost uništena od strane sustava,

**onRestart()** se poziva kada je aktivnost zaustavljena i ponovno se pokreće.

Nije potrebno reagirati na sve ove metode.

*<?***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:id="@+id/linearLayout"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".MainActivity"**>  
  
 <**TextView  
 android:id="@+id/textView"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="150dp"  
 android:layout\_marginTop="150dp"  
 android:text="Hello Activity"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"** />  
  
</**androidx.constraintlayout.widget.ConstraintLayout**>

**package** com.example.myapplication;  
  
**import** androidx.appcompat.app.AppCompatActivity;  
  
**import** android.os.Bundle;  
**import** android.util.Log;  
**import** android.widget.Toast;  
  
  
**public class** MainActivity **extends** AppCompatActivity {  
 String **TAG** = **"Hello Activity"**;  
 @Override  
 **protected void** onCreate(Bundle savedInstanceState) {  
 **super**.onCreate(savedInstanceState);  
 setContentView(R.layout.***activity\_main***);  
  
 Log.*d*(**TAG**, **"-------"**);  
 Log.*d*(**TAG**, **"onCreate"**);  
 Toast.*makeText*(getApplicationContext(),**"oncreate"**,Toast.***LENGTH\_SHORT***).show();  
 }  
 @Override  
 **public void** onStart() {  
 **super**.onStart();  
 Log.*d*(**TAG**, **"onStart"**);  
 Toast.*makeText*(getApplicationContext(),**"onstart"**,Toast.***LENGTH\_SHORT***).show();  
 }  
  
 @Override  
 **public void** onRestart() {  
 **super**.onRestart();  
 Log.*d*(**TAG**, **"onRestart"**);  
 Toast.*makeText*(getApplicationContext(),**"onrestart"**,Toast.***LENGTH\_SHORT***).show();  
 }  
 @Override  
 **public void** onPause() {  
 **super**.onPause();  
 Log.*d*(**TAG**, **"onPause"**);  
 Toast.*makeText*(getApplicationContext(),**"onpause"**,Toast.***LENGTH\_SHORT***).show();  
 }  
 @Override  
 **public void** onResume() {  
 **super**.onResume();  
 Log.*d*(**TAG**, **"onResume"**);  
 Toast.*makeText*(getApplicationContext(),**"onresume"**,Toast.***LENGTH\_SHORT***).show();  
 }  
 @Override  
 **public void** onStop() {  
 **super**.onStop();  
 Log.*d*(**TAG**, **"onStop"**);  
 Toast.*makeText*(getApplicationContext(),**"onstop"**,Toast.***LENGTH\_SHORT***).show();  
 }  
 @Override  
 **public void** onDestroy() {  
 **super**.onDestroy();  
 Log.*d*(**TAG**, **"onDestroy"**);  
 Toast.*makeText*(getApplicationContext(),**"ondestroy"**,Toast.***LENGTH\_SHORT***).show();  
 }  
}

Dokumentacija za log datoteku

<https://developer.android.com/reference/android/util/Log>

Potražiti Manifest datoteku i log datoteku

C:\Users\Korisnik\AndroidStudioProjects\MyApplication2\app\src\main C:\Users\Korisnik\AndroidStudioProjects\MyApplication2\app\build\outputs\logs

Kreirati instalacijsku aplikaciju - APK

- BUild >BuildBundle(s)/APK(s)> Build APK(s).

Potražiti apk datoteku

C:\Users\Korisnik\AndroidStudioProjects\MyApplication2\app\build\intermediates\apk\debug

Kopirati APK datoteku na uređaj u direktorij Downloads(preuzimanja) i izvršiti instalaciju. Nakon instalacije ikona aplikacije se nalazi na desktopu uređaja na kraju popisa.

## Intenti

Kada aplikacija ima više od jedne aktivnosti, treba navigirati među njima. Za takvo povezivanje aktivnosti služe intenti. Neka naša aplikacija ima dvije aktivnosti, **glavna** i **druga**

1. **primjer**

*Activity\_main.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:id="@+id/relativeLayout"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"**>  
  
 <**Button  
 android:id="@+id/button1"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="20dp"  
 android:layout\_marginTop="60dp"  
 android:text="@string/button1"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"** />  
</**androidx.constraintlayout.widget.ConstraintLayout**>

*MainActivity.java*

**package** com.example.myapplication;  
  
**import** androidx.appcompat.app.AppCompatActivity;  
**import** android.content.Intent;  
  
**import** android.os.Bundle;  
**import** android.view.View;  
**public class** MainActivity **extends** AppCompatActivity {  
  
 @Override  
 **protected void** onCreate(Bundle savedInstanceState) {  
 **super**.onCreate(savedInstanceState);  
 setContentView(R.layout.***activity\_main***);  
  
 View v = findViewById(R.id.***button1***);  
 v.setOnClickListener(**new** View.OnClickListener() {  
 @Override  
 **public void** onClick(View v) {  
 **if** (v.getId() == R.id.***button1***) {  
  
 Intent intent = **new** Intent(v.getContext(), SecondActivity.**class**);  
  
 v.getContext().startActivity(intent);  
 ;  
 }  
 }  
 });  
  
  
 }  
}

*Activity\_second.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"** >  
  
  
 <**Button  
 android:id="@+id/button2"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="@string/button2"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintLeft\_toLeftOf="parent"  
 app:layout\_constraintRight\_toRightOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"** />  
  
  
</**androidx.constraintlayout.widget.ConstraintLayout**>

**package** com.example.myapplication;  
**import** android.content.Intent;  
**import** android.os.Bundle;  
**import** androidx.appcompat.app.AppCompatActivity;  
**import** android.view.View;  
  
  
  
  
**public class** SecondActivity **extends** AppCompatActivity {  
  
 @Override  
 **public void** onCreate(Bundle savedInstanceState) {  
 **super**.onCreate(savedInstanceState);  
 setContentView(R.layout.***activity\_second***);  
 View v = findViewById(R.id.***button2***);  
 v.setOnClickListener(**new** View.OnClickListener() {  
 @Override  
  
 **public void** onClick(View v) {  
 **if** (v.getId() == R.id.***button2***) {  
Intent intent = **new** Intent(v.getContext(), MainActivity.**class**);  
 v.getContext().startActivity(intent);  
 }  
 }  
  
 });  
 }  
}

*AndroidManifest.xlm*

*<?***xml version="1.0" encoding="utf-8"***?>*<**manifest xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:tools="http://schemas.android.com/tools"  
 package="com.example.myapplication"**>  
  
 <**application  
 android:allowBackup="true"  
 android:icon="@mipmap/ic\_launcher"  
 android:label="@string/app\_name"  
 android:roundIcon="@mipmap/ic\_launcher\_round"  
 android:supportsRtl="true"  
 android:theme="@style/Theme.MyApplication"**>  
 <**activity  
 android:name=".MainActivity"  
 android:exported="true"**>  
 <**intent-filter**>  
 <**action android:name="android.intent.action.MAIN"** />  
  
 <**category android:name="android.intent.category.LAUNCHER"** />  
 </**intent-filter**>  
 </**activity**>  
 <**activity  
 android:name=".SecondActivity"  
 android:label="Second Activity“**>  
 </**activity**>  
  
 </**application**>  
  
</**manifest**>

*Strings.xlm*

<**resources**>  
 <**string name="app\_name"**>My Application</**string**>  
 <**string name="button1"**>CLICK</**string**>  
 <**string name="button2"**>BACK</**string**>  
 </**resources**>

**2.primjer**

*Activity\_main*

*<?***xml version="1.0" encoding="utf-8"***?>*<**LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 android:layout\_width="fill\_parent"  
 android:layout\_height="fill\_parent"  
 android:orientation="vertical"** >  
 <**TextView  
 android:id="@+id/firstNumText"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="First Number"  
  
 android:textAppearance="?android:attr/textAppearanceSmall"** />  
 <**EditText  
 android:id="@+id/firstNum"  
 android:layout\_width="150dp"  
 android:layout\_height="40dp"  
 android:scaleType="centerInside"  
 android:ems="5"**>  
 </**EditText**>  
 <**TextView  
 android:id="@+id/secondNumText"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Second Number"  
 android:scaleType="centerInside"  
 android:textAppearance="?android:attr/textAppearanceSmall"** />  
 <**EditText  
 android:id="@+id/secondNum"  
 android:layout\_width="150dp"  
 android:layout\_height="40dp"  
 android:scaleType="centerInside"  
 android:ems="5"** />  
  
 <**Button  
 android:id="@+id/addButton"  
 android:layout\_width="147dp"  
 android:layout\_height="45dp"  
 android:text="Add"** />  
</**LinearLayout**>

*MainActivity*

**package** com.example.myapplication;  
  
**import** androidx.appcompat.app.AppCompatActivity;  
**import** android.content.Intent;  
  
**import** android.os.Bundle;  
**import** android.content.Intent;  
**import** android.os.Bundle;  
**import** android.view.View;  
**import** android.view.View.OnClickListener;  
**import** android.widget.Button;  
**import** android.widget.EditText;  
  
  
**public class** MainActivity **extends** AppCompatActivity {  
 EditText **firstNum**;  
 EditText **secondNum**;  
 Button **add**;  
 **int sum**;  
  
 @Override  
 **public void** onCreate(Bundle savedInstanceState) {  
 **super**.onCreate(savedInstanceState);  
 setContentView(R.layout.***activity\_main***);  
 **firstNum** = (EditText) findViewById(R.id.***firstNum***);  
 **secondNum** = (EditText) findViewById(R.id.***secondNum***);  
 **add** = (Button) findViewById(R.id.***addButton***);  
 **add**.setOnClickListener(**new** AddButtonClickHandler());  
 }  
  
 **public class** AddButtonClickHandler **implements** OnClickListener {  
  
 **public void** onClick(View view) {  
 **int** num1 = Integer.*parseInt*(**firstNum**.getText().toString());  
 **int** num2 = Integer.*parseInt*(**secondNum**.getText().toString());  
  
 Intent intent = **new** Intent(view.getContext(), SecondActivity.**class**);  
  
 view.getContext().startActivity(intent);  
  
 intent.putExtra(**"SUM"**, num1 + **"+"** + num2 + **"="** + (num1 + num2));  
 startActivity(intent);  
 }  
 };  
}

}

*Activity\_second*

*<?***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:orientation="vertical"** >  
 <**TextView  
 android:id="@+id/resultView"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:textAppearance="?android:attr/textAppearanceLarge" android:text="TEXT"** />  
</**LinearLayout**>

*SecondActivity.java*

**package** com.example.myapplication;  
  
  
  
**import** android.content.Intent;  
**import** android.os.Bundle;  
**import** android.widget.TextView;  
  
**import** androidx.appcompat.app.AppCompatActivity;  
  
**public class** SecondActivity **extends** AppCompatActivity {  
 @Override  
 **public void** onCreate(Bundle savedInstanceState) {  
 TextView result;  
 **super**.onCreate(savedInstanceState);  
 setContentView(R.layout.***activity\_second***);  
 result = (TextView) findViewById(R.id.***resultView***);  
 Intent intent = getIntent();  
 String sum = (String) intent.getSerializableExtra(**"SUM"**);  
 result.setText(sum);  
 }  
  
}

*AndroidManifest.xml*

*<?***xml version="1.0" encoding="utf-8"***?>*<**manifest xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:tools="http://schemas.android.com/tools"  
 package="com.example.myapplication"**>  
  
 <**application  
 android:allowBackup="true"  
 android:icon="@mipmap/ic\_launcher"  
 android:label="@string/app\_name"  
 android:roundIcon="@mipmap/ic\_launcher\_round"  
 android:supportsRtl="true"  
 android:theme="@style/Theme.MyApplication"**>  
 <**activity  
 android:name=".MainActivity"  
 android:exported="true"**>  
 <**intent-filter**>  
 <**action android:name="android.intent.action.MAIN"** />  
  
 <**category android:name="android.intent.category.LAUNCHER"** />  
 </**intent-filter**>  
 </**activity**>  
 <**activity  
 android:name=".SecondActivity"  
 android:label="Second Activity"  
 tools:ignore="MissingClass"**>  
 </**activity**>  
  
 </**application**>  
  
</**manifest**>

<**resources**>  
 <**string name="app\_name"**>My Application</**string**>

</**resources**>

1. *primjer gumb za povratak u glavnu aktivnost*

*Activity\_second, SecondActivity*

*<?***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:orientation="vertical"** >  
 <**TextView  
 android:id="@+id/resultView"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:textAppearance="?android:attr/textAppearanceLarge" android:text="TEXT"** />  
  
 <**Button  
 android:id="@+id/button"  
 android:layout\_width="124dp"  
 android:layout\_height="wrap\_content"  
 android:text="BACK"** />  
  
</**LinearLayout**>

**package** com.example.myapplication;  
  
**import** androidx.appcompat.app.AppCompatActivity;  
  
**import** android.content.Intent;  
**import** android.os.Bundle;  
**import** android.view.View;  
**import** android.widget.TextView;  
  
  
**public class** SecondActivity **extends** AppCompatActivity {  
  
 @Override  
 **protected void** onCreate(Bundle savedInstanceState) {  
 **super**.onCreate(savedInstanceState);  
 setContentView(R.layout.***activity\_second***);  
 TextView result = (TextView) findViewById(R.id.***resultView***);  
 Intent intent1 = getIntent();  
 String sum = (String) intent1.getSerializableExtra(**"SUM"**);  
 result.setText(sum);  
  
 View v = findViewById(R.id.***button***);  
 v.setOnClickListener(**new** View.OnClickListener() {  
  
  
 **public void** onClick(View v) {  
 **if** (v.getId() == R.id.***button***) {  
  
  
 Intent intent = **new** Intent(v.getContext(), MainActivity.**class**);  
 v.getContext().startActivity(intent);  
 }  
 }  
  
  
 });  
 }  
}

Završni radovi:

1. Izrada Kviza – Igor, Antonio
2. Izrada planera,
3. Korištenje senzora na mobilnom uređaju
4. Baza podataka

DZ. Igru BlackJack (ili neku drugu DZ) provesti kroz dvije aktivnosti glavnu i aktivnost br 2.