Univerzitet u Beogradu
Fakultet organizacionih nauka
Laboratorija za elektronsko poslovanje

Univerzalni konvertor

Seminarski rad iz Mobilnog poslovanja

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1. Sadržaj

2. Korisnički zahtev

Ono što korisnik od nas zahteva jeste alat za pretvaranje različitih mernih jedinica i valuta koji može omogućiti lakše rešavanje nekog problema bilo da putujete ili rešavate neki zadatak.
UniCo konvertor je konvertor za težinu, dužinu, temperaturu, vreme , kao i za valute.
Vrlo je jednostavan za korišćenje.

Prvo je potrebno izabrati veličinu koju želite da kovertujete na početnoj formi.

Detaljnija specifikacija:

1. Konverzija težine- pretvaranje kilograma, grama, miligrama, unci, funti, tona I mikrograma.
2. Konverzija dužine-pretvaranje centimetara, stopa, inča, kilometara, liga, metara, mikroinča, milimetara, jardi , milja.
3. Konverzija temperature- Celzijus, Farenhajt, Kelvin.
4. Konverzija vremena- dani, sati, nedelje, meseci, godine, decenije,minute, sekunde, milisekunde.
5. Konverzija valuta- 166 valuta je dostupno za konverziju

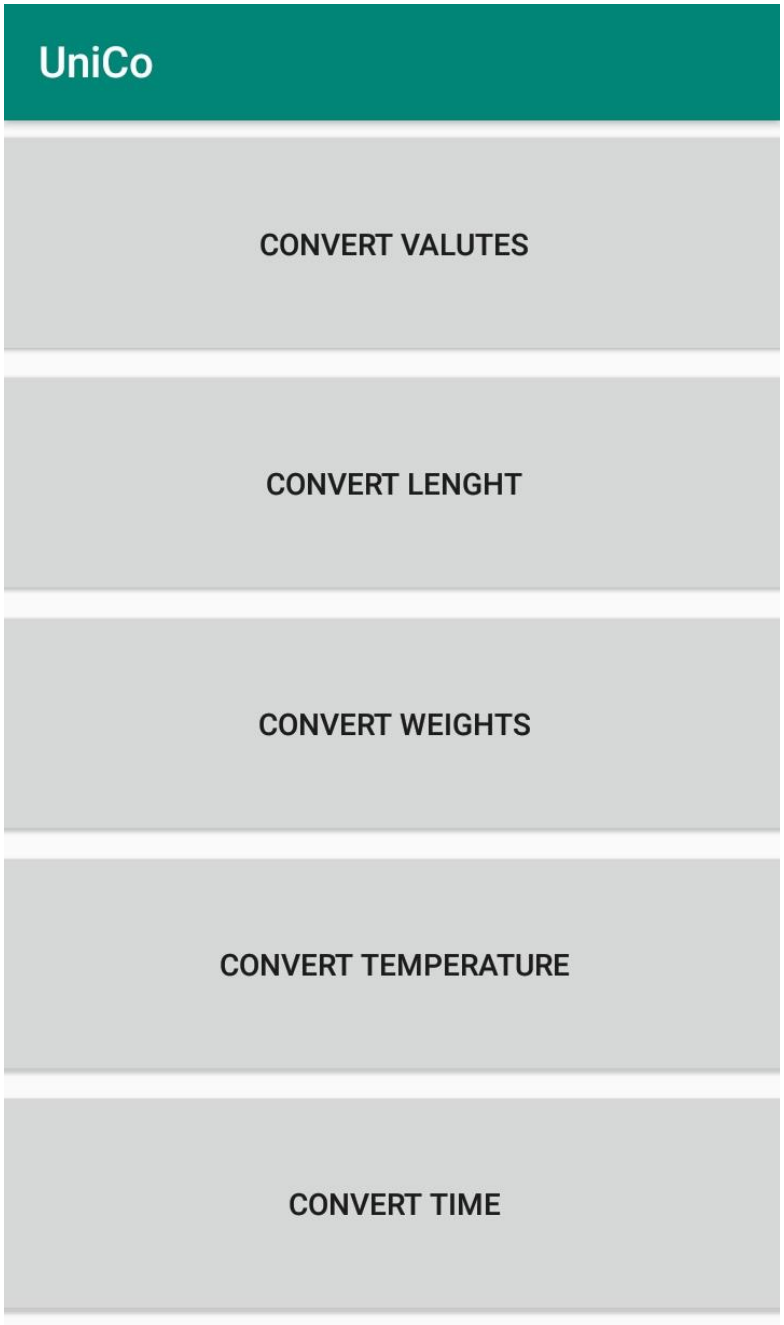
3. Implementacija

Klijentska aplikacija je pisana android tehnologijom i sastoji se od dva paketa.

1. Model: Ovde se nalaze klase koje predstavljaju enumeraciju odnosno definisane jedinice dostupne za konverziju
2. UI: Ovde se nalaze kontroleri ekrana, to su sve Activity-ji. Početni ekran je MainActivity koji ima pristup svim ostalim.

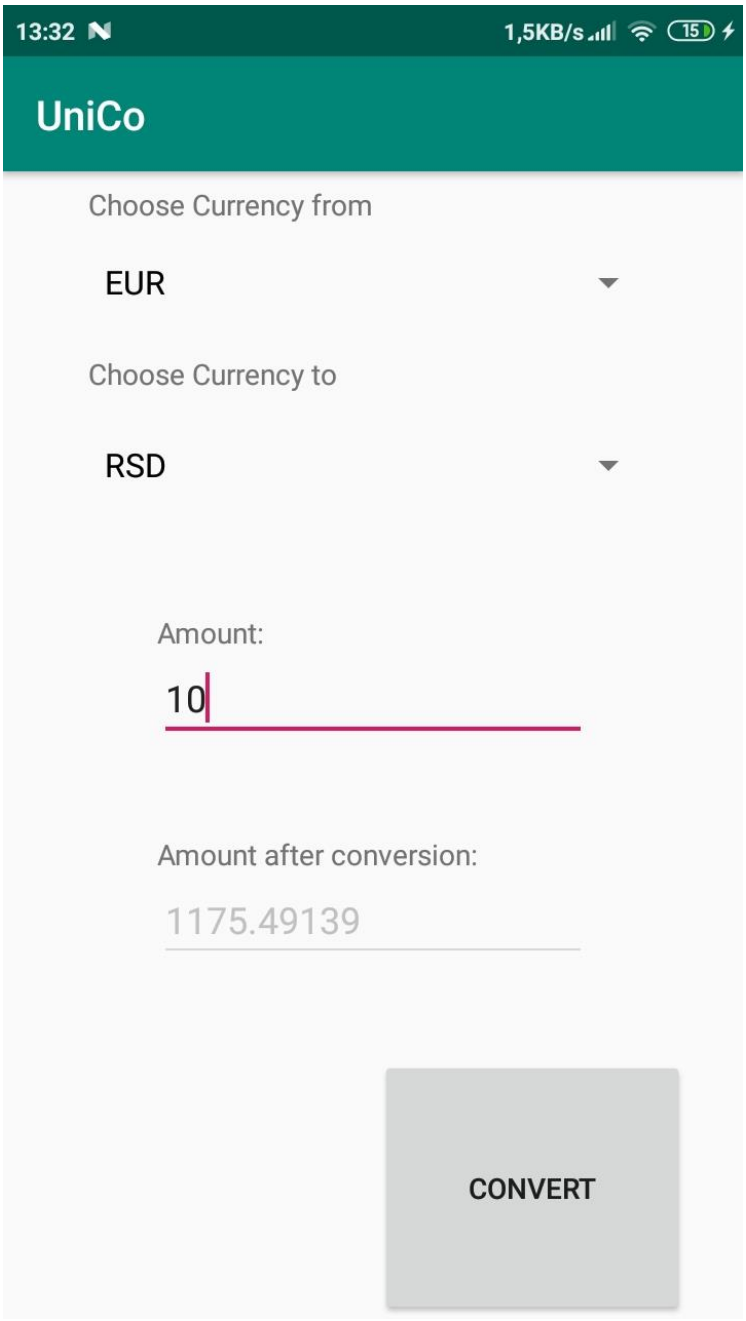
4. Dizajn korisničke aplikacije

Glavna forma koja se prikazuje korisniku jeste forma za izbor jedinice koju će konvertovati.



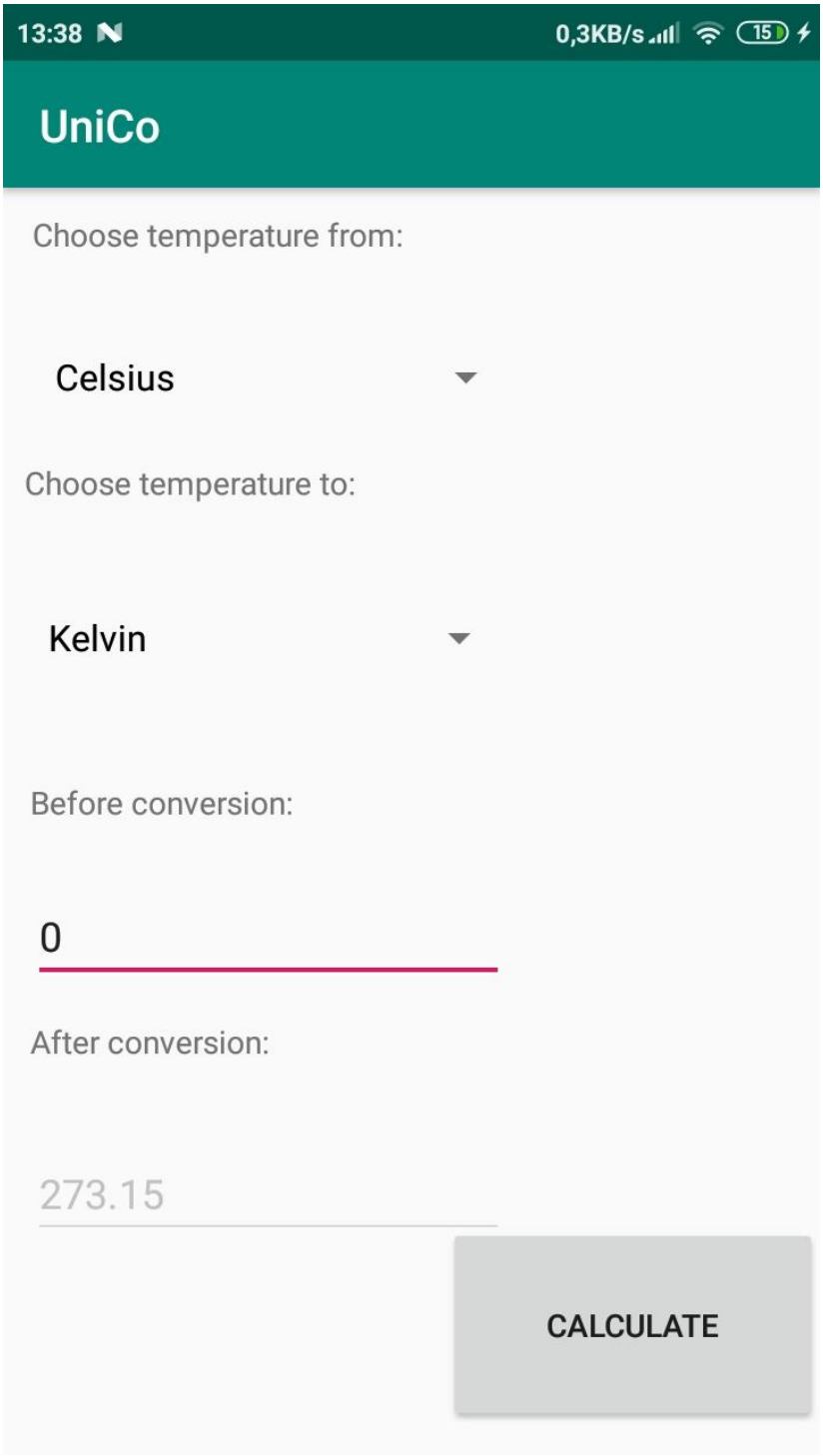
Slika 1 Main activity

Nakon napravljenog izbora otvara se jedan od pet novih Activity-ja.

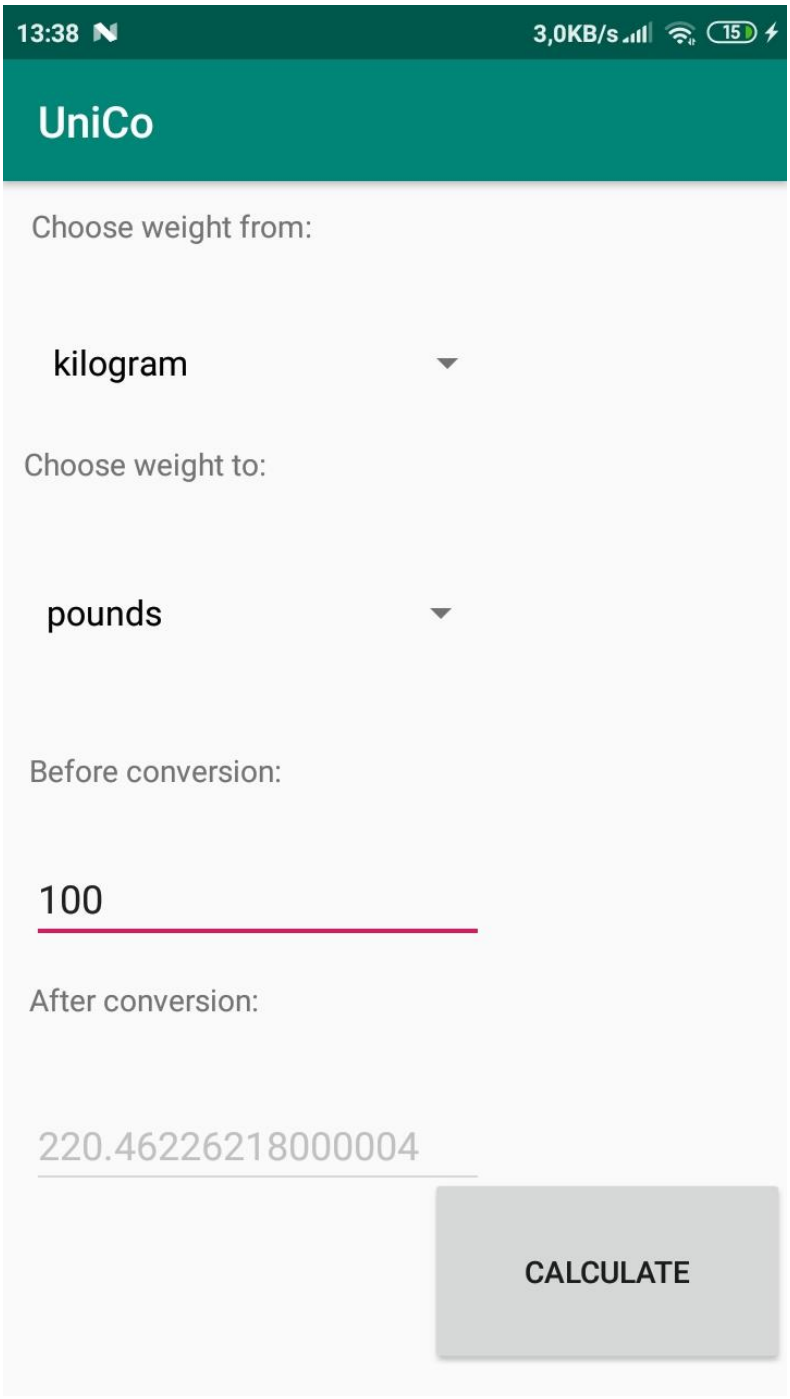


Slika 2 Konverzija valuta

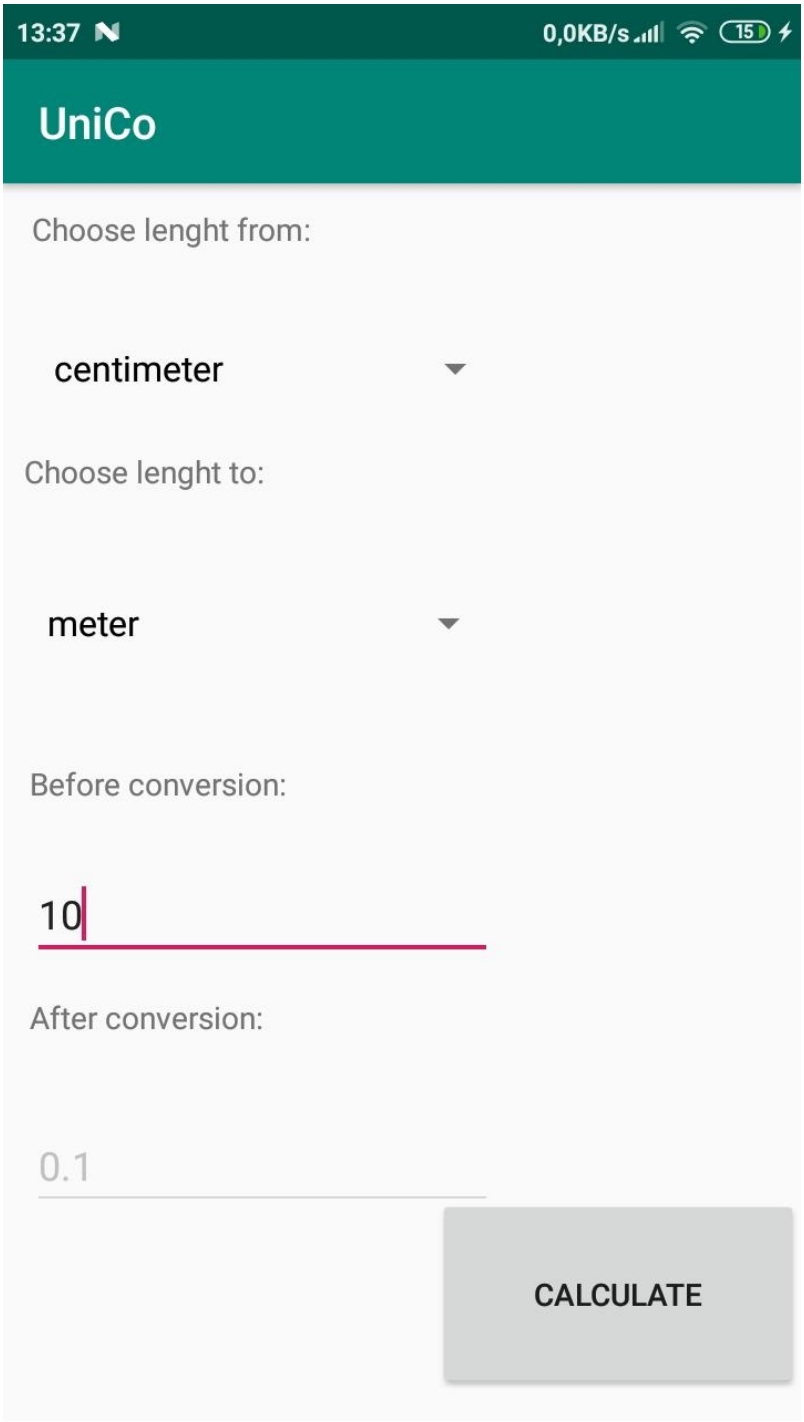
Slika 3 Konverzija vremenskih jedinica



Slika 4 Konverzija temperature



Slika 5 Konverzija težine



Slika 6 Konverzija dužine

5. Reprezentativni delovi koda

1. Modeli

```java
package com.example.drugidomaci.model;

public enum Lenght {
    centimeter,
    feet,
    inch,
    kilometer,
    league,
    meter,
    microinch,
    mile,
    milimeter,
    yard;
    public double value(){
        switch (this){
            case centimeter:return 1;
            case feet: return 0.03280839895;
            case inch: return 0.3937007874;
            case kilometer:return 0.00001;
            case league:return 0.0000020712331461;
            case meter: return 0.01;
            case microinch: return 393700.7874;
            case mile: return  0.0000062137119224;
            case milimeter: return 10;
            case yard: return  0.010936132983;
        }
        return 0;
    }

}
```

Slika 7 Model- Dužine

```java
package com.example.drugidomaci.model;

public enum Temperature {
    Celsius,
    Fahrenheit,
    Kelvin;


}
```

Slika 8 Model-Temperature

```java
package com.example.drugidomaci.model;

public enum Time {
    milisecond,
    second,
    minute,
    hour,
    day,
    week,
    month,
    year,
    decade;
    public double value(){
        switch (this){
            case day:return 1;
            case milisecond: return 86400000;
            case second: return 86400;
            case minute:return 1440;
            case hour:return 24;
            case week: return 0.14285714286;
            case month: return 0.032876712329;
            case year: return  0.0027397260274;
            case decade: return 0.00027397260274;
        }
        return 0;
    }
}

```

Slika 9 Model-Vreme

```java
package com.example.drugidomaci.model;

public enum Weight {
    kilogram,
    miligram,
    ounces,
    pounds,
    tons,
    micrograms,
    gram,
    ;
    public double value(){
        switch (this){
            case kilogram:return 0.001;
            case gram: return 1;
            case miligram: return 1000;
            case ounces:return 0.03527396195;
            case pounds:return 0.0022046226218;
            case tons: return 0.000001;
            case micrograms: return 1000000;

        }
        return 0;
    }

}

```

Slika 10 Model-Težine

```
1   package com.example.drugidomaci.model;
2
3   import java.util.Arrays;
4
5   public enum Currency {
6       AED,
7       AFN,
8       ALL,
9       AMD,
10      ANG,
11      AOA,
12      ARS,
13      AUD,
14      AWG,
15      AZN,
16      BAM,
17      BBD,
18      BDT,
19      BGN,
20      BHD,
21      BIF,
22      BMD,
23      BND,
24      BOB,
25      BRL,
26      BSD,
27      BTC,
28      BTN,
29      BWP,
30      BYN,
31      BYR,
32      BZD,
33      CAD,
34      CDF,
```

Slika 11 Model-Valute

2. UI

```java
package com.example.drugidomaci;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;

import android.widget.Button;
public class MainActivity extends AppCompatActivity {

    Button valute;
    Button duzine;
    Button tezine;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.drugi);
        valute= findViewById(R.id.button2);
        duzine= findViewById(R.id.button3);
        tezine=findViewById(R.id.button4);
        tezine=findViewById(R.id.button5);
    }
    public void naKlik(View view) {
        Intent activityChangeIntent = new Intent(this, DrugiActivity.class);
        this.startActivity(activityChangeIntent);
    }
    public void naKlik2(View view) {
        Intent activityChangeIntent = new Intent(this, Third.class);
        this.startActivity(activityChangeIntent);
    }
    public void naKlik3(View view) {
        Intent activityChangeIntent = new Intent(this, Forth.class);
        this.startActivity(activityChangeIntent);
    }
    public void naKlik4(View view) {
        Intent activityChangeIntent = new Intent(this, Fifth.class);
        this.startActivity(activityChangeIntent);
    }
    public void naKlik5(View view) {
        Intent activityChangeIntent = new Intent(this, Sixth.class);
        this.startActivity(activityChangeIntent);
    }

}
```

Slika 12 Main Activity

```
public class DrugiActivity extends AppCompatActivity {
    Spinner spinnerfrom;
    Spinner spinnerto;
    EditText numberFrom;
    EditText numberTo;
    Button button;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        spinnerfrom=findViewById(R.id.spinner);
        spinnerto=findViewById(R.id.spinner3);
        numberFrom=findViewById(R.id.editText);
        numberTo=findViewById(R.id.editText2);
        button= findViewById(R.id.button);
        List<Currency> valute=Arrays.asList(Currency.class.getEnumConstants());
       ArrayAdapter<Currency>adapter= new ArrayAdapter<Currency>(this,android.R.layout.simple_spinner_dropdown_item,valute);
       spinnerfrom.setAdapter(adapter);
        spinnerto.setAdapter(adapter);
        button.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                metoda();
            }
        });

    }

    public void metoda(){
        int broj=1;
        try {
            broj = Integer.valueOf(numberFrom.getText().toString());
        }
        catch (NumberFormatException e){
        numberFrom.setText(String.valueOf(1));
        }
        Currency curr= (Currency)spinnerfrom.getSelectedItem();
        Currency to= (Currency) spinnerto.getSelectedItem();
        Vrati vrati= new Vrati(curr,to,broj);
        vrati.execute();


    }
```

Slika 13 Second Activity

```
public class Vrati extends AsyncTask<String, Integer, JSONObject> {
    Currency c1;
    Currency c2;
    int broj;
    Vrati(Currency c1,Currency c2,int broj){
        this.c1=c1;
        this.c2=c2;
this.broj=broj;

    }
    @Override
    protected JSONObject doInBackground(String... strings) {
        try {
            publishProgress(50);
            JSONObject json;

          URL url = new URL("https://free.currconv.com/api/v7/convert?q="+c1.name()+"_"+c2.name()+"&compact=ultra&apiKey=47508239836cd7e70e22");
            HttpURLConnection connection = (HttpURLConnection) url.openConnection();
            connection.setRequestMethod("GET");
            BufferedReader bufferedReader = new BufferedReader(new InputStreamReader(connection.getInputStream()));
            if (connection.getResponseCode() == HttpURLConnection.HTTP_OK) {
                String line = bufferedReader.readLine();
                json=new JSONObject(line);
                return json;

            }
        } catch (ArrayIndexOutOfBoundsException e) {
          } catch (Exception ex) { }
        return null;
    }


    @Override
    protected void onPostExecute(final JSONObject jsonObjekat) {
        super.onPostExecute(jsonObjekat);
        double str= 0;
        try {
            str = jsonObjekat.getDouble(c1.name()+"_"+c2.name());
        } catch (JSONException e) {
            e.printStackTrace();
        }
        double numero=str*broj;
        numberTo.setText(String.valueOf(numero));

    }
}
```

Slika 14 Second Activity

```
public class Third extends AppCompatActivity {
    Spinner spinnerfrom;
    Spinner spinnerto;
    EditText numberFrom;
    EditText numberTo;
    Button button;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_third);
        spinnerfrom=findViewById(R.id.spinner2);
        spinnerto=findViewById(R.id.spinner4);
        numberFrom=findViewById(R.id.editText3);
        numberTo=findViewById(R.id.editText4);
        button= findViewById(R.id.button4);
        List<Lenght> duzine= Arrays.asList(Lenght.class.getEnumConstants());
        ArrayAdapter<Lenght> adapter1= new ArrayAdapter<Lenght>(this,android.R.layout.simple_spinner_dropdown_item,duzine);
        spinnerfrom.setAdapter(adapter1);
        spinnerto.setAdapter(adapter1);
        button.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                metoda();
            }
        });
    }

    private void metoda() {
            double broj=1;
            try {
                broj = Double.valueOf(numberFrom.getText().toString());
            }
            catch (NumberFormatException e){
                numberFrom.setText(String.valueOf(1));
            }
            Lenght curr= (Lenght) spinnerfrom.getSelectedItem();
            Lenght to= (Lenght) spinnerto.getSelectedItem();

            numberTo.setText(String.valueOf(broj*to.value()/curr.value()));


        }
```

Slika 15 Third Activity

```
public class Forth extends AppCompatActivity {
    Spinner spinnerfrom;
    Spinner spinnerto;
    EditText numberFrom;
    EditText numberTo;
    Button button;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_forth2);
        spinnerfrom=findViewById(R.id.spinner2);
        spinnerto=findViewById(R.id.spinner4);
        numberFrom=findViewById(R.id.editText3);
        numberTo=findViewById(R.id.editText4);
        button= findViewById(R.id.button4);
        List<Weight> tezine= Arrays.asList(Weight.class.getEnumConstants());
        ArrayAdapter<Weight> adapter1= new ArrayAdapter<Weight>(this,android.R.layout.simple_spinner_dropdown_item,tezine);
        spinnerfrom.setAdapter(adapter1);
        spinnerto.setAdapter(adapter1);
        button.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                metoda();
            }
        });
    }
    private void metoda() {
        double broj=1;
        try {
            broj = Double.valueOf(numberFrom.getText().toString());
        }
        catch (NumberFormatException e){
            numberFrom.setText(String.valueOf(1));
        }
        Weight curr= (Weight) spinnerfrom.getSelectedItem();
        Weight to= (Weight) spinnerto.getSelectedItem();

        numberTo.setText(String.valueOf(broj*to.value()/curr.value()));


    }
}
```

Slika 16 Forth Activity

```
public class Fifth extends AppCompatActivity {

    Spinner spinnerfrom;
    Spinner spinnerto;
    EditText numberFrom;
    EditText numberTo;
    Button button;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_fifth2);
        spinnerfrom=findViewById(R.id.spinner2);
        spinnerto=findViewById(R.id.spinner4);
        numberFrom=findViewById(R.id.editText3);
        numberTo=findViewById(R.id.editText4);
        button= findViewById(R.id.button4);
        List<Temperature> tezine= Arrays.asList(Temperature.class.getEnumConstants());
        ArrayAdapter<Temperature> adapter1= new ArrayAdapter<Temperature>(this,android.R.layout.simple_spinner_dropdown_item,tezine);
        spinnerfrom.setAdapter(adapter1);
        spinnerto.setAdapter(adapter1);
        button.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                metoda();
            }
        });
    }
    private void metoda() {
        double broj=1;
        try {
            broj = Double.valueOf(numberFrom.getText().toString());
        }
        catch (NumberFormatException e){
            numberFrom.setText(String.valueOf(1));
        }


        double temp=0;

        Temperature curr= (Temperature) spinnerfrom.getSelectedItem();
        Temperature to= (Temperature) spinnerto.getSelectedItem();
        if(curr.equals(to)){
            numberTo.setText(String.valueOf(broj));
            return;
        }
```

Slika 17 Fifth Activity

```
public class Sixth extends AppCompatActivity {
    Spinner spinnerfrom;
    Spinner spinnerto;
    EditText numberFrom;
    EditText numberTo;
    Button button;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_sixth2);
        spinnerfrom=findViewById(R.id.spinner2);
        spinnerto=findViewById(R.id.spinner4);
        numberFrom=findViewById(R.id.editText3);
        numberTo=findViewById(R.id.editText4);
        button= findViewById(R.id.button4);
        List<Time> tezine= Arrays.asList(Time.class.getEnumConstants());
        ArrayAdapter<Time> adapter1= new ArrayAdapter<Time>(this,android.R.layout.simple_spinner_dropdown_item,tezine);
        spinnerfrom.setAdapter(adapter1);
        spinnerto.setAdapter(adapter1);
        button.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                metoda();
            }
        });
    }
    private void metoda() {
        double broj=1;
        try {
            broj = Double.valueOf(numberFrom.getText().toString());
        }
        catch (NumberFormatException e){
            numberFrom.setText(String.valueOf(1));
        }
        Time curr= (Time) spinnerfrom.getSelectedItem();
        Time to= (Time) spinnerto.getSelectedItem();

        numberTo.setText(String.valueOf(broj*to.value()/curr.value()));
```

Slika 18 Sixth Activity