Gross Wage

Software Documentation

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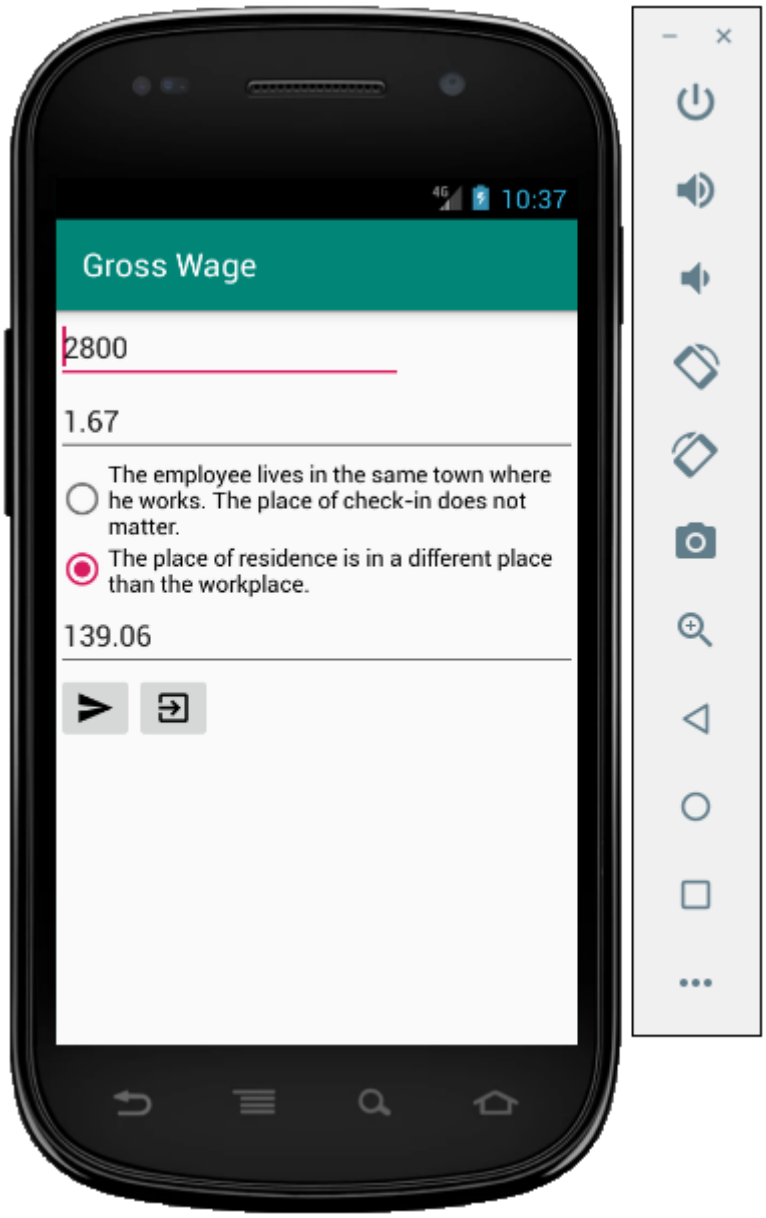
Introduction

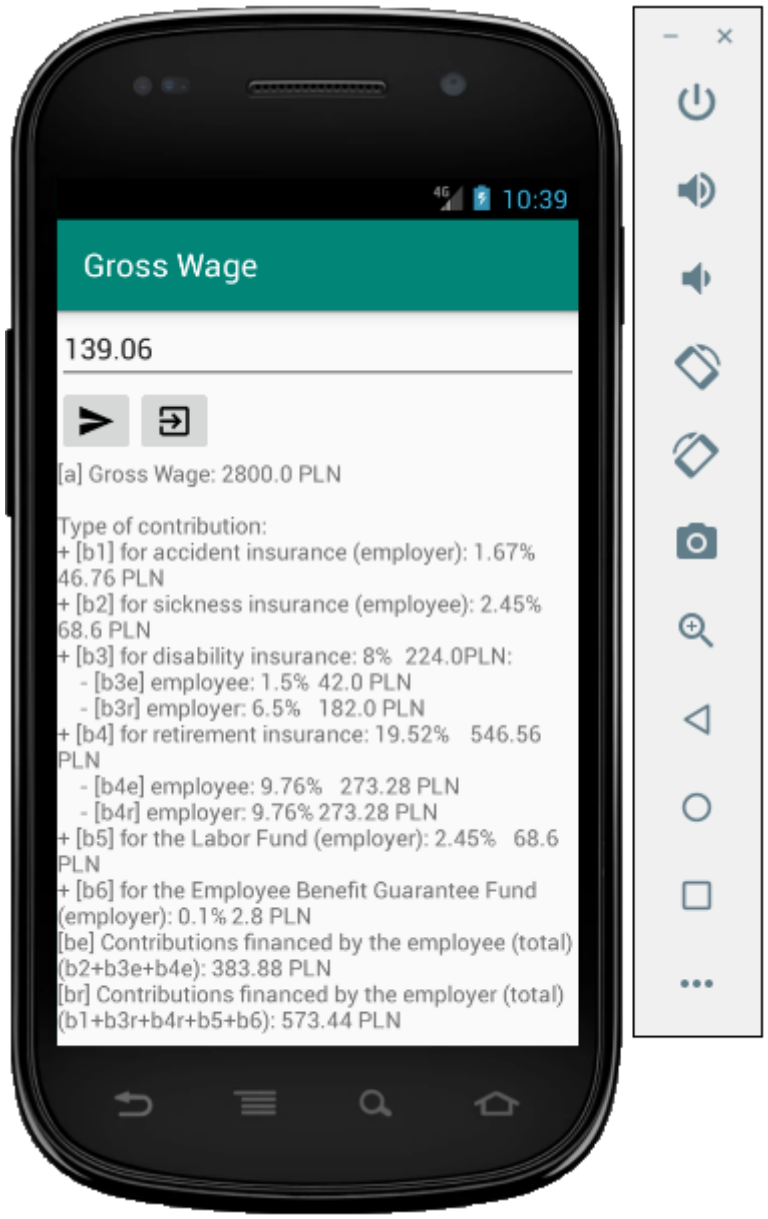
This software documentation includes: description of the application's operation, what is needed for use, algorithms used, interface description and source code description. This application is used to calculate the net salary, contributions, advances belonging to the costs incurred by the employee, as well as contributions, i.e. the total cost of the employee's maintenance by the employer in Poland.

Describing of the application’s operation

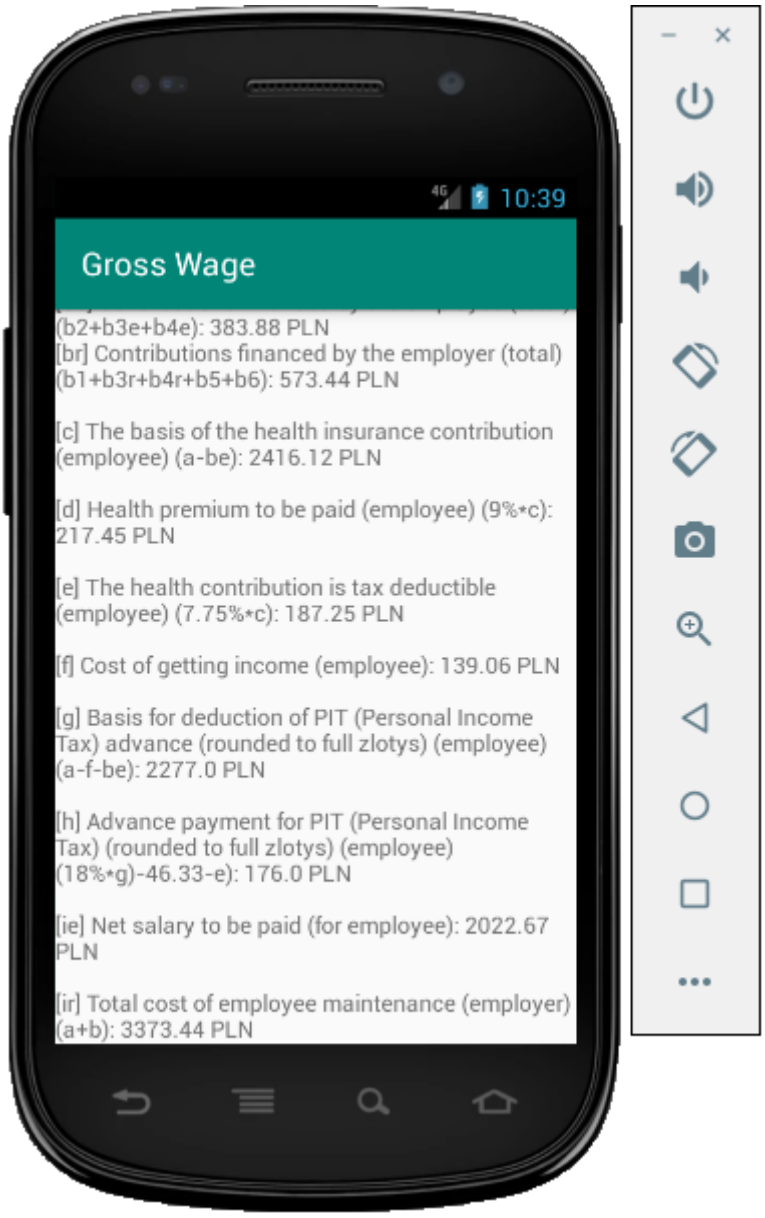


Drawing 1: The beginning of the application's operation [own study]

After launching the application, the default gross salary is PLN 2,800 in the text field, i.e. the minimum salary for 1st January 2021. The user can enter his own value in this text box. The second value is the amount of the accident insurance contribution paid by the employer. There is a default value in this text box which can be between 0.67 and 3.86%. When the application starts, the value 1.67% is loaded. The third value to edit is tax deductible. He chooses with radio buttons where he lives. He may live in the same or a different town than the workplace. Below the radio buttons there is a text field where the default value also changes. It is the value of the tax deductible cost, which, depending on the location, shows its minimum value. The user can change it to a higher one.



Drawing 2: Calculation result part 1 [own study]



Drawing 3: Calculation result part 2 [own study]

After confirming with the button with the send icon, the calculation result appears below. There are values for each individual premium and advance, as well as the net salary for the employee, as well as the employee's maintenance costs and advance payments borne by the employer, plus the total. The application does not have any security for text fields with gross wages, accident insurance premiums and tax deductible costs. The user must make sure that they are not empty!

This is the correct use of the program. There may be coding errors that have not been detected by the developer.

What is needed for use?

The application requires installation on the Android operating system with a minimum API level Android 4.0 (IceCreamSandwich), i.e. on all mobile devices with this system.

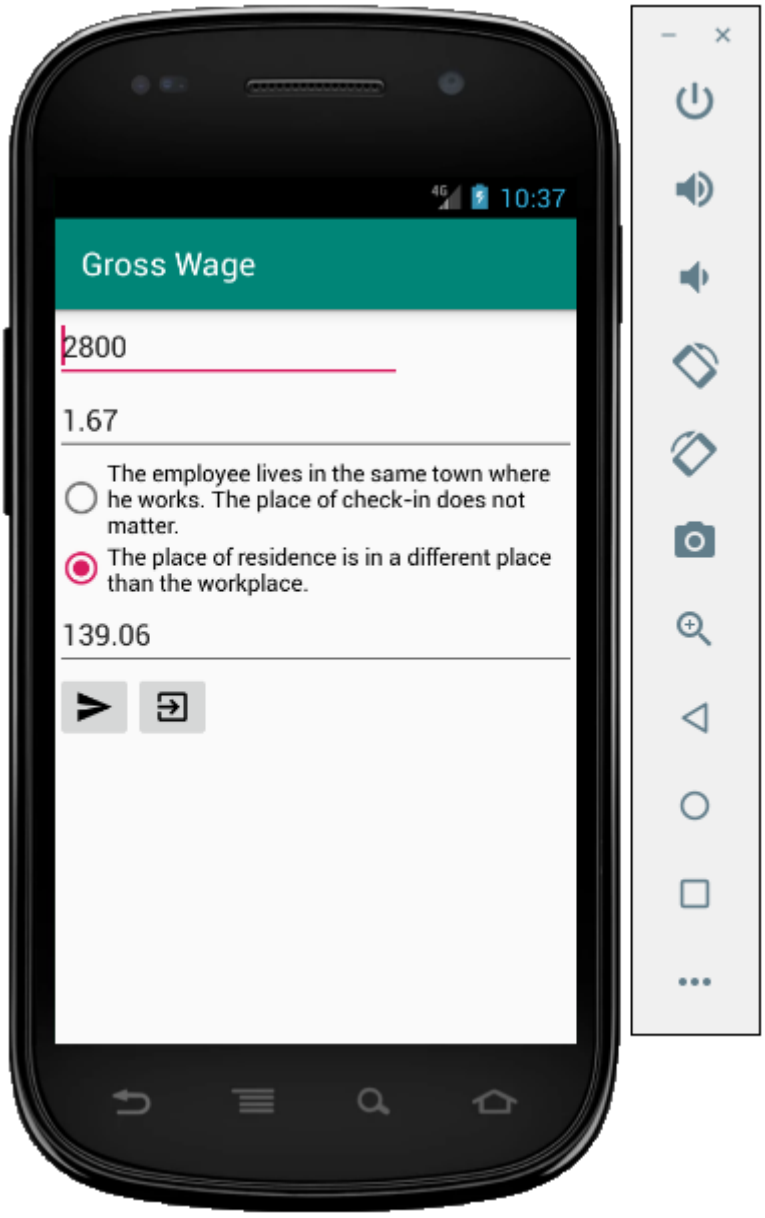
Algorithm used

The calculation of the net salary, as well as the amount of contributions, advances and the cost of income that the employee covers, as well as the amount of contributions and the total cost of the employee's maintenance by the employer, follows a specific algorithm.

The input data are: gross remuneration, the amount of the accident insurance contribution and the place of residence in relation to the location of the workplace, along with the value of the tax deductible cost that depends on it.

The remaining values of the variables and the result of interest to the user depend on the calculation scheme, which can be seen from the displayed calculation effects in the application.

Interface description



Drawing 4: Graphical interface [own study]

The interface has the basic components available in the Android Studio development environment: TextView, ImageButton, RadioButton and EditText.

Source code description

The project was made in the Java programming language, in the Android Studio programming environment. All work was done on the Windows 10 operating system. The application's source code looks like this.

```
package com.example.grosswage;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.ImageButton;
import android.widget.RadioButton;
import java.text.DecimalFormat;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {
    EditText eTGW,eTcogi,eTaip;
    RadioButton rBs,rBo;
    ImageButton imgbtnc,imgbtne;
    TextView tv;
    double
a=0,b1=0,b2=0,b3=0,b3e=0,b3r=0,b4=0,b4e=0,b4r=0,b5=0,b6=0,be=0,br=0,
c=0,d=0,e=0,f=0,g=0,h=0,ie=0,ir=0;

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

        initializecomponents();

        imgbtnc.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                try{
                    calculate();
                }catch (Exception e){
                    tv.setText(e.getMessage());
                }finally {
                    screenshow();
                }
            }
        });

        imgbtne.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                finish();
            }
        });
    }
```

```
    public void initializecomponents(){
        eTGW=findViewById(R.id.eTGW);
        rBs=findViewById(R.id.rBs);
        rBs.setChecked(false);
        rBo=findViewById(R.id.rBo);
        rBo.setChecked(true);
        eTcogi=findViewById(R.id.eTcogi);
        eTaip=findViewById(R.id.eTaip);
        eTaip.setHint("From 0.67 to 3.86 %");
        eTaip.setText("1.67");
        setf();
        imgbtnc=findViewById(R.id.imgbtnc);
        imgbtne=findViewById(R.id.imgbtne);
        tv=findViewById(R.id.tv);
    }

    public void calculate(){
        a=Double.parseDouble(eTGW.getText().toString());

b1=Double.parseDouble(String.format("%.2f",a*Double.parseDouble(eTai
p.getText().toString())/100));
        b2=Double.parseDouble(String.format("%.2f",a*2.45/100));
        b3=Double.parseDouble(String.format("%.2f",a*8/100));
        b3e=Double.parseDouble(String.format("%.2f",a*1.5/100));
        b3r=Double.parseDouble(String.format("%.2f",a*6.5/100));
        b4=Double.parseDouble(String.format("%.2f",a*19.52/100));
        b4e=Double.parseDouble(String.format("%.2f",a*9.76/100));
        b4r=Double.parseDouble(String.format("%.2f",a*9.76/100));
        b5=Double.parseDouble(String.format("%.2f",a*2.45/100));
        b6=Double.parseDouble(String.format("%.2f",a*0.1/100));
        be=Double.parseDouble(String.format("%.2f",b2+b3e+b4e));

br=Double.parseDouble(String.format("%.2f",b1+b3r+b4r+b5+b6));
        c=Double.parseDouble(String.format("%.2f",a-be));
        d=Double.parseDouble(String.format("%.2f",c*9/100));
        e=Double.parseDouble(String.format("%.2f",c*7.75/100));

f=Double.parseDouble(String.format("%.2f",Double.parseDouble(eTcogi.
getText().toString())));
        //g=Double.parseDouble(String.format("%f",a-f-be));
        g=roundTwoDecimals(a-f-be);
        //h=Double.parseDouble(String.format("%f",(18*g/100)-46.33-
e));
        h=roundTwoDecimals((18*g/100)-46.33-e);
        ie=Double.parseDouble(String.format("%.2f",a-be-d-h));
        ir=Double.parseDouble(String.format("%.2f",a+br));
    }

    public void setf(){
```

```
        if(rBs.isChecked()){
            eTcogi.setText("111.25");
            eTcogi.setHint("From 111.25 to 1335 PLN / month");
        }
        else if(rBo.isChecked()){
            eTcogi.setText("139.06");
            eTcogi.setHint("From 139.06 to 1668.72 PLN / month ");
        }
    }

    public void screenshow(){
        tv.setText("");
        tv.setText(tv.getText().toString()+"[a] Gross Wage: "+a+"
PLN\r\n\r\n"+
                "Type of contribution:"+"\r\n"+
                "+ [b1] for accident insurance (employer):
"+eTaip.getText().toString()+"%\t"+b1+" PLN\r\n"+
                "+ [b2] for sickness insurance (employee):
2.45%\t"+b2+" PLN\r\n"+
                "+ [b3] for disability insurance:
8%\t"+b3+"PLN:\r\n"+
                "\t- [b3e] employee: 1.5%\t"+b3e+" PLN\r\n"+
                "\t- [b3r] employer: 6.5%\t"+b3r+" PLN\r\n"+
                "+ [b4] for retirement insurance: 19.52%\t"+b4+"
PLN\r\n"+
                "\t- [b4e] employee: 9.76%\t"+b4e+" PLN\r\n"+
                "\t- [b4r] employer: 9.76%\t"+b4r+" PLN\r\n"+
                "+ [b5] for the Labor Fund (employer): 2.45%\t"+b5+"
PLN\r\n"+
                "+ [b6] for the Employee Benefit Guarantee Fund
(employer): 0.1%\t"+b6+" PLN\r\n"+
                "[be] Contributions financed by the employee (total)
(b2+b3e+b4e): "+be+" PLN\r\n"+
                "[br] Contributions financed by the employer (total)
(b1+b3r+b4r+b5+b6): "+br+" PLN\r\n\r\n"+
                "[c] The basis of the health insurance contribution
(employee) (a-be): "+c+" PLN\r\n\r\n"+
                "[d] Health premium to be paid (employee) (9%*c):
"+d+" PLN\r\n\r\n"+
                "[e] The health contribution is tax deductible
(employee) (7.75%*c): "+e+" PLN\r\n\r\n"+
                "[f] Cost of getting income (employee): "+f+"
PLN\r\n\r\n"+
                "[g] Basis for deduction of PIT (Personal Income
Tax) advance (rounded to full zlotys) " +
                        "(employee) (a-f-be): "+g+" PLN\r\n\r\n"+
                "[h] Advance payment for PIT (Personal Income Tax)
(rounded to full zlotys) "+
                "(employee) (18%*g)-46.33-e): "+h+" PLN\r\n\r\n"+
```

```
                "[ie] Net salary to be paid (for employee): "+ie+"
PLN\r\n\r\n"+
                "[ir] Total cost of employee maintenance (employer)
(a+b): "+ir+" PLN");
    }

    public double roundTwoDecimals(double d)
    {
        DecimalFormat twoDForm = new DecimalFormat("#"); //#.## two
decimal places
        return Double.valueOf(twoDForm.format(d));
    }
}
```

Listing 1: The source code for MainActivity.java file [own study]

```
<?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">

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

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

            <EditText
                android:id="@+id/eTGW"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:ems="10"
                android:inputType="numberDecimal"
                android:text="2800"
                tools:text="Enter Gross Wage" />

            <EditText
                android:id="@+id/eTaip"
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:ems="10"
```

```
                android:inputType="numberDecimal"
                android:textColorLink="@color/colorPrimary" />

            <RadioGroup
                android:id="@+id/rG"
                android:layout_width="match_parent"
                android:layout_height="match_parent">

                <RadioButton
                    android:id="@+id/rBs"
                    android:layout_width="match_parent"
                    android:layout_height="wrap_content"
                    android:text="The employee lives in the same
town where he works. The place of check-in does not matter." />

                <RadioButton
                    android:id="@+id/rBo"
                    android:layout_width="match_parent"
                    android:layout_height="wrap_content"
                    android:text="The place of residence is in a
different place than the workplace." />

                <EditText
                    android:id="@+id/eTcogi"
                    android:layout_width="match_parent"
                    android:layout_height="wrap_content"
                    android:ems="10"
                    android:inputType="numberDecimal"
                    android:textColorLink="@color/colorPrimary" />
            </RadioGroup>

            <LinearLayout
                android:layout_width="match_parent"
                android:layout_height="match_parent"
                android:orientation="horizontal">

                <ImageButton
                    android:id="@+id/imgbtnc"
                    android:layout_width="wrap_content"
                    android:layout_height="wrap_content"
                    app:srcCompat="@drawable/ic_send_black_24dp" />

                <ImageButton
                    android:id="@+id/imgbtne"
                    android:layout_width="wrap_content"
                    android:layout_height="wrap_content"

app:srcCompat="@drawable/ic_exit_to_app_black_24dp" />
```

```
            </LinearLayout>

            <TextView
                android:id="@+id/tv"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content" />

        </LinearLayout>
    </ScrollView>

</androidx.constraintlayout.widget.ConstraintLayout>
```

Listing 2: The source code for the activity_main.xml file [own study]

List of drawings

Drawing 1: The beginning of the application's operation [own study]……...3

Drawing 2: Calculation result part 1 [own study]...……4

Drawing 3: Calculation result part 2 [own study]……..…….5

Drawing 4: Graphical interface [own study]……..…….7

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Listing 2: The source code for activity_main.xml file [own study]……..11