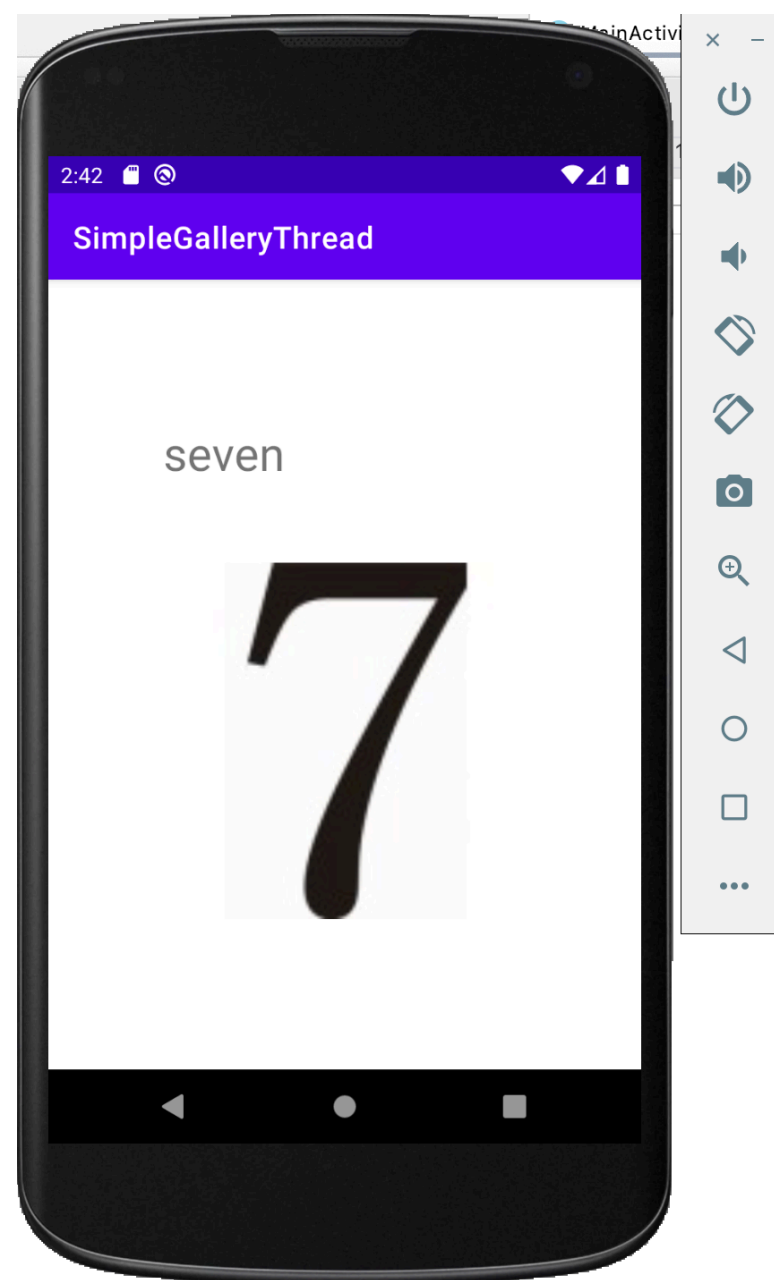


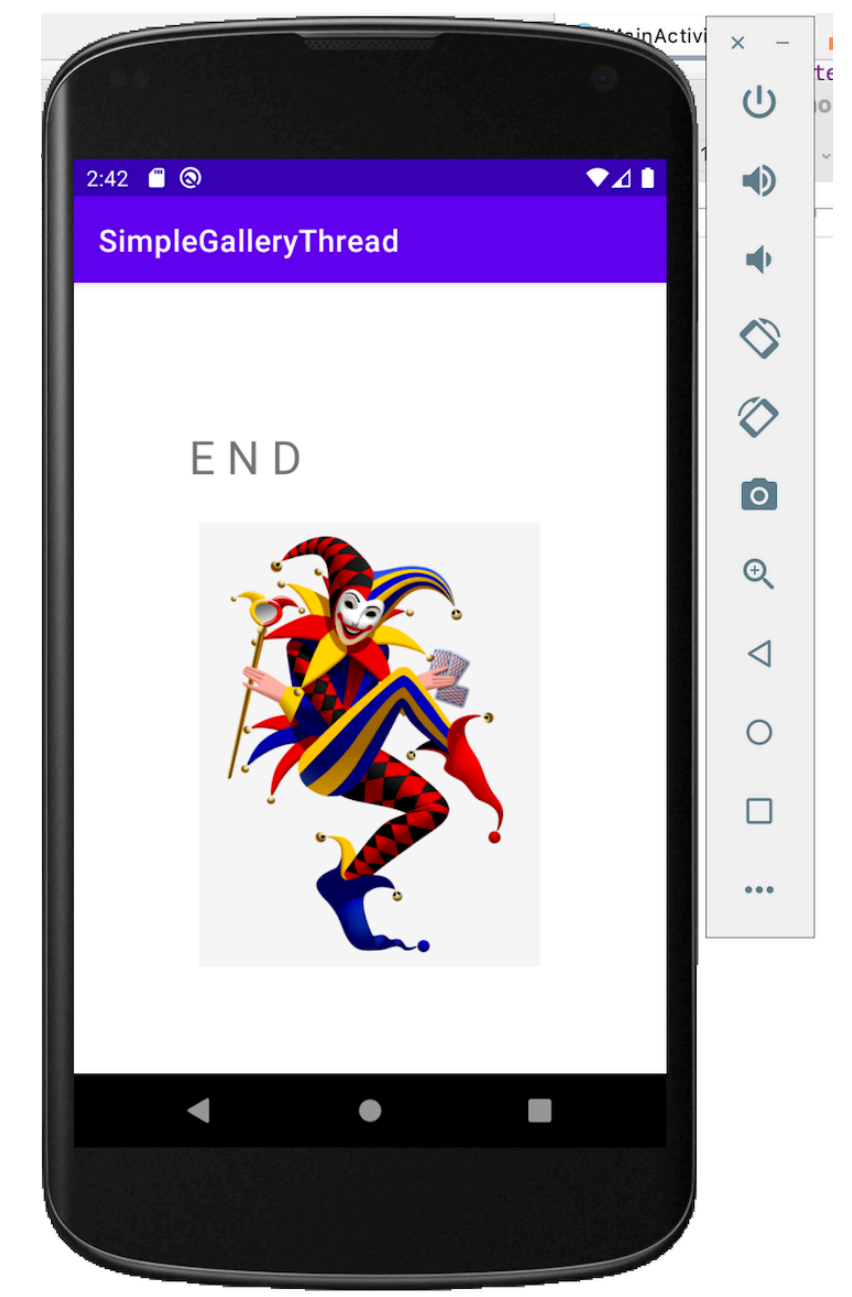
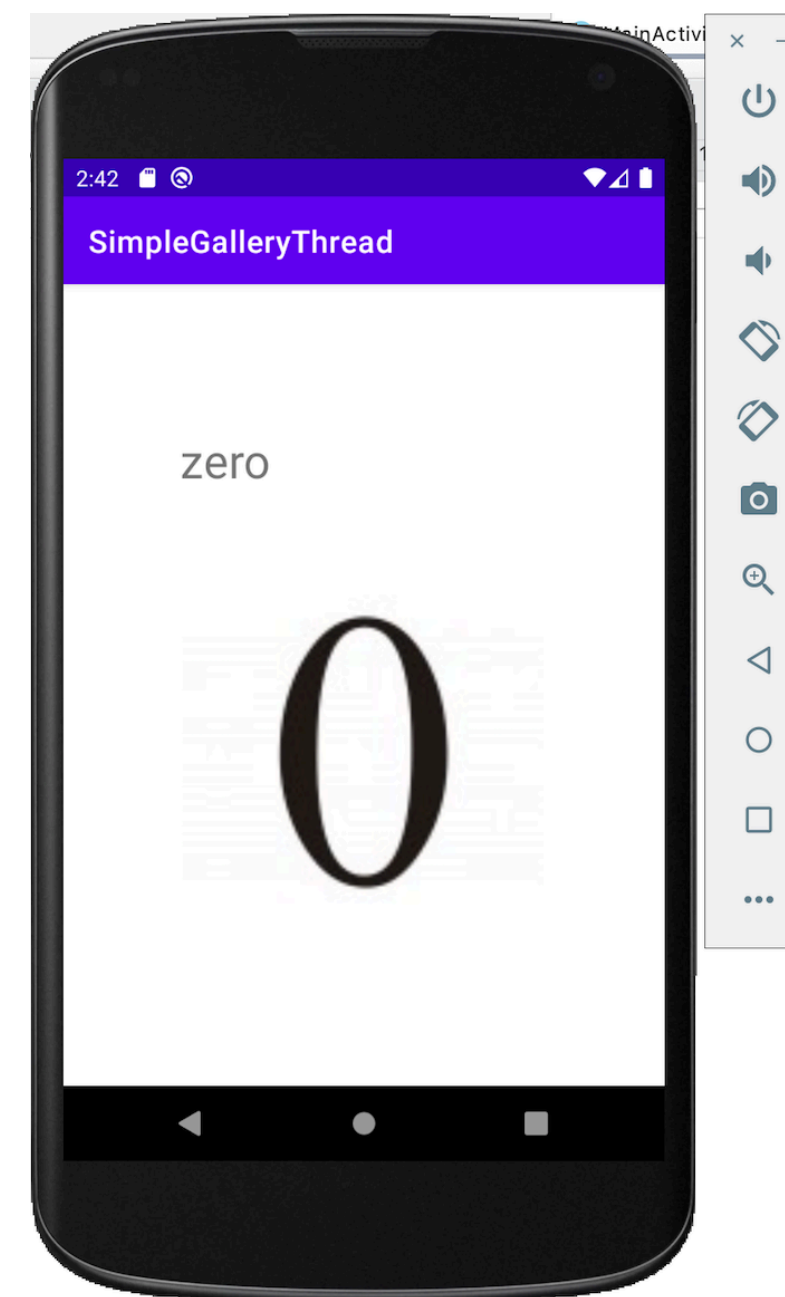
# Tema de lucru (laborator-5)

- Afisati o galerie de imagini utilizând un fir de execuție (Thread); se va afișa câte o imagine și un text asociat acesteia.
- Refaceti aplicatia utilizand de aceasta data **AsyncTask**.

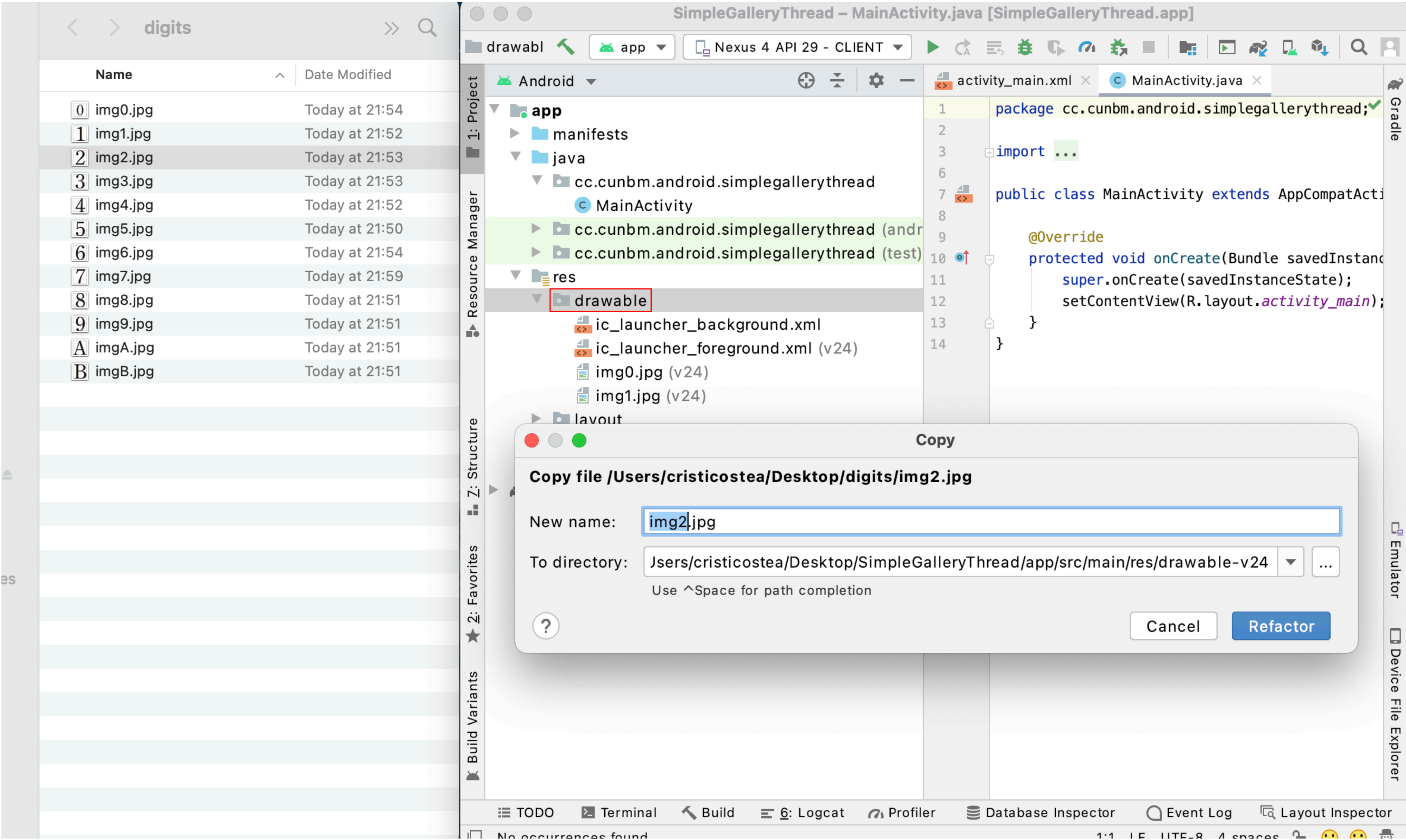
...



...



Se copia cu drag-and-drop  
imaginile in directorul  
resurse **res/drawable**



<http://cti.ubm.ro/cmo/05/digits/>

```

package cc.cunbm.android.simplegallerythread;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.ImageView;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {
    private TextView textView;
    private ImageView imageView;

    class MyItem{
        int image;
        String name;
        public MyItem(int image, String name) {
            this.image = image;
            this.name = name;
        }
    }

    private MyItem myitems[] = {
        new MyItem(R.drawable.img9, "nine"),
        new MyItem(R.drawable.img8,"eight"),
        ..
        new MyItem(R.drawable.img1,"one"),
        new MyItem(R.drawable.img0,"zero"),
        new MyItem(R.drawable.joker,"E N D"),
    };
    private int currentIndex = 0;
}

```

```

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

    textView = (TextView) findViewById(R.id.item_name);
    imageView = (ImageView) findViewById(R.id.item_picture);

    textView.setText(myitems[0].name);
    imageView.setImageResource(myitems[0].image);

    new Thread(new Runnable() {
        @Override
        public void run() {
            while (true) {
                try {
                    Thread.sleep(1000);
                } catch (InterruptedException e) {
                    e.printStackTrace();
                }

                if(currentIndex==myitems.length) break;

                textView.post(new Runnable() {
                    @Override
                    public void run() {
                        textView.setText(myitems[currentIndex].name);
                        imageView.setImageResource(myitems[currentIndex].image);
                        currentIndex++;
                        //currentIndex %= myitems.length;
                    }
                });
            }
        }
    }).start();
}

```



```
<?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/item_name"
        android:layout_width="234dp"
        android:layout_height="57dp"
        android:text="Hello World!"
        android:textSize="30dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintHorizontal_bias="0.497"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.202" />

    <ImageView
        android:id="@+id/item_picture"
        android:layout_width="231dp"
        android:layout_height="287dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.496"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/item_name"
        app:layout_constraintVertical_bias="0.083"
        app:srcCompat="@drawable/img0" />

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

# readings: View.post, Activity.runOnUiThread()

## How to set text of text view in another thread

You need a reference to that textview and then do:

```
textView.post(new Runnable() {  
    public void run() {  
        textView.setText(yourText);  
    }  
});
```

**The post method of the View class will cause the Runnable passed in parameter to be added to the message queue. ..**

- <https://medium.com/@yossisegev/understanding-activity-runOnUiThread-e102d388fe93>
- <https://newbedev.com/android-what-s-the-difference-between-activity-runOnUiThread-and-view-post>

**exemplu-1 AsyncTask**

# AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="cc.cunbm.android.webviewasynctask"
    android:versionCode="1"
    android:versionName="1.0" >

    <uses-permission android:name="android.permission.INTERNET" />

    <application
        android:allowBackup="true"
        android:icon="@drawable/ic_launcher"
        android:label="@string/app_name"
        android:theme="@style/AppTheme" >
        <activity
            android:name="cc.cunbm.android.webviewasynctask.MainActivity"
            android:label="@string/app_name" >
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>

</manifest>
```

# main.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:orientation="vertical" >

    <Button
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:onClick="readWebpage"
        android:text="Load Webpage" >
    </Button>

    <Button
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:onClick="dummyFunc"
        android:text="Dummy Button" />

    <WebView
        android:id="@+id/webView"
        android:layout_width="fill_parent"
        android:layout_height="fill_parent" />

</LinearLayout>
```



```
package cc.cunbm.android.webviewasynctask;
```

```
import android.app.Activity;  
import android.content.Context;  
import android.os.AsyncTask;  
import android.os.Bundle;  
import android.view.View;  
import android.webkit.WebView;  
import android.widget.Toast;
```

```
public class MainActivity extends Activity {  
    final Context context = this;
```

```
    @Override
```

```
    public void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.main);  
    }
```

```
    private class LoadWebPageASYNC extends AsyncTask<String, Void, String> {
```

```
        @Override
```

```
        protected String doInBackground(String... urls) {  
            WebView webView = (WebView) findViewById(R.id.webView);  
            webView.getSettings().setJavaScriptEnabled(true);  
            webView.loadUrl(urls[0]);  
            return null;  
        }
```

```
        @Override
```

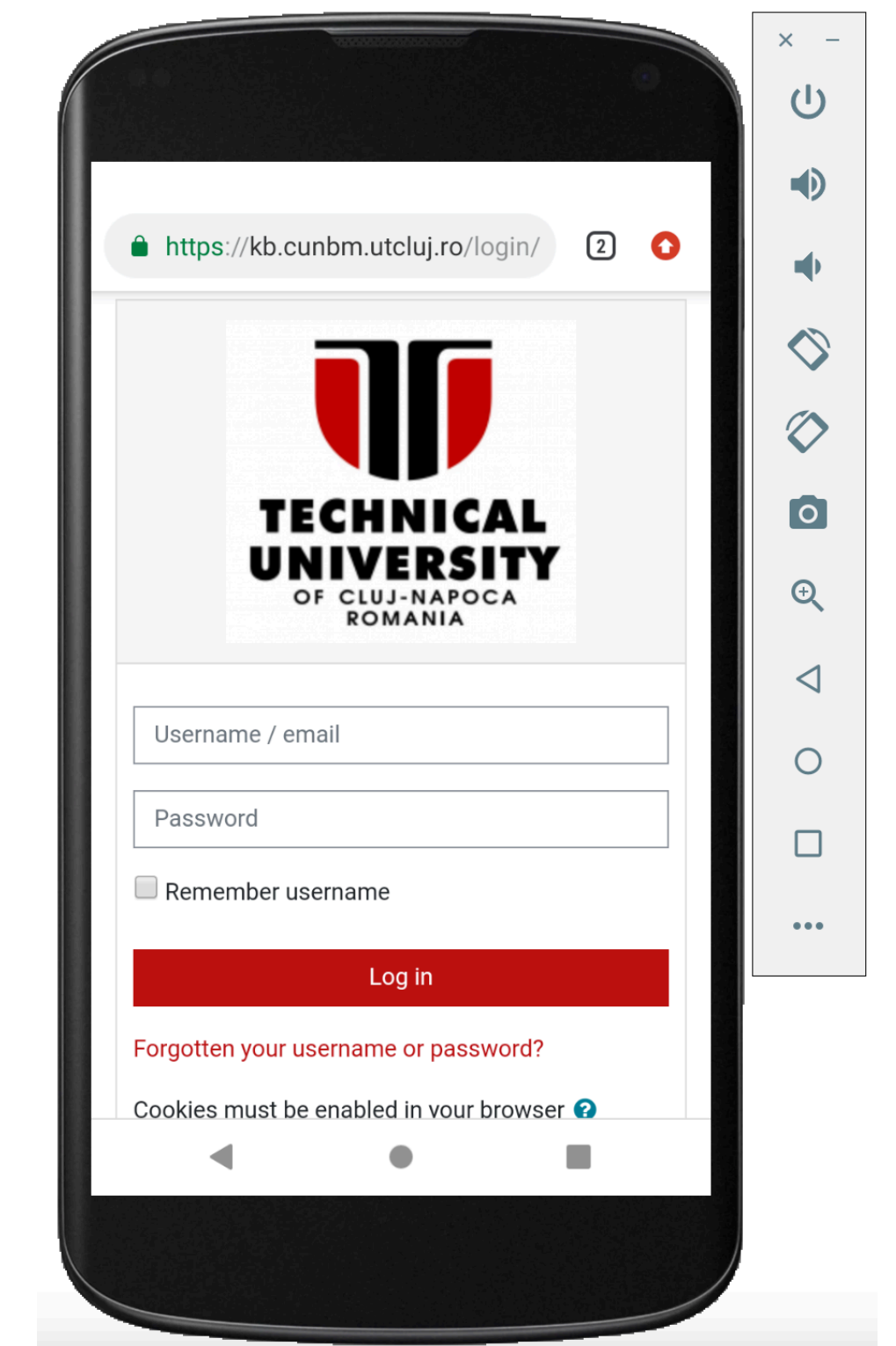
```
        protected void onPostExecute(String result) {  
        }
```

```
    public void dummyFunc(View view){  
        Toast.makeText(MainActivity.this, "Button Clicked", Toast.LENGTH_SHORT).show();  
    }
```

```
    public void readWebpage(View view) {  
        LoadWebPageASYNC task = new LoadWebPageASYNC();  
        task.execute(new String[] { "https://kb.cunbm.utcluj.ro/" });  
    }
```

```
}
```

# MainActivity.java



**exemplu-2   AsyncTask**

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="cc.cunbm.android.asyncimagedownload">

    <uses-permission android:name="android.permission.INTERNET" />

    <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.AsyncImageDownload">

        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>

</manifest>
```

```
<?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">

    <RelativeLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:paddingBottom="@dimen/activity_vertical_margin"
        android:paddingLeft="@dimen/activity_horizontal_margin"
        android:paddingRight="@dimen/activity_horizontal_margin"
        android:paddingTop="@dimen/activity_vertical_margin"
        tools:context=".MainActivity">

        <Button
            android:id="@+id/button"
            android:layout_width="fill_parent"
            android:layout_height="wrap_content"
            android:layout_alignParentBottom="true"
            android:layout_alignParentRight="true"
            android:background="#009968"
            android:layout_marginBottom="58dp"
            android:text="Download" />

        <ImageView
            android:id="@+id/imageView1"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_above="@+id/button"
            android:layout_centerHorizontal="true"
            android:layout_marginBottom="43dp"
            android:src="@drawable/loading" />
    </RelativeLayout>

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

```

package cc.cunbm.android.asyncimagedownload;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;

import java.io.InputStream;
import java.net.URL;
import android.app.ProgressDialog;
import android.graphics.Bitmap;
import android.graphics.BitmapFactory;
import android.os.AsyncTask;
import android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.ImageView;

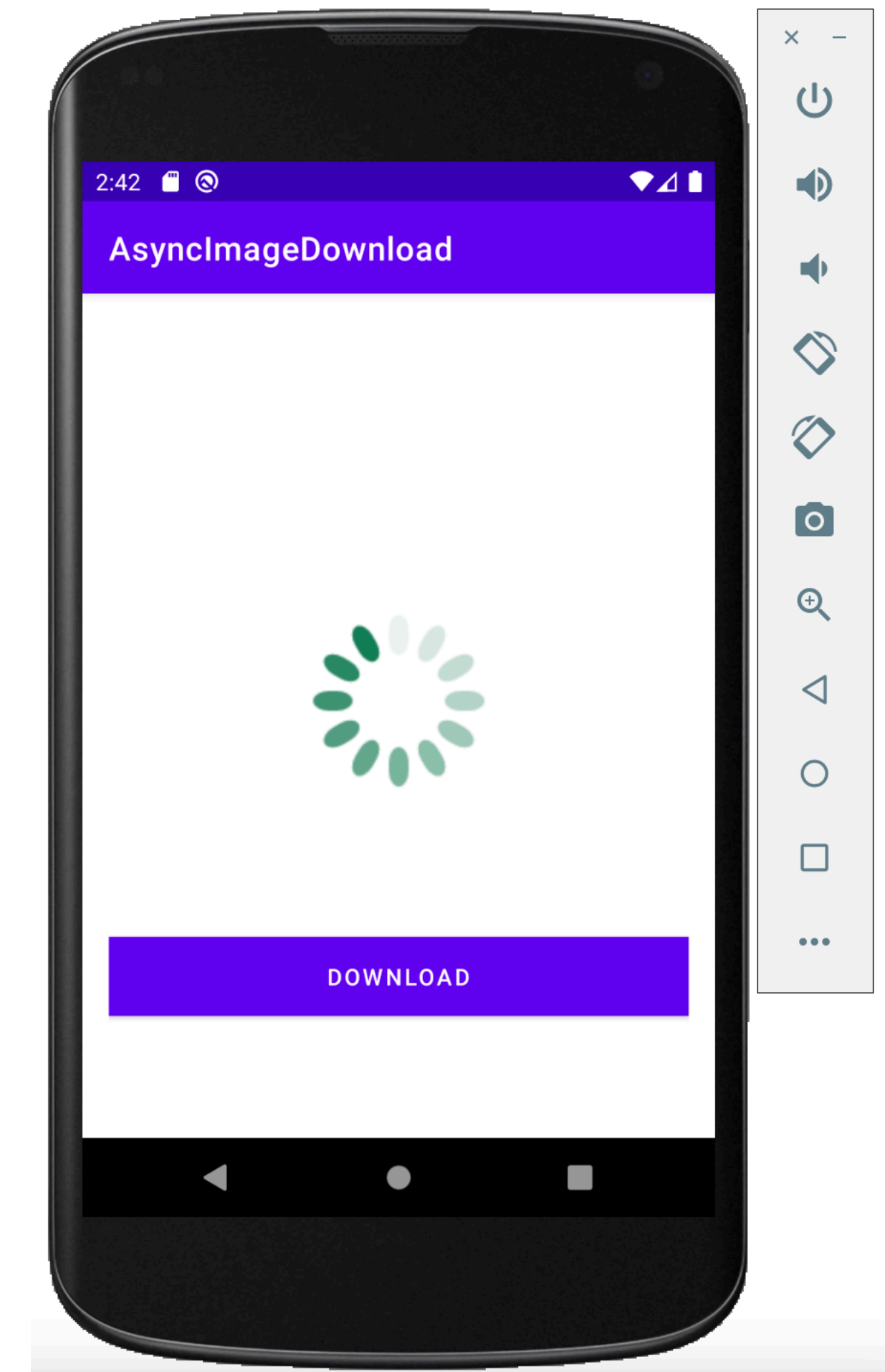
public class MainActivity extends AppCompatActivity {

    private String url="https://nucbm.github.io/joker.png";
    ImageView img;
    Button downloadBtn;
    ProgressDialog pd;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        img=(ImageView) findViewById(R.id.imageView1);
        downloadBtn=(Button) findViewById(R.id.button);

        //ONCLICK
        downloadBtn.setOnClickListener(new OnClickListener() {
            @Override
            public void onClick(View arg0) {
                // TODO Auto-generated method stub
                new Downloader().execute(url);
            }
        });
    }
}

```





```

private class Downloader extends AsyncTask<String,Void,Bitmap>{
    @Override
    protected void onPreExecute() {
        // TODO Auto-generated method stub

        super.onPreExecute();

        //CREATE PD,SET PROPERTIES
        pd=new ProgressDialog(MainActivity.this);
        pd.setTitle("Image Downloader");
        pd.setMessage("Downloading...");
        pd.setIndeterminate(false);
        pd.show();
    }

    protected Bitmap doInBackground(String... url) {
        String myurl = url[0];
        Bitmap bm = null;
        InputStream is = null;

        try {
            is = new URL(myurl).openStream();
            //DECODE
            bm = BitmapFactory.decodeStream(is);
        } catch (Exception e) {
            e.printStackTrace();
        }
        return bm;
    }

    @Override
    protected void onPostExecute(Bitmap result) {
        // TODO Auto-generated method stub
        super.onPostExecute(result);

        // SET TO IMG
        img.setImageBitmap(result);

        // DISMISS
        pd.dismiss();
    }
}
}

```

