

Correction TD01

Matière : DEVELOPPEMENT D'APPLICATIONS MOBILES NATIVES

Classe : SEM21

## Exercice1 (Sphère)

strings.xml

```
<?xml version="1.0" encoding="utf-8"?>
<resources>

    <string name="app_name">Sphère</string>
    <string name="action_settings">Settings</string>
    <string name="rayon">Rayon</string>
    <string name="calculer">Calculer</string>
    <string name="aire">Aire</string>
    <string name="volume">Volume</string>
    <string name="massev">Masse Volumique</string>
    <string name="peser">Peser</string>
    <string name="poids">Poids</string>

</resources>
```

activity\_main.xml

```
<LinearLayout 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:layout_marginLeft="10dp"
    android:layout_marginTop="10dp"
    android:orientation="vertical" >

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

        <TextView
            android:id="@+id/textView1"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="@string/rayon" />

        <EditText
            android:id="@+id/edRayon"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            >

            <requestFocus />
        </EditText>
    </LinearLayout>

    <Button
        android:id="@+id/btnCalculer"
        android:layout_width="match_parent"
```

```

        android:layout_height="wrap_content"
        android:text="@string/calculer" />

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

    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/aire" />

    <EditText
        android:id="@+id/edAire"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:ems="10" />
</LinearLayout>

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

    <TextView
        android:id="@+id/textView3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/volume" />

    <EditText
        android:id="@+id/edVolume"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:ems="10" />
</LinearLayout>

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

    <TextView
        android:id="@+id/textView4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/massev" />

    <EditText
        android:id="@+id/edMasseV"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:ems="10" />
</LinearLayout>

```

<Button

```
    android:id="@+id/btnPeser"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="@string/peser" />
```

<LinearLayout

```
    android:layout_width="match_parent"
    android:layout_height="wrap_content" >
```

<TextView

```
    android:id="@+id/textView5"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="@string/poids" />
```

<EditText

```
    android:id="@+id/edPoids"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:ems="10" />
```

</LinearLayout>

</LinearLayout>

### MainActivity.java

```
package com.sphere;
//imports
```

```
public class MainActivity extends AppCompatActivity {
    // attributs
    private EditText edRayon;
    private Button btnCalculer;
    private EditText edAire;
    private EditText edVolume;
    private EditText edMasseV;
    private Button btnPeser;
    private EditText edPoids;

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

    private void initGraphique () {
        edRayon = findViewById(R.id.edRayon);
        btnCalculer = findViewById(R.id.btnCalculer);
        edAire = findViewById(R.id.edAire);
        edVolume = findViewById(R.id.edVolume);
        edMasseV = findViewById(R.id.edMasseV);
        btnPeser = findViewById(R.id.btnPeser);
        edPoids = findViewById(R.id.edPoids);
        ajouterEcouteur();
    }
}
```

```

private void ajouterEcouleur() {
    btnCalculer.setOnClickListener(view -> calculer());
    btnPeser.setOnClickListener(view -> peser());
}

protected void calculer() {
    if(!edRayon.getText().toString().isEmpty()){
        double rayon = Double.parseDouble(edRayon.getText().toString());
        double aire = 4 * Math.PI * Math.pow(rayon, 2);
        double volume = 4 * Math.PI * Math.pow(rayon, 3) / 3;
        edAire.setText(aire + "");
        edVolume.setText(volume + "");
    } else {
        Toast t = Toast.makeText(getApplicationContext(),
            "Tapez un réel dans Rayon SVP!", Toast.LENGTH_LONG);
        t.show();
        edRayon.requestFocus();
    }
}

protected void peser() {
    if(!edVolume.getText().toString().isEmpty()
        && !edMasseV.getText().toString().isEmpty()){
        double volume = Double.parseDouble(edVolume.getText().toString());
        double masseV = Double.parseDouble(edMasseV.getText().toString());
        double poids = volume * masseV;
        edPoids.setText(poids + "");
    } else {
        Toast t = Toast.makeText(getApplicationContext(),
            "Tapez un réel dans Masse Volumique SVP!",
            Toast.LENGTH_LONG);
        t.show();
        edMasseV.requestFocus();
    }
}
}

```