



BMI App



LUCAS  
UZAN  
COM3B

## Mobile Assignment One “BMI”

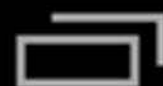
19.0

Normal Weight

# BMI APP!

Previous

Next



1. **Design and implement an App that will calculate a person's BMI ([Body Mass Index](#)).** The metric formula is  $BMI = Mass / (height * height)$ . Include the following in your App:

- a) Create your **own** App icon in 3 different resolutions (doesn't need to be beautiful!)
- b) At least one of: TextView, EditText and Button components in the main activity. Use two layout managers e.g. one LinearLayout inside another LinearLayout. Any text relevant to the components should be stored in the *strings.xml* file.
- c) Process the events on at least one of the GUI components in **b)** above.
- d) A trigger on the first Activity launches a second Activity and passes some data to it for display. A Third Activity that is triggered by the first Activity and passes data back to the first Activity.
- e) Localise your App's text, including it's name, for a second language of your choice. Change the language in your AVD to see your App correctly & automatically switch to and from the second language.
- f) Create a Second layout file for horizontal orientation – preserve at least 1 app variable using *onSaveInstanceState* & *onRestoreInstanceState* methods.

(10 marks ea, 60 marks total)

2. **Three Advanced features or innovation/creativity; here are some examples but you can do different ones of equivalent difficulty:**

- g) Show the user a list of choices. Show the user an Alert using AlertDialog class.
- h) Save the App state when quitting. Restore on re-launch. NB method *onSaveInstanceState* does NOT do that.
- i) Draw a graphic to display some app related info.

(10 marks ea, 30 marks total)

3. **Documentation includes the following:**

- 1) Commented code & the use a coding standard. Use extra classes where appropriate.
- 2) This document stating what was done including screen shots of code snippets & the running app code (on pages 3+). Include list of classes, class or block diagram, what each is for. Also include an evaluation – how has it worked out & future outlook – what could be done differently.

(5 marks ea, 10 marks total)

Assignment Procedure [guide](#) or (includes a coding standard)

**Demo in the lab (mandatory for on site courses):**

- Demonstrate the running program in the 1<sup>st</sup> lab following the due date (not for online courses). You may be asked to make changes to the code after your demo. The purpose of the demo is to show what you have done and that you understand what you have done.
- **Submission**  
**Submit to Blackboard:** This edited document & Project code.. All goes in 1 archive file. *Please name the file* as in this example: **YourClass-YourName-MOB-Asn1.7z**

*“By submitting this electronically, using an account & password only I have access to, I hereby certify that this material which I now submit for assessment is entirely my own work and has not been taken from the work of others, save and to the extent, that such work has been cited and acknowledged within the text of my work.”*

I (a) Create your **own** App icon in 3 different resolutions

Completed? Yes

### Configure Icon Set

Configure the attributes of the icon set

Foreground: **Image** Clipart Text

Image File:  Browse...

☒ Trim Surrounding Blank Space

Additional Padding:

Foreground Scaling: **Crop** Center

Shape **None** Square Circle

Background Color:

Preview:

mdpi:

hdpi:

xhdpi:

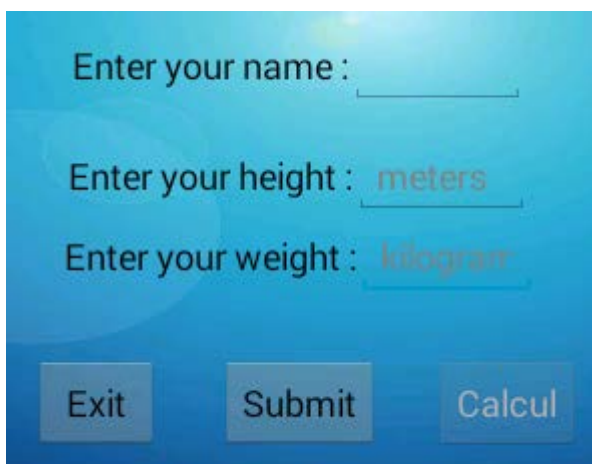
xxhdpi:

? < Back Next > Finish Cancel

1 (b) At least one of: TextView, EditText and Button components in the main activity. Use two layout managers e.g. one LinearLayout inside another LinearLayout. Any text relevant to the components should be stored in the strings.xml file.

Completed? Yes

```
1 <RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
2   xmlns:tools="http://schemas.android.com/tools"
3   android:layout_width="match_parent"
4   android:layout_height="match_parent"
5   android:id="@+id/background"
6   android:background="@drawable/galaxy_wallpaper"
7   android:paddingBottom="@dimen/activity_vertical_margin"
8   android:paddingLeft="@dimen/activity_horizontal_margin"
9   android:paddingRight="@dimen/activity_horizontal_margin"
10  android:paddingTop="@dimen/activity_vertical_margin"
11  tools:context="mobileapp.bmi_ator.MainActivity" >
12
13  <Button
14    android:id="@+id/Bt_Cancel"
15    android:layout_width="wrap_content"
16    android:layout_height="wrap_content"
17    android:layout_alignBaseline="@+id/Bt_Submit"
18    android:layout_alignBottom="@+id/Bt_Submit"
19    android:layout_toLeftOf="@+id/textView1"
20    android:text="@string/cancel" />
21
22  <LinearLayout
23    android:id="@+id/LinearLayout01"
24    android:layout_width="wrap_content"
25    android:layout_height="wrap_content"
26    android:layout_below="@+id/textView1"
27    android:layout_centerHorizontal="true"
28    android:layout_marginTop="30dp"
29    android:orientation="horizontal" >
30
31    <TextView
32      android:id="@+id/TextView01"
33      android:layout_width="wrap_content"
34      android:layout_height="wrap_content"
35      android:text="@string/name"
36      android:textAppearance="?android:attr/textAppearanceMedium"
37      android:typeface="@+assets/Gravity_Light.ttf" />
38
39    <EditText
40      android:id="@+id/EditTextName"
41      android:layout_width="89dp"
42      android:layout_height="wrap_content"
43      android:layout_weight="1"
44      android:ems="10"
45      android:inputType="text" />
```



l (c) Process the events on at least one of the GUI components in b) above.

Completed? Yes

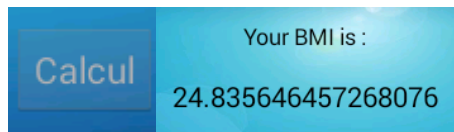
In the MainActivity, if you don't complete the EditText and you click on Submit :



```
104 submit_Btn.setOnClickListener(new View.OnClickListener() {
105
106     @Override
107     public void onClick(View v) {
108
109
110         final int l1 = Et_Name.getText().toString().length();
111         final int l2 = Et_Size.getText().toString().length();
112         final int l3 = Et_Weight.getText().toString().length();
113
114
115
116         if ((l1 == 0)) {
117             Et_Name.setError(getString(R.string.error_required));
118         }
119
120
121         if ((l2 == 0)) {
122             Et_Size.setError(getString(R.string.error_required));
123         }
124
125
126         if ((l3 == 0)) {
127             Et_Weight.setError(getString(R.string.error_required));
128         }
129
130
131
132         if ((l1 != 0) && (l2 != 0) && (l3 != 0)) {
133
134
135             calcul_Btn.setEnabled(true);
136             submit_Btn.setEnabled(false);
137         }
138     }
139 }
```

I (d) A trigger on the first Activity launches a second Activity and passes some data to it for display. A Third Activity that is triggered by the first Activity and passes data back to the first Activity.

Completed? Yes



THIS BUTTON IN THE MAIN ACTIVITY LAUNCH THE SECOND ACTIVITY AND PASSES BMI VALUE.

```

169  calcul_Btn.setOnClickListener(new View.OnClickListener() {
170
171      @Override
172      public void onClick(View v) {
173
174          EditText Et_Size = (EditText) findViewById(R.id.EditTextHeight);
175          EditText Et_Weight = (EditText) findViewById(R.id.EditTextWeight);
176
177          double size = Double.parseDouble(Et_Size.getText().toString());
178          double weight = Double.parseDouble(Et_Weight.getText().toString());
179          String BMI = Double.toString(weight / (size * size));
180
181          Intent launcher = new Intent(MainActivity.this,
182                                  SecondActivity.class);
183
184          launcher.putExtra(BOX_BMI, BMI);
185
186          startActivityForResult(launcher, 1);
187
188          final ProgressDialog dialog = ProgressDialog.show(MainActivity.this, "", "Loading..Wait..", true);
189          dialog.show();
190          Handler handler = new Handler();
191          handler.postDelayed(new Runnable() {
192              public void run() {
193                  //your code here
194                  dialog.dismiss();
195              }
196          }, 1000); // 3000 milliseconds
197
198      }
199  });
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```

I couldn't do the the Third Activity that is triggered by the first Activity and passes data back to the first Activity but I put a trigger on the second Activity that launches a fourth Activity and passes value of BMI in order to place an ImageView.



l (e) Localise your App's text, including it's name, for a second language of your choice. Change the language in your AVD to see your App correctly & automatically switch to and from the second language.

Completed? Yes

```

└─ values
    └─ dims.xml
    └─ strings.xml
    └─ styles.xml
└─ values-fr
    └─ dims.xml
    └─ strings.xml
    └─ styles.xml

1  <?xml version="1.0" encoding="utf-8"?>
2  <resources>
3
4      <string name="app_name">BMI App</string>
5      <string name="welcome">Welcome On BMI App !</string>
6      <string name="action_settings">Settings</string>
7      <string name="next">Next</string>
8      <string name="cancel">Exit</string>
9      <string name="name">Enter your name : </string>
10     <string name="height">Enter your height : </string>
11     <string name="weight">Enter your weight : </string>
12     <string name="previous">Previous</string>
13     <string name="bmi_value">Your BMI is :</string>
14     <string name="submit">Submit</string>
15     <string name="calcul">Calcul</string>
16     <string name="title">YOUR POSITION</string>

1  <?xml version="1.0" encoding="utf-8"?>
2  <resources>
3
4      <string name="app_name">IMC App</string>
5      <string name="welcome">Bienvenue Sur IMC App !</string>
6      <string name="action_settings">Paramètres</string>
7      <string name="next">Suivant</string>
8      <string name="cancel">Sortir</string>
9      <string name="name">Entrer votre nom : </string>
10     <string name="height">Entrer votre taille : </string>
11     <string name="weight">Entrer votre poids : </string>
12     <string name="previous">Précédent</string>
13     <string name="bmi_value">Votre IMC est :</string>
14     <string name="submit">Soumettre</string>
15     <string name="calcul">Calcule</string>
16     <string name="title">VOTRE POSITION</string>
```

Welcome On BMI App !

Bienvenue Sur IMC App !



1 (f) Create a Second layout file for horizontal orientation – preserve at least 1 app variable using onSaveInstanceState & onRestoreInstanceState methods.

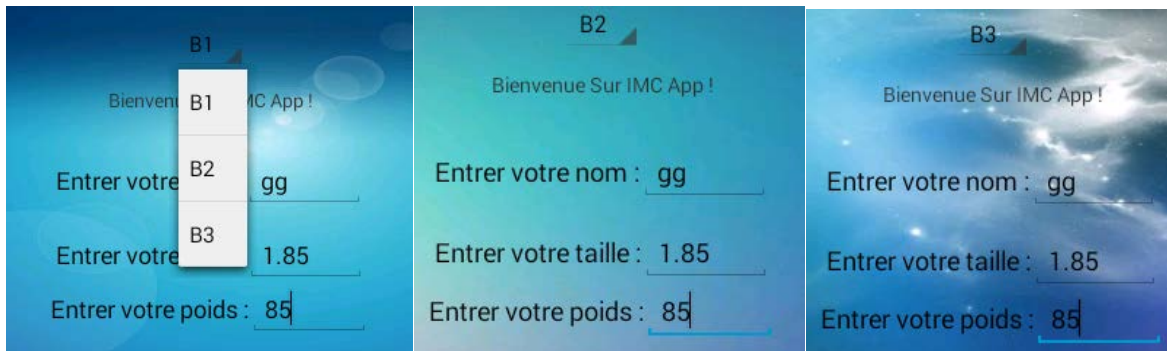
Completed? Yes



```
275
276 @Override
277 public void onSaveInstanceState(Bundle savedInstanceState) {
278
279     // Save the user's current index state
280     EditText Et_Name = (EditText) findViewById(R.id.EditTextName);
281     savedInstanceState.putString("index", Et_Name.getText().toString());
282
283     // Always call the superclass so it can save the view hierarchy state
284     super.onSaveInstanceState(savedInstanceState);
285 }
286
287
288 public void onRestoreInstanceState(Bundle savedInstanceState) {
289     // Always call the superclass so it can restore the view hierarchy
290     super.onRestoreInstanceState(savedInstanceState);
291
292     // Restore state members from saved instance
293     EditText Et_Name = (EditText) findViewById(R.id.EditTextName);
294     Et_Name.setText(savedInstanceState.getString("index"));
295 }
296
```

If you change of orientation, the value you wrote into the EditText Name doesn't disappear.

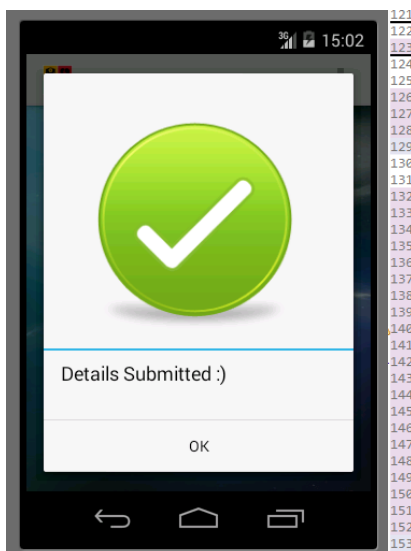
2 (g) Show the user a list of choices. Show the user an Alert using AlertDialog class.  
Completed? Yes



```

67 spinner.setOnItemSelectedListener(new AdapterView.OnItemSelectedListener() {
68
69     @Override
70     public void onItemSelected(AdapterView adapter, View v, int i,
71     long lng) {
72         if (i == 0) {
73             View background = findViewById(R.id.background);
74             background
75                 .setBackgroundResource(R.drawable.galaxy_wallpaper);
76
77         }
78
79         if (i == 1) {
80             View background = findViewById(R.id.background);
81             background.setBackgroundResource(R.drawable.background2);
82
83         }
84
85         if (i == 2) {
86             View background = findViewById(R.id.background);
87             background.setBackgroundResource(R.drawable.background3);
88
89         }
90     }
91 }
92
93 @Override
94 public void onNothingSelected(AdapterView arg0) {
95     Toast.makeText(getApplicationContext(), "Nothing selected",
96     Toast.LENGTH_SHORT).show();
97 }
98 }
99 }
100 }

```



```

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```

```

if ((l1 != 0) && (l2 != 0) && (l3 != 0)) {

    calcul_btn.setEnabled(true);
    submit_btn.setEnabled(false);

    AlertDialog alertDialog = new AlertDialog.Builder(
        MainActivity.this).create();

    // Setting Dialog Title
    alertDialog.setTitle("Alert Dialog");

    // Setting Dialog Message
    alertDialog.setMessage("Details Submitted :)");

    // Setting Icon to Dialog
    alertDialog.setIcon(R.drawable.tick);

    // Setting OK Button
    alertDialog.setButton("OK",
        new DialogInterface.OnClickListener() {
            public void onClick(DialogInterface dialog,
                int which) {
                // Write your code here to execute after
                // dialog closed
                Toast.makeText(getApplicationContext(),
                    "You clicked on OK",
                    Toast.LENGTH_SHORT).show();
            }
        });

    // Showing Alert Message
    alertDialog.show();
}

```

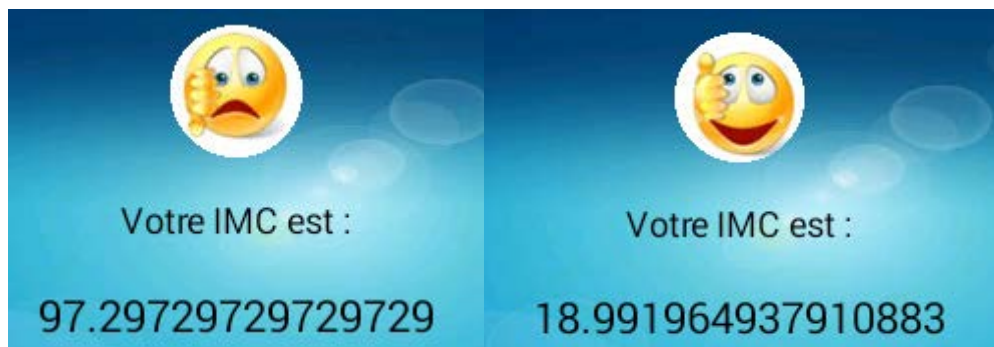
2 (h) Save the App state when quitting. Restore on re-launch

Completed? No

**BUT I put 3 different events that depend of the BMI Value:**

- An image in the SecondActivity (top or bad)

```
24
25     final ImageView top = (ImageView) findViewById(R.id.Img_top);
26     final ImageView bad = (ImageView) findViewById(R.id.Img_bad);
27
28     top.setVisibility(View.INVISIBLE);
29     bad.setVisibility(View.INVISIBLE);
30
31
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42
43
44     if (BMI>=18.5 && BMI<24.9) {
45         top.setVisibility(View.VISIBLE);
46     }
47     else{
48         bad.setVisibility(View.VISIBLE);
49     }
50
```



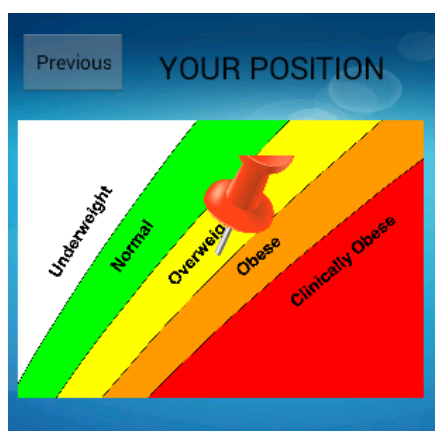
- 2 information about the BMI you have

```
94 public String Classification(double BMI){
95     String value = "";
96
97     if(BMI<18.5){
98         value = "Poor Weight";
99     }
100
101     if(BMI>=18.5 && BMI<24.9){
102         value = "Normal Weight";
103     }
104
105     if(BMI>=24.9 && BMI<29.9) {
106         value = "Overweight";
107     }
108
109     if(BMI>=29.9 && BMI<34.9) {
110         value = "Moderate Obesity" ;
111     }
112
113     if(BMI>=34.9 && BMI<39.9) {
114         value = "Severe Obesity" ;
115     }
116
117     if(BMI>=39.9){
118         value = "Massive Obesity" ;
119     }
120
121     return value;
122 }
123
124
125 public String Problems(double BMI){
126     String value = "";
127
128     if(BMI<18.5) {
129         value = "Health Problems Increased";
130     }
131
132     if(BMI>=18.5 && BMI<24.9){
133         value= "Health Problems Lesser";
134     }
135
136     if(BMI>=24.9 && BMI<29.9) {
137         value= "Health Problems Increased";
138     }
139
140     if(BMI>=29.9 && BMI<34.9) {
141         value= "Health Problems Moderate";
142     }
143
144     if(BMI>=34.9 && BMI<39.9) {
145         value= "Health Problems High";
146     }
147
148     if(BMI>=39.9) {
149         value = "Health Problems Very High";
150     }
151
152     return value;
153 }
154
155
156
```

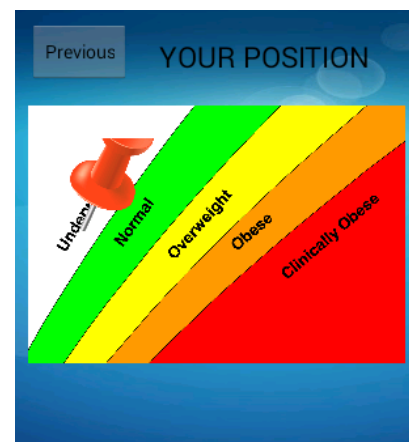
18.991964937910883	25.712198685171657
Normal Weight	Overweight
Health Problems Lesser	Health Problems Increased

- An image that move on the graphic depending on BMI Value

Case of Overweight:



Case of Underweight :



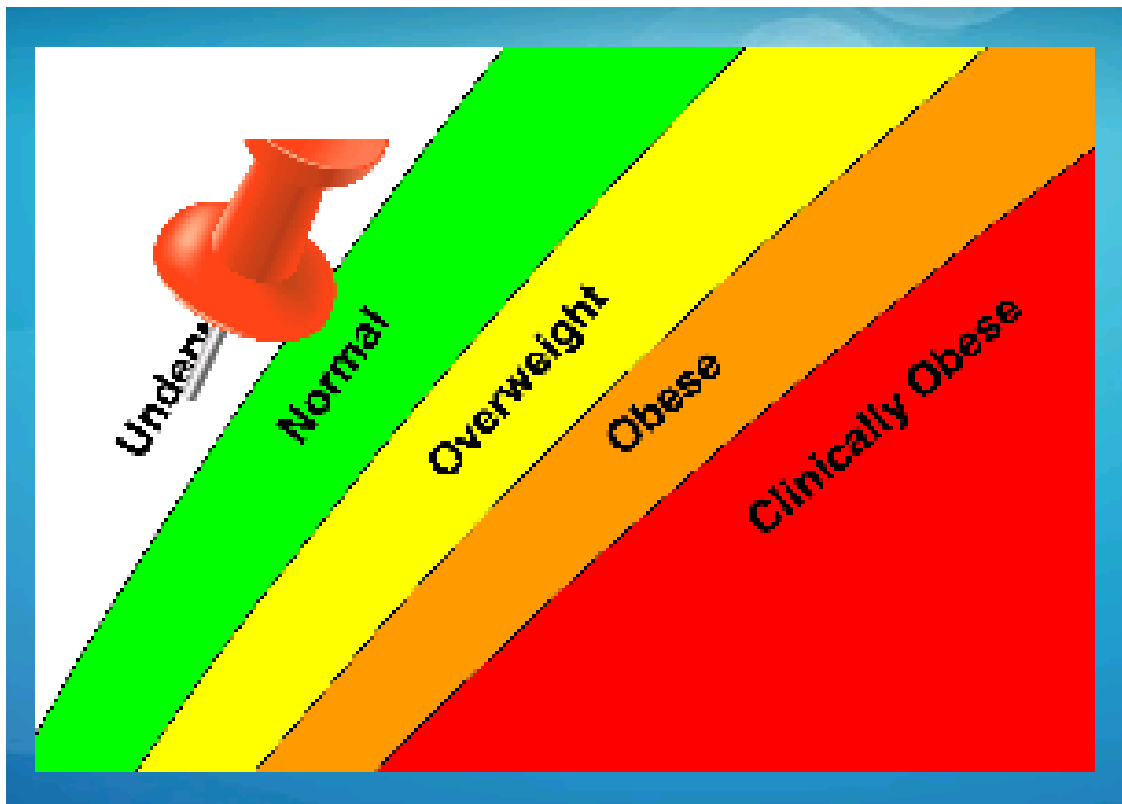
```

26
27     ImageView attach = (ImageView) findViewById(R.id.img_attach);
28
29     if (BMI2 < 18.5) {
30         attach.scrollBy(40, 20);
31     }
32
33
34     if (BMI2 >= 18.5 && BMI2 < 24.9) {
35         attach.scrollBy(20, 20);
36     }
37
38
39     if (BMI2 >= 24.9 && BMI2 < 29.9) {
40         attach.scrollBy(-20, 20);
41     }
42
43     if (BMI2 >= 29.9 && BMI2 < 34.9) {
44         attach.scrollBy(-40, 20);
45     }
46
47     if (BMI2 >= 34.9) {
48         attach.scrollBy(-90, 20);
49     }
50

```

2 (i) Draw a graphic to display some app related info.

Completed? Yes



```
12
13     <LinearLayout
14         android:layout_width="wrap_content"
15         android:layout_height="wrap_content"
16         android:layout_centerHorizontal="true"
17         android:orientation="vertical" >
18
19         <ImageView
20             android:id="@+id/Img_chart"
21             android:layout_width="wrap_content"
22             android:layout_height="wrap_content"
23             android:src="@drawable/chart"
24             android:text="TextView" />
25     </LinearLayout>
26
```

## 1) List of classes

- MainActivity.java : Home Application where the user has to put his information (name, height, weight) and this information are supposed to be register in a database in clicking on "Submit"; he can change the background of the activity.
- SecondActivity.java : Display BMI of the user, and informations about it.
- ThirdActivity.java : Doesn't work actually. This activity was supposed to stock user details in a Database in order to avoid the user to put his details each time he start the application.
- FourthActivity.java : Display a Graphic and a pin that move in function of the bmi value.

## 2) How has it worked

This application was very cool to create. I mean that the language we use is very easy to understand and to manipulate. Just, I had some problems to put an image over an over image or to put a graphic component over an image.. but finally, thanks to internet, I did it.

## 3) Future outlook / What could be done differently

For this kind of application, it can be cool if we use PHP/SQL to create an account for the user in order to avoid the user to enter his details each time. Moreover, the user will be able to see the evolution of his BMI each time he uses the application (cf goal of ThirdActivity). The design of my application could be better and I think I could use more activities to display functionalities (like the background personalize).

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