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Lab 3: Personality Test Mobile App

1. Objectives

In this lab, students will learn how to develop a simple app by converting an article ("This Mind-Blowing Picture Test Will Reveal Your True Personality") into an Android Mobile App.

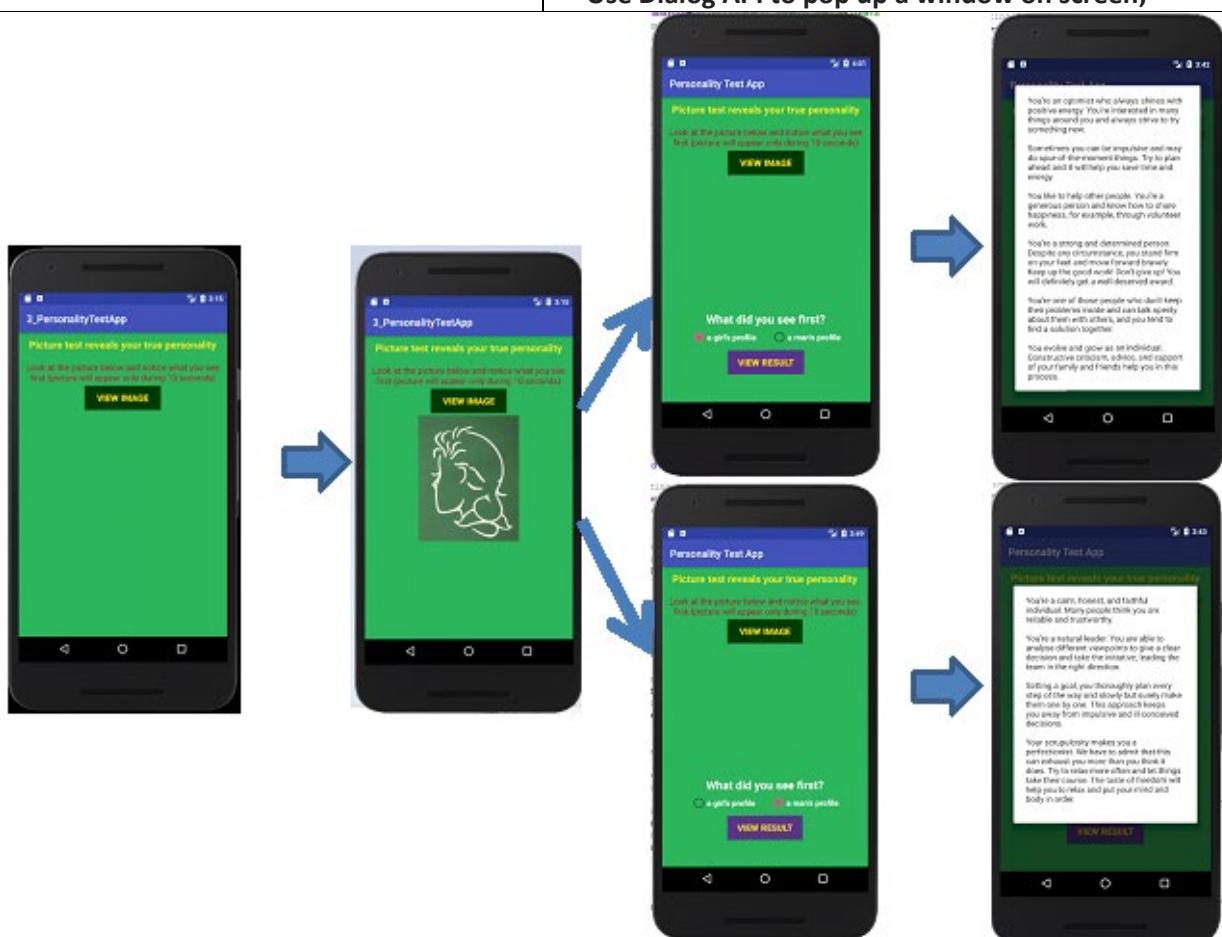
In this lab, students learn:

Design Graphic User Interface (GUI) in Android:

- RelativeLayout & LinearLayout
- Design **nested layout**
- Visual controls: **TextView, ImageView, Button**
- Visual control: **Radio Button**

Java coding in Android:

- Make connection between java variables and visual elements on Layout;
- Set Click listener and respond for visual controls
- Use Resources in Android: colors, strings, dimension;
- Use Thread in Android
- Use Dialog API to pop up a window on screen;



"Activity" in Android

Source: https://www.tutorialspoint.com/android/android_acitivities.htm

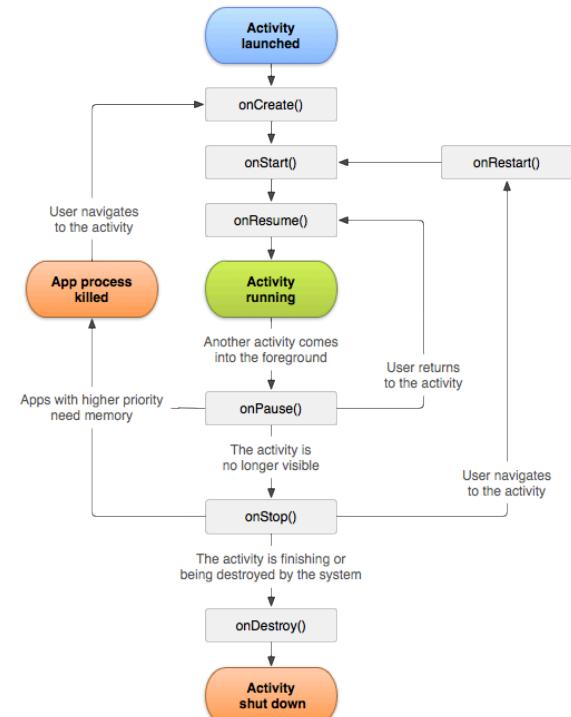
An activity represents a single screen with a user interface just like window or frame of Java. Android activity is the subclass of **ContextThemeWrapper class**.

Callback & Description	
1	onCreate() : This is the first callback and called when the activity is first created.
2	onStart() : This callback is called when the activity becomes visible to the user.
3	onResume() : This is called when the user starts interacting with the application.
4	onPause() : The paused activity does not receive user input and cannot execute any code and called when the current activity is being paused and the previous activity is being resumed.
5	onStop() : This callback is called when the activity is no longer visible.
6	onDestroy() : This callback is called before the activity is destroyed by the system.
7	onRestart() : This callback is called when the activity restarts after stopping it.

Activities are one of the fundamental building blocks of apps on the Android platform. They serve as the entry point for a user's interaction with an app, and are also central to how a user navigates within an app (as with the Back button) or between apps (as with the Recents button).

There is a sequence of **callback methods** that start up an activity and a sequence of callback methods that tear down an activity as shown in the beside Activity life cycle diagram

The Activity class defines the following call backs i.e. events. **You don't need to implement all the callbacks methods.** However, it's important that you understand each one and implement those that ensure your app behaves the way users expect.



Activity life cycle diagram

Reading & Convert the below article into a Mobile App

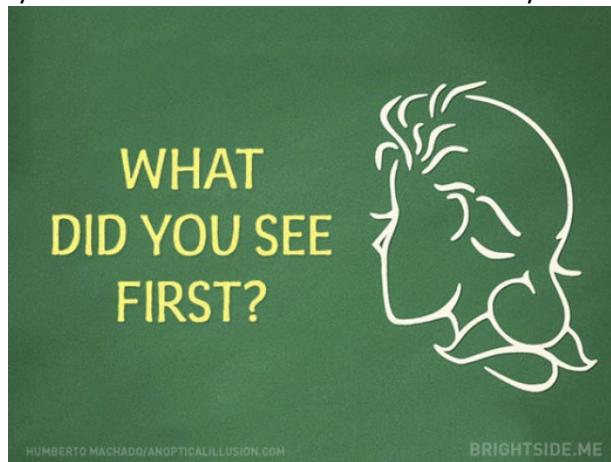
This Mind-Blowing Picture Test Will Reveal Your True Personality

Source: <https://brightside.me/wonder-quizzes/the-image-you-see-first-in-this-test-will-reveal-your-true-personality-139555/>

Bright Side would like to offer you a simple way to learn more about yourself. This test will show how the first image you noticed reflects your personal qualities.

Look at the picture for **no longer than 10 seconds** and notice what **you see first**.

We also want to remind you that you shouldn't treat the results too seriously.



A girl's profile

You're an optimist who always shines with positive energy. You're interested in many things around you and always strive to try something new.

Sometimes you can be impulsive and may do spur-of-the-moment things. Try to plan ahead and it will help you save time and energy.

You like to help other people. You're a generous person and know how to share happiness, for example, through volunteer work.

You're a strong and determined person. Despite any circumstance, you stand firm on your feet and move forward bravely. Keep up the good work! Don't give up! You will definitely get a well-deserved award.

You're one of those people who don't keep their problems inside and can talk openly about them with others, and you tend to find a solution together.

You evolve and grow as an individual. Constructive criticism, advice, and support of your family and friends help you in this process.

An old man's profile

You're a calm, honest, and faithful individual. Many people think you are reliable and trustworthy.

You're a natural leader. You are able to analyse different viewpoints to give a clear decision and take the initiative, leading the team in the right direction.

Setting a goal, you thoroughly plan every step of the way and slowly but surely make them one by one. This approach keeps you away from impulsive and ill-conceived decisions.

Your scrupulosity makes you a perfectionist. We have to admit that this can exhaust you more than you think it does. Try to relax more often and let things take their course. The taste of freedom will help you to relax and put your mind and body in order.

Preview photo credit [Humberto Machado](#)

Analyze app function & design its user interface

App Graphic User Interface (GUI):

Below is the structure of the main layout:

- 3 **TextViews**: for displaying “title” (*Picture test reveals your true personality*), “instruction” (*Look at the picture below and notice what you see first (picture will appear only during 10 seconds)*), and “question” (*what did you see first?*);
- 1 **ImageView**: for displaying “test” image;
- 2 **Radio Buttons**: display 2 answer options: (1) *A girl’s profile* & (2) *A man’s profile* for users to select;
- 2 **Buttons**: “View Image” to display “test” image that will appear only in 10 seconds; “View Result” to display the relevant personality (girl_profile or man_profile) based on user’s answer;

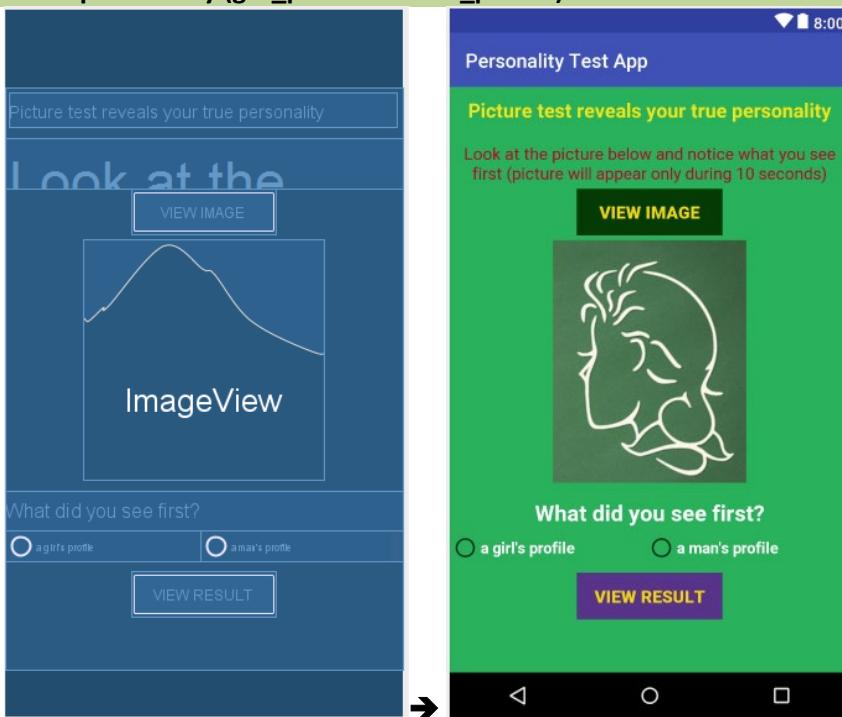


Figure 1: main layout structure of the app

App Function or Operation:

- At first, the app display only “title”, “instruction” and “view image” button. All the other elements such as “test” image, question, 2 answer options and the button “View result” are invisible;
- When users click “view image” button, the “test” image will be visible in ImageView AND being VISIBLE ONLY IN 10 SECONDS THEN DISSAPPEAR.
- When the “Test” image disappears, the “question” and 2 answer options and “View result” button will be visible. Users are now able to select one of 2 options: girl’s profile or man’s profile.
- When users select one of two answer options and click “View result” button, a pop-up window will display the personality of girl’s profile or man’s profile according to the user’s answer.
- If users click “View result” button but they haven’t select one of two answers, the app will ask users to answer the question first and the app will not pop up the personality result;

In terms of **java coding**, we need to:

- Declare few variables for the app: ImageView, TextView, Button, Radio Buttons;
- Use “Thread” in Android to set timer (10 seconds) for ImageView visibility;
- Set click listener for the “View Image” and “View Result” buttons so that when the users click “View Image” button, the “test” image will be displayed during 10 seconds. When users click “View Result” button, the app checks whether users select one of two answer options and display the result on a pop-up window by using **Dialog** library.

PART 1: Create new project & Design main layout

Step 1: Create a new Android Project

Create a **new Android Project** in Android Studio IDE:

- Application name: **Lab_PersonalityTestApp_[yourname]**
- Company Domain: **ac.ames.project.[yourname]**
- Target Android devices: **Phone and Tablet**
 - Minimum SDK: **API 21: Android 5.0**
- Add an Activity to Mobile: **Empty Activity**
 - Activity name: **MainActivity**
 - Layout name: **activity_main**

+ Target devices: run on 71.3% devices
_Smartphone & Tablet
_Android KitKat (5.0) & API21 (min)

Step 2: Prepare resource (images & texts) for the app:

+ First of all, copy below image into the “**drawable**” folder:



Image: test_image.png

+ Then we declare 2 String variables in **strings.xml** file:

Open **strings.xml** file in “**values**” folder and add 2 variables “**girl_profile**” and “**man_profile**”:

```
<resources>
    <string name="app_name">Personality Test App</string>

    <!--Declare String variable: "girl_profile" -->
    <string name="girl_profile">You're an optimist who always shines with positive energy. You're interested in many things around you and always strive to try something new.\n\nSometimes you can be impulsive and may do spur-of-the-moment things. Try to plan ahead and it will help you save time and energy.\n\nYou like to help other people. You're a generous person and know how to share happiness, for example, through volunteer work.\n\nYou're a strong and determined person. Despite any circumstance, you stand firm on your feet and move forward bravely. Keep up the good work! Don't give up! You will definitely get a well-deserved
```

```

award.\n
\nYou're one of those people who don't keep their problems inside and can talk openly about them
with others, and you tend to find a solution together.\n
\nYou evolve and grow as an individual. Constructive criticism, advice, and support of your family
and friends help you in this process.
</string>

<!--Declare String variable: "man_profile"-->
<string name="man_profile">You're a calm, honest, and faithful individual. Many people think you
are reliable and trustworthy.\n
\nYou're a natural leader. You are able to analyse different viewpoints to give a clear decision and
take the initiative, leading the team in the right direction.\n
\nSetting a goal, you thoroughly plan every step of the way and slowly but surely make them one by
one. This approach keeps you away from impulsive and ill-conceived decisions.\n
\nYour scrupulousness makes you a perfectionist. We have to admit that this can exhaust you more than
you think it does. Try to relax more often and let things take their course. The taste of freedom
will help you to relax and put your mind and body in order.\n
</string>

</resources>

```

Step 3: Design Graphic User Interface (GUI): activity_main

+ Now design the **activity_main.xml** layout that contains:

- **TextView: displays “title”** (*Picture test reveals your true personality*),
- **TextView: displays “instruction”** (*Look at the picture below and notice what you see first (picture will appear only during 10 seconds)*)
- **Button: “View Image”** to display “test” image that will appear only in 10 seconds;
- **1 ImageView: for displaying “test” image;**

+ Open and edit the **activity_main.xml** as below:

activity_main.xml:

```

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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:id="@+id/mainScreen"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#29b15b"
    tools:context=".MainActivity">

    <!--TextView: display "title"-->
    <TextView
        android:id="@+id/title"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="5dp"
        android:gravity="center"
        android:padding="5dp"
        android:text="Picture test reveals your true personality"
        android:textColor="#f1e61a"
        android:textSize="20sp"
        android:textStyle="bold" />

    <!--TextView: display "Instruction"-->
    <TextView
        android:id="@+id/instruction"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/title"
        android:layout_marginTop="5dp"
        android:gravity="center"
        android:padding="5dp"
        android:text="Look at the picture below and notice what you see first (picture will appear only
during 10 seconds)"
        android:textColor="#b40929"
        android:textSize="17sp"
        android:textStyle="normal" />

    <!--Button "View Image" -->
    <Button
        android:id="@+id/viewImage"
        android:layout_width="150dp"
        android:layout_height="wrap_content"

```

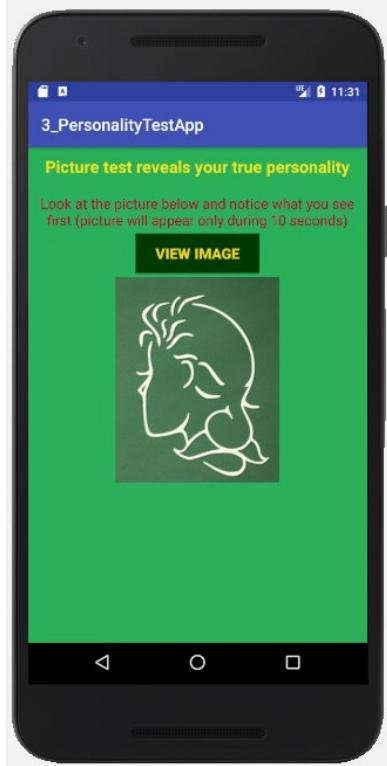
```

    android:layout_below="@+id/instruction"
    android:layout_centerHorizontal="true"
    android:background="#053b05"
    android:gravity="center"
    android:padding="10sp"
    android:text="View Image"
    android:textColor="#efd514"
    android:textSize="18sp"
    android:textStyle="bold" />

<!-- ImageView: display "test" image-->
<ImageView
    android:id="@+id/testImage"
    android:layout_width="250dp"
    android:layout_height="250dp"
    android:layout_below="@+id/viewImage"
    android:layout_centerHorizontal="true"
    android:layout_margin="5dp"
    android:adjustViewBounds="true"
    android:background="@null"
    android:contentDescription="Test Image"
    android:scaleType="fitCenter"
    android:src="@drawable/test_image" />
</RelativeLayout>

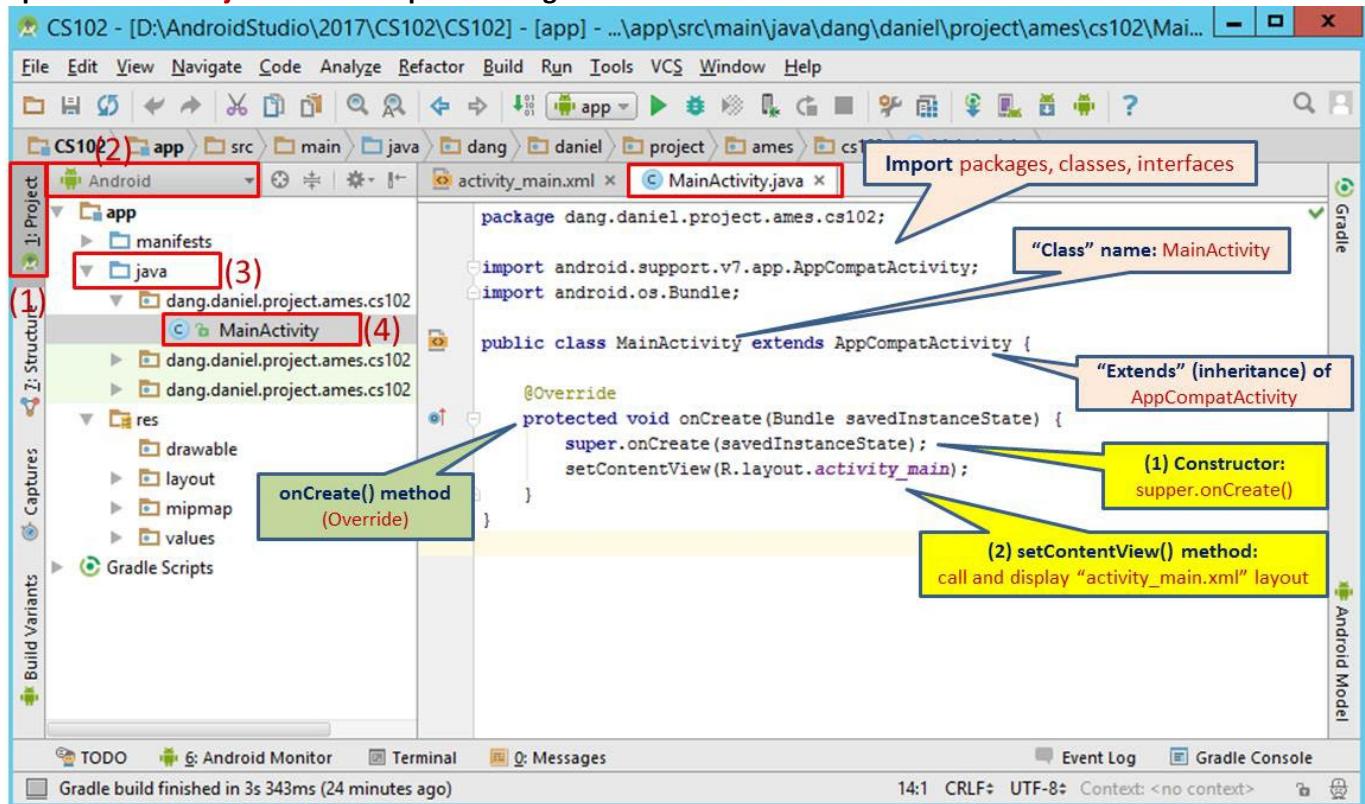
```

+ Run your app on AVD (Nexus 5X) to see the result:



Step 4: Code the MainActivity: java coding

+ Open **MainActivit.java** file and keep the auto-generated code intact:



Look at the “app” function again:

- At first, the app display only “title”, “instruction” and “view image” button. All the other elements such as “test” image, question, 2 answer options and the button “View result” are invisible;
- When users click “view image” button, the “test” image will be visible in ImageView AND being VISIBLE ONLY IN 10 SECONDS THEN DISSAPPEAR.
- When the “Test” image disappears, the “question” and 2 answer options and “View result” button will be visible. Users are now able to select one of 2 options: girl’s profile or man’s profile.
- When users select one of two answer options and click “View result” button, a pop-up window will display the personality of girl’s profile or man’s profile according to the user’s answer.
- If users click “View Result” button but they haven’t select one of two answers, the app will ask users to answer the question first and the app will not pop up the personality result;

+ In terms of **java coding**, we need to:

- Declare few variables for the app: ImageView, TextView, Button;
- Use “Thread” in Android to set timer (10 seconds) for ImageView visibility;
- Set click listener for the “View Image” and “View Result” buttons so that when the users click “View Image” button, the “test” image will be displayed during 10 seconds. When users click “View Result” button, the app checks whether users select one of two answer options and display the result on a pop-up window by using Dialog library.

Now open and edit the **MainActivity.java** as below: Read carefully all the comments so that you can understand the purpose of each java syntax and java code line:

MainActivity.java:

```
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.ImageView;
```

```

public class MainActivity extends AppCompatActivity {
    //////////////////////////////////////////////////////////////////
    //Step 1: Declare variables
    private Button viewImageBtn; //when clicking this button, the imageView will appear in 10 seconds
    private ImageView imageView; //ImageView displays test image
    //////////////////////////////////////////////////////////////////

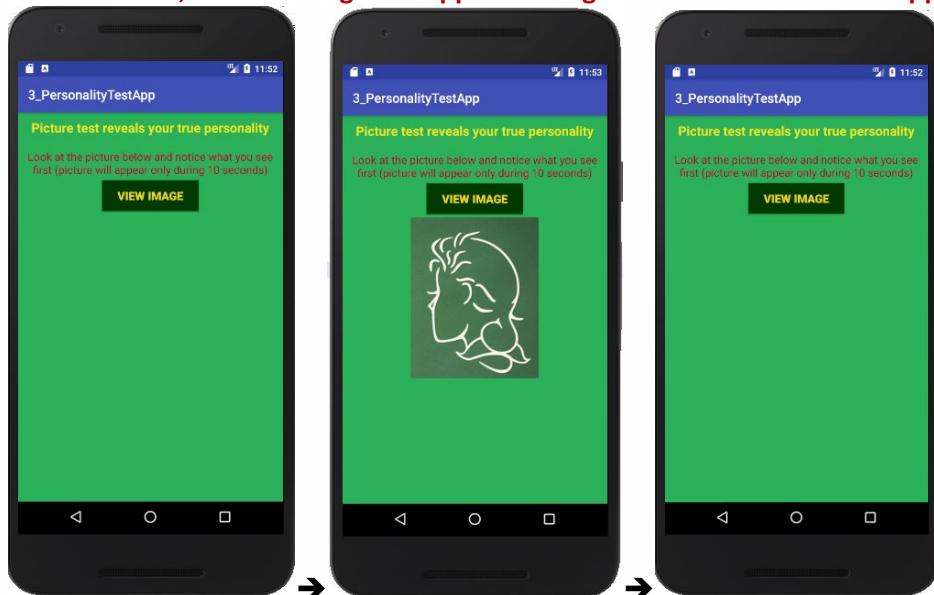
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        //Step 2: Find references and do casting for the UI Widgets
        viewImageBtn = (Button) findViewById(R.id.viewImage);
        imageView = (ImageView) findViewById(R.id.testImage);
        //When app launches, set imageView (displaying testImage) INVISIBLE
        imageView.setVisibility(View.INVISIBLE);

        //Step 3: Set click listener for "viewImageBtn" Button: when users click this Button, the app
        //will set imageView VISIBLE for about 10 seconds and then make it INVISIBLE
        viewImageBtn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                //During 10 seconds, set imageView VISIBLE
                imageView.setVisibility(View.VISIBLE); //Set imageView VISIBLE
                //Use "Thread" in Android to set timer (10 seconds) for ImageView visibility;
                Thread thread = new Thread() {
                    @Override
                    public void run() {
                        //Delay 10 seconds
                        try {
                            Thread.sleep(10000); //Sleep for 10000ms = 10seconds
                        } catch (InterruptedException e) {
                        }
                        //When 10-second delay is over, set imageView INVISIBLE again
                        runOnUiThread(new Runnable() {
                            @Override
                            public void run() {
                                //Set imageView INVISIBLE
                                imageView.setVisibility(View.INVISIBLE); //Set imageView INVISIBLE
                            }
                        });
                    }
                };
                //Start the thread
                thread.start(); //start the thread
            }
        });
    }
}

```

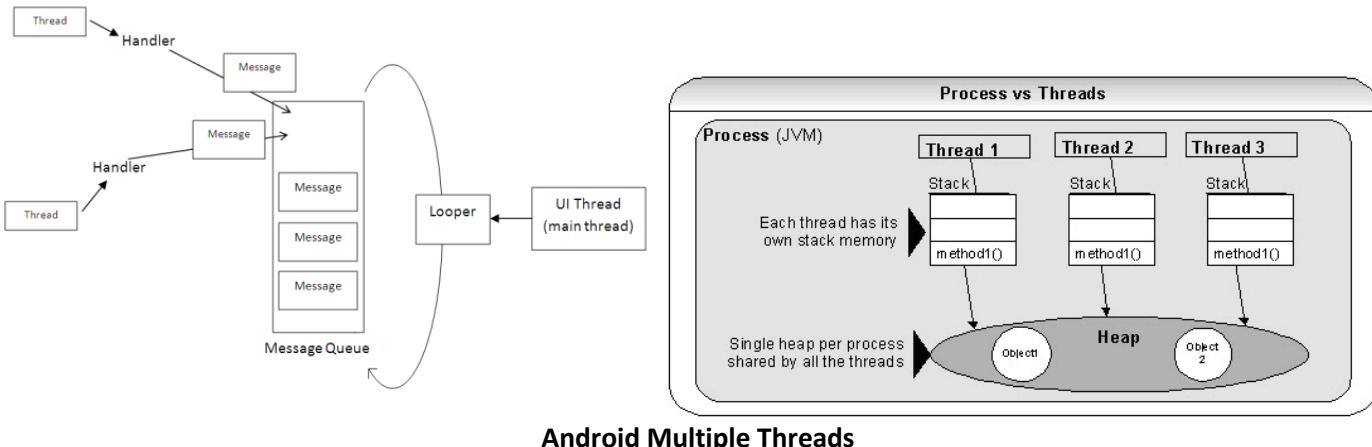
+ Compile and run your app on AVD to see the result: When the app is launched, the test image is invisible. When users click “VIEW IMAGE” button, the test image will appear during 10 seconds and then disappear again.



Explanation java code:

Multiple-thread in Android

There are two different approaches to create a **multi-threaded application** using **threads/handlers** and using **AsynTask**, both of which permit **long-running processing** to be done in the background, while at the same time permit the UI to be updated regularly on the progress.



Multi-threading is defined as a feature through which we can **run two or more concurrent threads of a process**. In this a process, the common data is shared among all these threads also known as sub-processes exclusively. In android there are many ways through which multi-threading can be established in the application.

Multi-Threading in Android is a **unique feature** through which more than one threads execute together without hindering the execution of other threads. Multi-Threading in Android is not different from conventional multi-Threading. A class can be thought of as a process having its method as it's sub-processes or threads. All these methods can run concurrently by using feature of Multi-Threading. In android, multi-Threading can be achieved through the use of **many in-built classes**. Out of them, **Handler** class is most commonly used.

Handler class in Android:

- Handler class come from the **Package android.os.Handler package** and is most commonly used for multi-threading in android. Handler class **provide sending and receiving feature for messages** between different threads and **handle the thread execution** which is associated with that instance of Handler class.
- In android class, every thread is associated with an instance of Handler class and it allows the thread to run along with other threads and communicate with them through messages.

Runnable Interface in Android:

- **Runnable interface** is used in multi-threading to be **called in a loop** when the thread starts. It is a type of thread that executes the statement in its body or calls other methods for a specified or infinite number of times.
- This **Runnable interface** is used by **the Handler class** to execute the multi-threading, i.e., to execute one or more thread in specified time.
- **Runnable** is an interface which is implemented by the class desired to support multithreading and that class must implements it's abstract method public void run().
- **Run() method** is the core of multithreading as it includes the statement or calls to other methods that the thread needs to be made for multithreading.

Read more:

[1]. Java - Multithreading: https://www.tutorialspoint.com/java/java_multithreading.htm

[2]. How to implement Multi-Threading in android with Handler Class: <http://mrbool.com/how-to-implement-multi-threading-in-android-with-handler-class/28175#ixzz4GJOQ78g6>

PART 2: Add “question” (TextView) and 2 answer options (Radio Buttons)

Now, have a look again at the app function:

- At first, the app display only “title”, “instruction” and “view image” button. All the other elements such as “test” image, question, 2 answer options and the button “View result” are invisible;
- When users click “view image” button, the “test” image will be visible in ImageView AND being VISIBLE ONLY IN 10 SECONDS THEN DISSAPPEAR.
- When the “Test” image disappears, the “question” and 2 answer options and “View result” button will be visible. Users are now able to select one of 2 options: girl’s profile or man’s profile.
- When users select one of two answer options and click “View result” button, a pop-up window will display the personality of girl’s profile or man’s profile according to the user’s answer.
- If users click “View Result” button but they haven’t select one of two answers, the app will ask users to answer the question first and the app will not pop up the personality result;

In this part, we will do the below tasks:

- Add a TextView to display “question”: *what did you see first?*
- Add 2 Radio Buttons: display 2 answer options: (1) *A girl’s profile* & (2) *A man’s profile* for users to select;

+ First of all, add TextView, a RadioGroup and 2 Radio Buttons to the main layout:

```
<!--TextView: display "question"-->
<TextView
    android:id="@+id/question"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@+id/testImage"
    android:layout_marginTop="5dp"
    android:gravity="center"
    android:padding="5dp"
    android:text="What did you see first?"
    android:textColor="#FFFFFF"
    android:textSize="23sp"
    android:textStyle="bold" />

<!--RadioGroup: contains 2 answer options: girl's profile and man's profile-->
<RadioGroup
    android:id="@+id/answerGroup"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/question"
    android:layout_centerHorizontal="true"
    android:orientation="horizontal">

    <!--RadioButton: girl's profile option-->
    <RadioButton
        android:id="@+id/girl_profile_answer"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/question"
        android:layout_gravity="center"
        android:layout_marginRight="15dp"
        android:text="a girl's profile"
        android:textColor="#FFFFFF"
        android:textSize="16sp"
        android:textStyle="bold" />

    <!--RadioButton: man's profile option-->
    <RadioButton
        android:id="@+id/man_profile_answer"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/question"
```

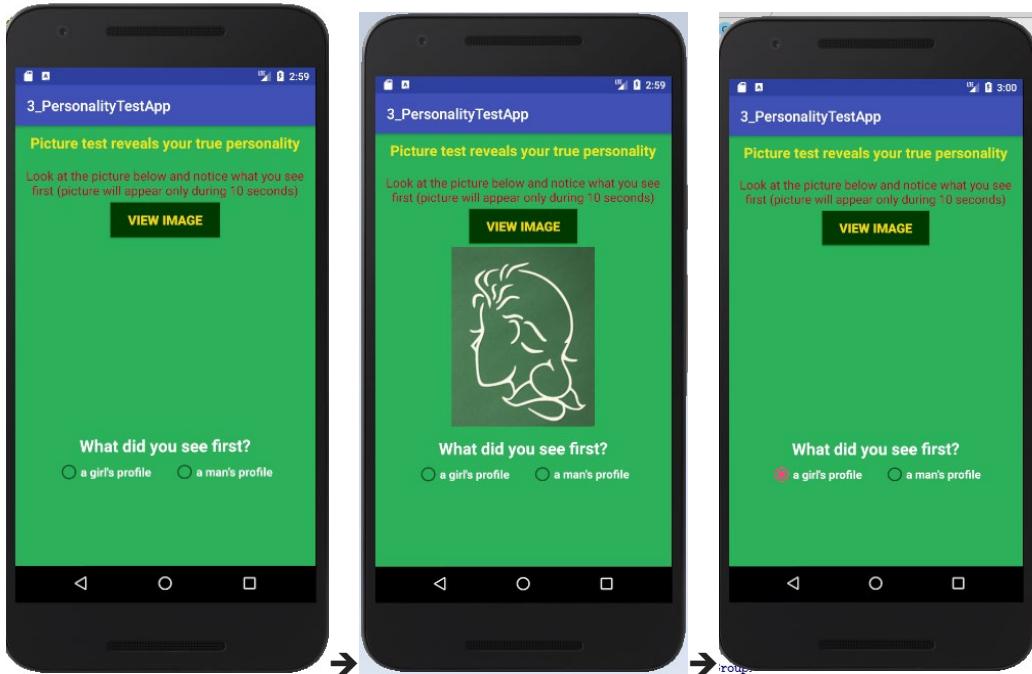
```

    android:layout_gravity="center"
    android:layout_marginLeft="15dp"
    android:text="a man's profile"
    android:textColor="#FFFFFF"
    android:textSize="16sp"
    android:textStyle="bold" />
</RadioGroup>

```

+ Compile and run your app on AVD to see the result:

- The question and answer group is appeared when the app is launched. This is not what we want, we will change it in the java code later;
- When you click “View Image”, the test image will be displayed during 10 seconds and then gone;
- When you select one of answers, nothing happens;



+ Open the **MainActivity** and add new java code to implement below features:

- At first, the app displays only “title”, “instruction” and “view image” button. All the other elements such as “test” image, question, 2 answer options and the button “View result” are invisible;
- When the “Test” image disappears, the “question” and 2 answer options and “View result” button will be visible. Users are now able to select one of 2 options: girl’s profile or man’s profile.

Now open the **MainActivity.java** and follow the below instructions:

Read carefully all the comments so that you can understand the purpose of each java syntax and java code line:

_ Declare a variable “nextBtn” right after the class declaration:

```

//Question & answers panel - 1: Declare variables
private TextView question;//Display question
private RadioGroup answerGroup;//Group of 2 options
private RadioButton girlProfileOption;//Option1: girl profile
private RadioButton manProfileOption;//Option2: man profile

```

_ Inside **onCreate()** method, add code to find reference for above variables and set “question” and “answerGroup” **INVISIBLE** when the app is launched:

```

//Question & answers panel - 2: Find references and do casting for the UI Widgets
question = (TextView) findViewById(R.id.question);
answerGroup = (RadioGroup) findViewById(R.id.answerGroup);
girlProfileOption = (RadioButton) findViewById(R.id.girl_profile_answer);
manProfileOption = (RadioButton) findViewById(R.id.man_profile_answer);
//Set "question", "answerGroup" INVISIBLE when app is launched
question.setVisibility(View.INVISIBLE);
answerGroup.setVisibility(View.INVISIBLE);

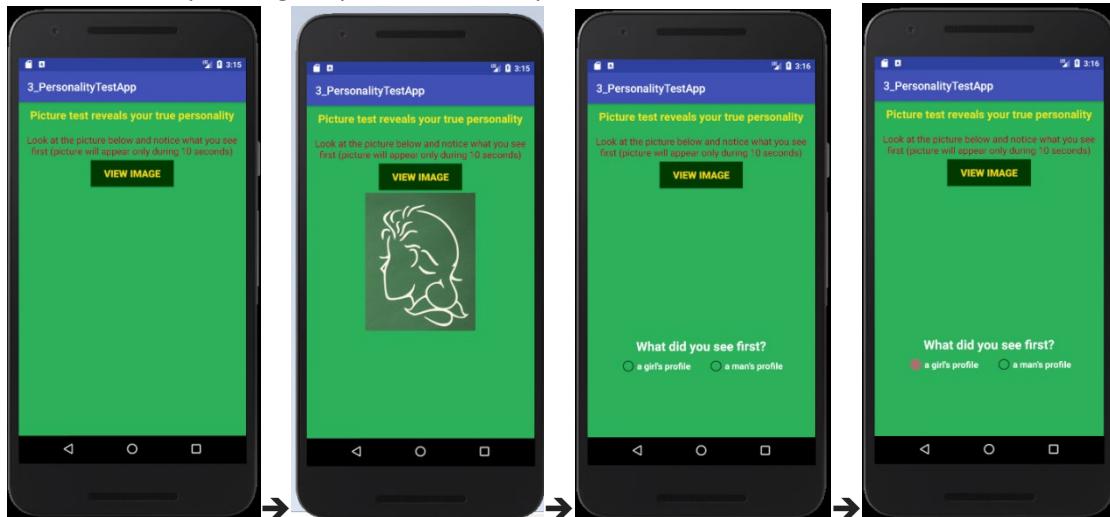
```

Inside onCreate() method, go to the “Thread” section and go to runOnUiThread() method, then run() function: add java code to set question and answer group VISIBLE after 10 seconds when the test image is gone as below:

```
runOnUiThread(new Runnable() {
    @Override
    public void run() {
        //Set imageView INVISIBLE
        imageView.setVisibility(View.INVISIBLE); //Set imageView INVISIBLE
        //Set "question" and "answer group" VISIBLE
        question.setVisibility(View.VISIBLE);
        answerGroup.setVisibility(View.VISIBLE);
    }
});
```

+ Compile and run your app on AVD to see the result:

- At first, the app display only “title”, “instruction” and “view image” button. All the other elements such as “test” image, question and 2 answer options are invisible;
- When the “Test” image disappears, the “question” and 2 answer options will be visible. Users are now able to select one of 2 options: girl’s profile or man’s profile.



PART 3: Add “View Result” Button

Now, have a look again at the app function:

- At first, the app display only “title”, “instruction” and “view image” button. All the other elements such as “test” image, question, 2 answer options and the button “View result” are invisible;
- When users click “view image” button, the “test” image will be visible in ImageView AND being VISIBLE ONLY IN 10 SECONDS THEN DISSAPPEAR.
- When the “Test” image disappears, the “question” and 2 answer options and “View result” button will be visible. Users are now able to select one of 2 options: girl’s profile or man’s profile.
- When users select one of two answer options and click “View result” button, a pop-up window will display the personality of girl’s profile or man’s profile according to the user’s answer.
- If users click “View Result” button but they haven’t select one of two answers, the app will ask users to answer the question first and the app will not pop up the personality result;

In this part, we will do the below tasks:

- Add 1 Button “View Result” to display the relevant personality (girl_profile or man_profile) based on user’s answer;

+ First of all, add a **Button** to the **main layout**:

```
<!--Button "View Result" -->
<Button
    android:id="@+id/viewResult"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_below="@+id/answerGroup"
    android:layout_centerHorizontal="true"
    android:layout_margin="10dp"
    android:background="#583389"
    android:gravity="center"
    android:padding="10sp"
    android:text="View Result"
    android:textColor="#efd514"
    android:textSize="18sp"
    android:textStyle="bold" />
```

+ Open the **MainActivity** and add new java code to implement below feature:

- When users select one of two answer options and click “View result” button, a pop-up window will display the personality of girl’s profile or man’s profile according to the user’s answer.
- If users click “View Result” button but they haven’t select one of two answers, the app will ask users to answer the question first and the app will not pop up the personality result;

Now open the **MainActivity.java** and follow the below instructions:

Read carefully all the comments so that you can understand the purpose of each java syntax and java code line:

Declare a variable “viewResultBtn” right after the class declaration:

```
//View_result - 1: Declare viewResultBtn
private Button viewResultBtn;
```

Inside **onCreate()** method, add code to find reference for “viewResultBtn” and “viewResultBtn” INVISIBLE when the app is launched:

```
//View_result - 2: Find references and do casting for "viewResultBtn"
viewResultBtn = (Button) findViewById(R.id.viewResult);
//Set "viewResultBtn" INVISIBLE when app is launched
viewResultBtn.setVisibility(View.INVISIBLE);
```

Inside onCreate() method, go to the “Thread” section and go to runOnUiThread() method, then run() function: add java code to set question and answer group VISIBLE after 10 seconds when the test image is gone as below:

```

runOnUiThread(new Runnable() {
//When 10-second delay is over, set imageView INVISIBLE again
runOnUiThread(new Runnable() {
    @Override
    public void run() {
        //Set imageView INVISIBLE
        imageView.setVisibility(View.INVISIBLE); //Set imageView INVISIBLE
        //Set "question" and "answer group" VISIBLE
        question.setVisibility(View.VISIBLE);
        answerGroup.setVisibility(View.VISIBLE);
        //Set "viewResultBtn" VISIBLE
        viewResultBtn.setVisibility(View.VISIBLE);
    }
});
}
);

```

Inside onCreate() method, set click listener for “viewResultBtn” and inside check which answer option has been selected, then use Dialog API to pop up a window to display the relevant personality:

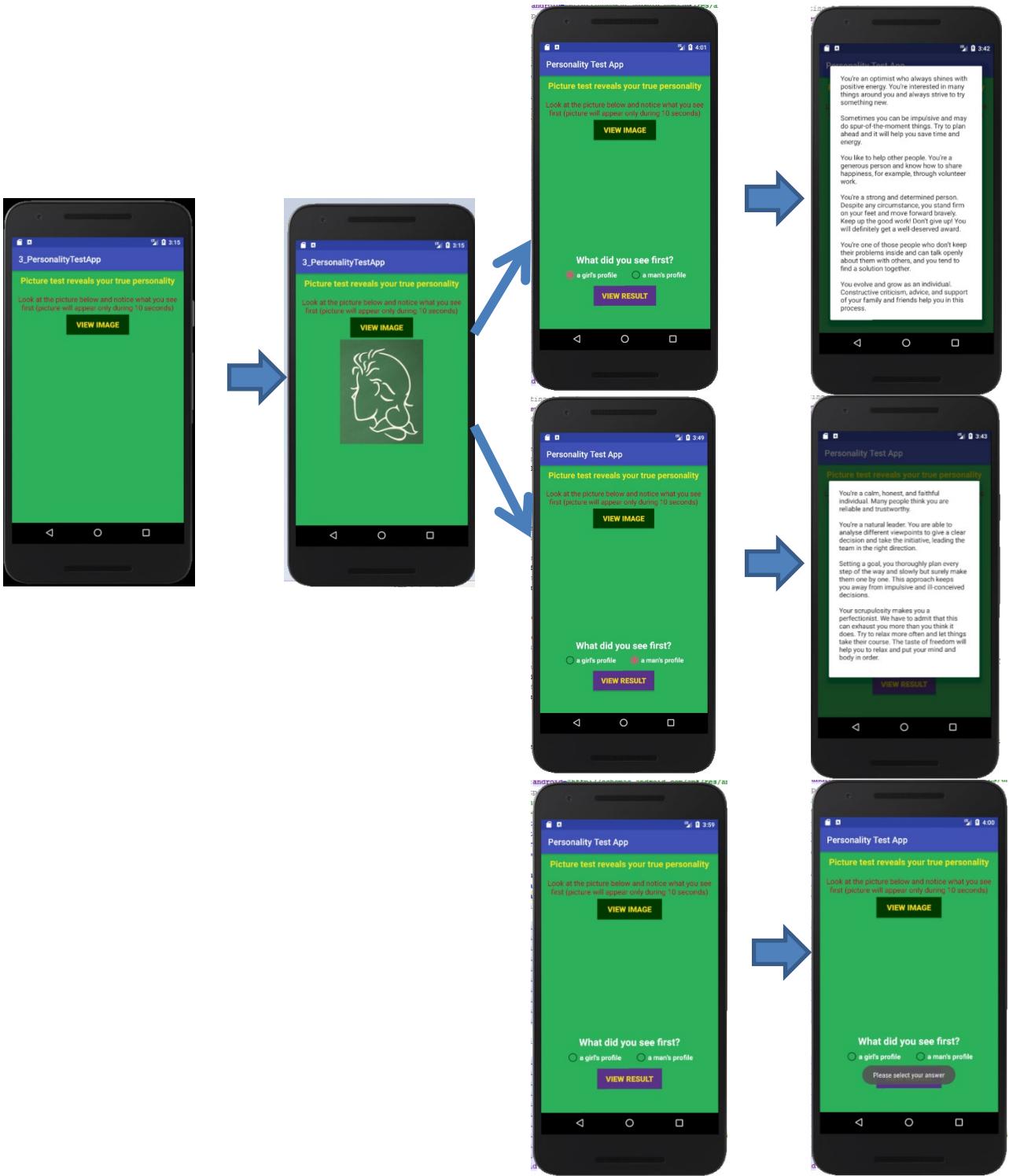
```

//View result - 3: Set click listener for "viewResultBtn" Button and inside check which answer option
//has been selected, then use Dialog API to pop up a window to display the relevant personality:
viewResultBtn.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        //Get selected radio button from radioGroup
        if (girlProfileOption.isChecked()) {
            //1: Retrieve girl_profile string in Strings.xml file
            String girl_profile = getResources().getString(R.string.girl_profile);
            //2: Create a "dialogBuilder" by using AlertDialog.Builder() method
            AlertDialog.Builder dialogBuilder = new AlertDialog.Builder(MainActivity.this);
            //3: Assign the "girl_profile" variable to "dialogBuilder"
            dialogBuilder.setMessage(girl_profile);
            //4: Create a "dialog" object from "DialogBuilder"
            AlertDialog dialog = dialogBuilder.create();
            //5: Display "dialog" on screen
            dialog.show();
        } else if (manProfileOption.isChecked()) {
            //1: Retrieve man_profile string in Strings.xml file
            String man_profile = getResources().getString(R.string.man_profile);
            //2: Create a "dialogBuilder" by using AlertDialog.Builder() method
            AlertDialog.Builder dialogBuilder = new AlertDialog.Builder(MainActivity.this);
            //3: Assign the "man_profile" variable to "dialogBuilder"
            dialogBuilder.setMessage(man_profile);
            //4: Create a "dialog" object from "DialogBuilder"
            AlertDialog dialog = dialogBuilder.create();
            //5: Display "dialog" on screen
            dialog.show();
        } else {
            //If no answer has been selected
            Toast.makeText(getApplicationContext(), "Please select your answer",
Toast.LENGTH_SHORT).show();
        }
    }
});

```

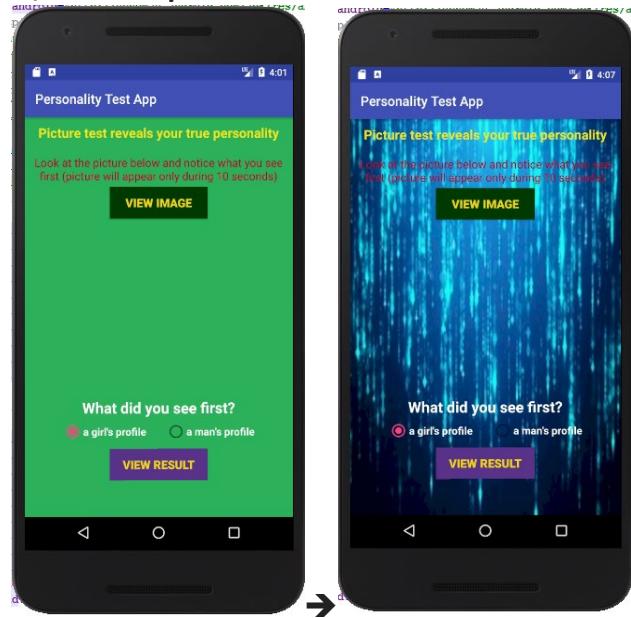
+ Compile and run your app on AVD to see the result:

- At first, the app display only “title”, “instruction” and “view image” button. All the other elements such as “test” image, question, 2 answer options and the button “View result” are invisible;
- When users click “view image” button, the “test” image will be visible in ImageView AND being VISIBLE ONLY IN 10 SECONDS THEN DISAPPEAR.
- When the “Test” image disappears, the “question” and 2 answer options and “View result” button will be visible. Users are now able to select one of 2 options: girl’s profile or man’s profile.
- When users select one of two answer options and click “View result” button, a pop-up window will display the personality of girl’s profile or man’s profile according to the user’s answer.
- If users click “View Result” button but they haven’t select one of two answers, the app will ask users to answer the question first and the app will not pop up the personality result;



Experiment: Improve UI

Change the look of user interface (app style, app name, background color for layout and buttons) according to your own interest, for example:



PART 4: Upload your app on Google App Store

This part will show you how to upload your lab into Google App Store.

Refer to the tutorial: "[0-5-CS102-Publish app on Google App Store.pdf](#)"

Before you publish your apps on Google Play and distribute them to users, you need to get the apps ready, test them, and prepare your promotional materials.

This document helps you **understand the publishing process** and get ready for a successful product launch on Google Play. It summarizes some of the tasks you'll need to complete before **publishing your app on Google Play**, such as **creating a signed, release-ready application package (APK)**, understanding the **requirements of the app**, and **creating the product page** and **graphic assets for each of your apps**.



PART 5: The Most Precise 4-Question Personality Test

(Self-directed learning)

Reading & Convert the below article into a Mobile App

The Most Precise 4-Question Personality Test

Source: <https://brightside.me/inspiration-psychology/the-most-precise-4-question-personality-test-392210/>

The Myers-Briggs Type Indicator (MBTI) was created during World War II to help women get jobs and replace the men who had left to fight. After answering several questions, they got a short report, according to which they could find the most effective work.

Some Western companies still use the Myers-Briggs Type Indicator when selecting candidates for their vacancies. **Bright Side** created a short version of this test with only 4 questions and 2 answer options to each. That's it! The combination of letters will tell you about your personality type.

1. You are totally exhausted because your week was endless and less than great. How are you going to spend your weekend?

- I'll call my friends to ask about their plans. I heard that a new restaurant opened / a nice comedy is playing in the cinemas / there are big discounts at the paintball club. We should all go out together. **E**
- I'll switch on the "Don't disturb" mode on my phone and stay at home. I'll watch a new episode of my favorite TV show, do a puzzle, and take a long bath with a book. **I**



2. Which of these 2 descriptions suits you more?

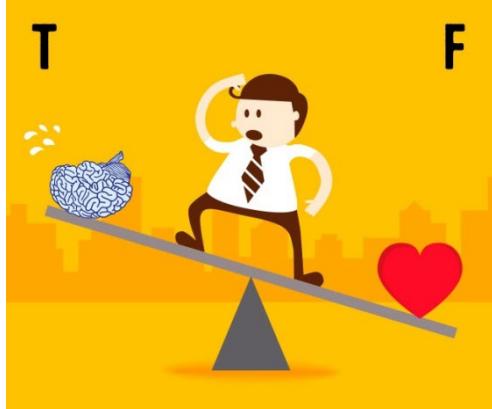
- The most important thing for me is what's happening here and now. I assess real situations and pay attention to details. **S**
- Facts are boring. I love to dream and play over upcoming events in my mind. I rely more on intuition than information. **N**



© Depositphotos

3. A competitor of your current employer is trying to entice you. You have doubts because the salary is much higher there, but the staff here is great. Moreover, the head of your department hinted that he will recommend you to the bosses when he retires. How are you going to make a decision?

- I'll learn all the available information about the competitor, ask my HR manager for advice, and draw a chart with all the pros and cons. In such cases, it's important to weigh up all the arguments and assess the situation with a cold mind. **T**
- I'll listen to my feelings. I always try to follow my heart. **F**



© Depositphotos

4. Only 2 weeks are left before your close friends' wedding. How are the preparations going?

- One month ago, I chose the saxophonist who will play a medley of our school songs / collected the couple's photo love story / composed a poem / pressed my suit / made appointments with the stylist and makeup master. I prefer to be fully armed. **J**
- Why prepare? I'll be having fun and enjoying myself at the party. I'll improvise my wedding speech. The best things happen spontaneously. **P**



And now you can find your personality type according to Myers-Briggs!

ESTJ — MANAGER

Practical and consistent, you like to have order everywhere by planning and organizing everything. But most of all, you like to convince people of your rightness and make them think the way you think. You look at life soberly and, above all, trust facts.

You are open for communication, meeting new people, and spending time at parties. You never forget to take care of your close ones and can express your love very well.

11% men, 6% women

ENTJ — COMMANDER

Life for you is a struggle and extreme. This is how you know yourself and others. Being risky and brave, you are easily inspired to start something new. At the same time, you assess your abilities, both strengths and weaknesses, quite adequately.

You feel new tendencies very well and are open to new ideas. You think positively and adore sport and everything connected to it.

3% men, 1% women

ESFJ — TEACHER

You get along with people very well, and you are the life of any party. You are attentive, caring, and always ready to help, even if you have to sacrifice your personal interests for others.

Yet you are very independent in your deals and, as a rule, you get everything without any side help. You only wait for emotional support from your close ones.

17% women, 8% men

ESTP — MARSHAL

"Participation is more important than victory." This is not about you. You strive to reach your goals by any means, even if you have to use physical strength. You stick to an exact plan, and you can't stand dependence and compromises.

You're a born fighter, very active and self-organized. You can objectively evaluate even the most stressful situation and give a quick and exact response.

6% men, 3% women

ENFJ — MENTOR

You are emotional and talkative with rich facial expressions and gesticulations. You are very empathetic to other people's emotions, and you can spot even the tiniest insincerity. You are very jealous and distrustful in love relationships.

Very often, you are ready to face upcoming events because of your ability to feel them in advance.

3% women, 2% men

ENTP — INVENTOR

The generator of ideas, you are always seeking to create something new. You adapt easily to nonfamiliar environments and master different methods of work easily.

Due to your dislike of traditions and routine, you very often change your professional spheres and hobbies, becoming an innovator and a pioneer. What is important about you is that not only can you create new ideas but you are also able to convey them to others and make them come true.

4% men, 2% women

ESFP — POLITICIAN

You can professionally determine the opportunities of your surroundings, and very often you use this skill to manipulate people. In communication with people, you primarily follow your personal interests. However, you try to impress everybody and create the image of a simple person.

You stand firmly in the present moment, and you don't like to waste time. You want quick results, disliking bureaucracy and red tape.

10% women, 7% men

ENFP — CHAMPION

You are energetic and inquisitive, with very clear creative skills. You combine the features of both introverts and extroverts, which is why not only do you get along with people easily but you also empathize well. You are very good at advising.

You perceive life with all the diversity of its possibilities. You have a very rich imagination and a very high IQ. You're a very harmonious person, able to keep the balance even in a very quickly changing environment.

10% women, 6% men

INFP — HEALER

A lyricist and dreamer, your inner harmony and self-agreement are always in first place. Most of your thinking happens deep inside of you. Nevertheless, you are able to foresee events and understand people well. You like to dress up and try to look good in all circumstances. You can't be called thrifty, and you often lose sense of time and reality.

5% women, 4% men

ISFP — COMPOSER

You can find joy in simple things, handling routine and monotony easily. You like to feel needed, which is why you always help other people but never interfere with their comfort zone. You can't stand conflicts, and you can always entertain people and make them laugh.

You're a very down-to-earth, practical, caring, tender, reliable, and faithful partner. You take this world as it is, never trying to lead and manipulate.

10% women, 8% men

INTP — ARCHITECT

An egghead and philosopher, you don't like too much expressiveness. You always seek calm emotions and comfort. You're very careful when making decisions, preferring to analyze and find connections between the past, present, and future.

You are very sensitive to changes, and you don't handle them easily. You always try to collect all of your facts, thoughts, and ideas, and that's why you are very often tense.

5% men, 2% women

INFJ — ADVISOR

You are perfect at sensing people and their relationships. You can easily identify moods and hidden talents, which is why people seek advice from you. However, you are very vulnerable and can't stand aggression and lack of love. Your driving force is intuition, aimed not outside but inside. This type of person never stops learning, considering self-development to be a main priority. By getting to know yourself, you help others.

2% women, 1% men

INTJ — INSPIRER

You have the richest inner world from where you get your incredible ideas. You strive for excellence and want to improve everything and everybody.

However, you have some difficulties in relationships with people, very often distancing yourself intentionally to demonstrate your independence. You can set priorities and trust your intuition.

3% men, 1% women

ISFJ — PROTECTOR

You can't stand falseness and insincerity in relationships. You distinguish "strangers" and keep them at a distance right away. For the people "inside your circle," you do anything and never ask for anything in return.

You are observant and very careful with words and deeds. Kind and caring, you see your main goal as helping people and making them happier.

19% women, 8% men

ISTP — HANDYMAN

The handyman, as a rule, has a technical mindset and likes to make things by hand. You don't hurry with taking decisions and think that it is better twice measured than once wrong. However, you always meet deadlines and you are very punctual by nature. You perceive this world through feelings, and your opinion of things happening around you is very objective and specific. By nature, you are communicative, but you will refuse communication once you feel insincerity.

9% men, 2% women

ISTJ — INSPECTOR

Thoughtful, pensive, responsible. You are trustworthy, but you never take things as they are, always analyzing the incoming information. You are not interested in long-term communication and prefer official communication only during companionship. You are aimed at the final result.

You like strictness and order, and very often you are pedantic. You don't live in your dreams, only in the "here and now."

15% men, 7% women

Preview photo credit [Depositphotos](#)
Illustrated by Marat Nugumanov for BrightSide.me

Analyze app function & design its user interface

App Graphic User Interface (GUI):

Below is the structure of the main layout:

- The top layout must be **ScrollView** because the layout with 4 questions is too long;
- 2 **TextViews**: for displaying “title” (*Myers–Briggs Type Indicator (MBTI) Test*), “instruction” (*First answer 4 below questions by selecting the option that suit you the most, then you can find your personality type according to Myers–Briggs*);
- 4 **questions sections**: 1 **TextView** to display question, 1 **ImageView** to display illustration image, 1 **RadioGroup** containing 2 **RadioButtons** for 2 answer options;
- 1 **Buttons**: “View Result” to display the relevant personality based on user’s answer;

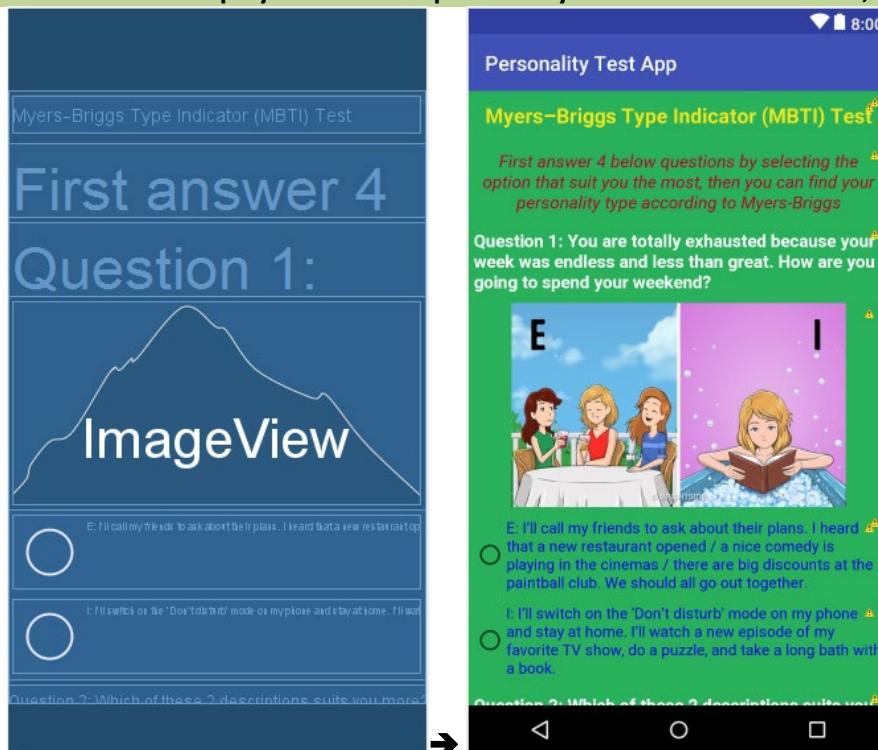


Figure 1: main layout structure of the app

App Function or Operation:

- The app display “title”, “instruction” and 4 questions with illustration image & 2 answer options, “View result” button;
- When users answer all questions and click “View result” button, a pop-up window will display the personality – one of 16 different traits (*ESTJ — MANAGER, ENTJ — COMMANDER, ESFJ — TEACHER, ESTP — MARSHAL, ENTP — INVENTOR, ESFP — POLITICIAN, ENFP — CHAMPION, INFP — HEALER, ISFP — COMPOSER, INTP — ARCHITECT, INTJ — INSPIRER, ISFJ — PROTECTOR, ISTP — HANDYMAN, ISTJ — INSPECTOR*) according to the user’s answer.
- If users click “View result” button but they haven’t answered all questions, the app will ask users to answer questions first and the app will not pop up the personality result;

In terms of **java coding**, we need to:

- Declare few variables for the app: Button, Radio Buttons;
- Set click listener for the “View Result” buttons so that when the click “View Result” button, the app checks whether users answer all questions and then display the result on a pop-up window by using **Dialog** library.

Note: Keep in mind these tests do not measure character, abilities or traits. The important thing to glean from the test is to understand and appreciate the differences in people. It also helps in self-awareness.

Step 1: Create a new Android Project

Create a **new Android Project** in **Android Studio IDE**:

- Application name: **Lab_MBTITestApp_[yourname]**
- Company Domain: **ac.ames.project.[yourname]**
- Target Android devices: **Phone and Tablet**
 - Minimum SDK: **API 21: Android 5.0**
- Add an Activity to Mobile: **Empty Activity**
 - Activity name: **MainActivity**
 - Layout name: **activity_main**

+ **Target devices:** run on 71.3% devices
Smartphone & Tablet
Android KitKat (5.0) & API21 (min)

Step 2: Prepare resource (images & texts) for the app:

+ First of all, copy all 4 illustration images into the “**drawable**” folder:



Illustration_image1.jpg



Illustration_image2.jpg



Illustration_image3.jpg



Illustration_image4.jpg

+ Then we declare 16 String variables in **strings.xml** file:

Open **strings.xml** file in “**values**” folder and add 16 variables representing 16 different personalities:

```
<resources>
    <string name="app_name">Personality Test App</string>

    <!--Declare all personality types according to Myers-Briggs-->
    <!--ESTJ - MANAGER-->
    <string name="estj">ESTJ - MANAGER\n
    \nPractical and consistent, you like to have order everywhere by planning and organizing everything. But most of all, you like to convince people of your rightness and make them think the way you think. You look at life soberly and, above all, trust facts.\n
    \nYou are open for communication, meeting new people, and spending time at parties. You never forget to take care of your close ones and can express your love very well.\n
    \n<b>11% men, 6% women</b>
    </string>

    <!--ENTJ - COMMANDER-->
    <string name="entj">ENTJ - COMMANDER\n
    \nLife for you is a struggle and extreme. This is how you know yourself and others. Being risky and brave, you are easily inspired to start something new. At the same time, you assess your abilities, both strengths and weaknesses, quite adequately.\n
    \nYou feel new tendencies very well and are open to new ideas. You think positively and adore sport and everything connected to it.\n
    \n<b>3% men, 1% women</b>
    </string>

    <!--ESFJ - TEACHER-->
    <string name="esfj">ESFJ - TEACHER\n
    \nYou get along with people very well, and you are the life of any party. You are attentive, caring, and always ready to help, even if you have to sacrifice your personal interests for others.\n
    \nYet you are very independent in your deals and, as a rule, you get everything without any side help. You only wait for emotional support from your close ones.\n
    \n<b>17% women, 8% men</b>
    </string>

    <!--ESTP - MARSHAL-->
    <string name="estp">ESTP - MARSHAL\n
    \n"Participation is more important than victory." This is not about you. You strive to reach your goals by any means, even if you have to use physical strength. You stick to an exact plan, and you can't stand dependence and compromises.\n
    \nYou're a born fighter, very active and self-organized. You can objectively evaluate even the most stressful situation and give a quick and exact response. \n
    <b>6% men, 3% women</b>
    </string>

    <!--ENFJ - MENTOR-->
    <string name="enfj">ENFJ - MENTOR\n
    \nYou are emotional and talkative with rich facial expressions and gesticulations. You are very empathetic to other people's emotions, and you can spot even the tiniest insincerity. You are very jealous and distrustful in love relationships. \n
    \nVery often, you are ready to face upcoming events because of your ability to feel them in advance.\n
    <b>3% women, 2% men</b>
    </string>

    <!--ENTP - INVENTOR-->
```

```

<string name="entp">ENTP - INVENTOR\n
\nThe generator of ideas, you are always seeking to create something new. You adapt easily to non-familiar environments and master different methods of work easily. \n
\nDue to your dislike of traditions and routine, you very often change your professional spheres and hobbies, becoming an innovator and a pioneer. What is important about you is that not only can you create new ideas but you are also able to convey them to others and make them come true. \n
<b>\n4%\ men, 2% women</b>
</string>

<!--ESFP - POLITICIAN-->
<string name="esfp">ESFP - POLITICIAN\n
\nYou can professionally determine the opportunities of your surroundings, and very often you use this skill to manipulate people. In communication with people, you primarily follow your personal interests. However, you try to impress everybody and create the image of a simple person. \n
\nYou stand firmly in the present moment, and you don't like to waste time. You want quick results, disliking bureaucracy and red tape. \n
<b>\n10%\ women, 7% men</b>
</string>

<!--ENFP - CHAMPION-->
<string name="enfp">ENFP - CHAMPION\n
\nYou are energetic and inquisitive, with very clear creative skills. You combine the features of both introverts and extroverts, which is why not only do you get along with people easily but you also empathize well. You are very good at advising. \n
\nYou perceive life with all the diversity of its possibilities. You have a very rich imagination and a very high IQ. You're a very harmonious person, able to keep the balance even in a very quickly changing environment. \n
<b>\n10%\ women, 6% men</b>
</string>

<!--INFP - HEALER-->
<string name="infp">INFP - HEALER\n
\nA lyricist and dreamer, your inner harmony and self-agreement are always in first place. Most of your thinking happens deep inside of you. Nevertheless, you are able to foresee events and understand people well. \n
\nYou like to dress up and try to look good in all circumstances. You can't be called thrifty, and you often lose sense of time and reality. \n
<b>\n5%\ women, 4% men</b>
</string>

<!--ISFP - COMPOSER-->
<string name="isfp">ISFP - COMPOSER\n
\nYou can find joy in simple things, handling routine and monotony easily. You like to feel needed, which is why you always help other people but never interfere with their comfort zone. You can't stand conflicts, and you can always entertain people and make them laugh. \n
\nYou're a very down-to-earth, practical, caring, tender, reliable, and faithful partner. You take this world as it is, never trying to lead and manipulate. \n
<b>\n10%\ women, 8% men</b>
</string>

<!--INTP - ARCHITECT-->
<string name="intp">INTP - ARCHITECT\n
\nAn egghead and philosopher, you don't like too much expressiveness. You always seek calm emotions and comfort. You're very careful when making decisions, preferring to analyze and find connections between the past, present, and future. \n
\nYou are very sensitive to changes, and you don't handle them easily. You always try to collect all of your facts, thoughts, and ideas, and that's why you are very often tense. \n
<b>\n5%\ men, 2% women</b>
</string>

<!--INFJ - ADVISOR-->
<string name="infj">INFJ - ADVISOR\n
\nYou are perfect at sensing people and their relationships. You can easily identify moods and hidden talents, which is why people seek advice from you. However, you are very vulnerable and can't stand aggression and lack of love. \n
\nYour driving force is intuition, aimed not outside but inside. This type of person never stops learning, considering self-development to be a main priority. By getting to know yourself, you help others. \n
<b>\n2% women, 1% men</b>
</string>

<!--INTJ - INSPIRER-->
<string name="intj">INTJ - INSPIRER\n
\nYou have the richest inner world from where you get your incredible ideas. You strive for excellence and want to improve everything and everybody. \n
\nHowever, you have some difficulties in relationships with people, very often distancing yourself intentionally to demonstrate your independence. You can set priorities and trust your intuition. \n
<b>\n3% men, 1% women</b>
</string>

<!--ISFJ - PROTECTOR-->
<string name="isfj">ISFJ - PROTECTOR\n
\nYou can't stand falseness and insincerity in relationships. You distinguish "strangers" and keep them at a distance right away. For the people "inside your circle," you do anything and never ask for anything in return. \n
\nYou are observant and very careful with words and deeds. Kind and caring, you see your main goal as helping people and making them happier. \n
<b>\n19%\ women, 8% men</b>
</string>

<!--ISTP - HANDYMAN-->
<string name="istp">ISTP - HANDYMAN\n
\nThe handyman, as a rule, has a technical mind-set and likes to make things by hand. You don't hurry with taking decisions and think that it is better twice measured than once wrong. \n
\nHowever, you always meet deadlines and you are very punctual by nature. You perceive this world through feelings, and your opinion of things happening around you is very objective and specific. \n
\nBy nature, you are communicative, but you will refuse communication once you feel insincerity. \n

```

```

<b>\n9%\ men, 2%\ women</b>
</string>

<!--ISTJ -- INSPECTOR-->
<string name="istj">ISTJ – INSPECTOR\n
\nThoughtful, pensive and responsible. You are trustworthy, but you never take things as they are, always analyzing the incoming information. You are not interested in long-term communication and prefer official communication only during companionship. You are aimed at the final result. \n
\nYou like strictness and order, and very often you are pedantic. You don't live in your dreams, only in the "here and now." \n
<b>\n15%\ men, 7%\ women</b>
</string>

</resources>

```

Step 3: Design Graphic User Interface (GUI): activity_main

+ Now design the **activity_main.xml** layout that contains:

- The top layout must be **ScrollView** because the layout with 4 questions is too long;
- **2 TextViews:** for displaying “title” (*Myers–Briggs Type Indicator (MBTI) Test*), “instruction” (*First answer 4 below questions by selecting the option that suit you the most, then you can find your personality type according to Myers–Briggs*);
- **4 questions sections:** 1 **TextView** to display question, 1 **ImageView** to display illustration image, 1 **RadioGroup** containing 2 **RadioButtons** for 2 answer options;
- **1 Buttons:** View Result” to display the relevant personality based on user’s answer;

+ Open and edit the **activity_main.xml** as below:

activity_main.xml:

```

<?xml version="1.0" encoding="utf-8"?>
<ScrollView 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"
    android:background="#29b15b"
    tools:context=".MBTI_Test">

    <!--LinearLayout: contain title, 4 questions & its answers, button to display result-->
    <LinearLayout
        android:id="@+id/question_panel"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical">

        <!--TextView: display "title"-->
        <TextView
            android:id="@+id/title"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_margin="5dp"
            android:gravity="center"
            android:padding="5dp"
            android:text="Myers–Briggs Type Indicator (MBTI) Test"
            android:textColor="#f1e61a"
            android:textSize="20sp"
            android:textStyle="bold" />

        <!--TextView: display "Instruction"-->
        <TextView
            android:id="@+id/instruction"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginTop="5dp"
            android:gravity="center"
            android:padding="5dp"
            android:text="First answer 4 below questions by selecting the option that suit you the most, then you can find
            your personality type according to Myers–Briggs"
            android:textColor="#b40929"
            android:textSize="17sp"
            android:textStyle="italic" />

        <!--QUESTION 1, ILLUSTRATION IMAGE, 2 ANSWERS-->
        <!--TextView: display "question1"-->
        <TextView
            android:id="@+id/question1"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginTop="5dp"
            android:gravity="left"
            android:padding="5dp"
            android:text="Question 1: You are totally exhausted because your week was endless and less than great. How are
            you coping with it?" />
    
```

```

you going to spend your weekend?""
    android:textColor="#FFFFFF"
    android:textSize="17sp"
    android:textStyle="bold" />

<!--ImageView: display illustration image for question1-->
<ImageView
    android:id="@+id/illustrationImage1"
    android:layout_width="match_parent"
    android:layout_height="200dp"
    android:layout_gravity="center"
    android:layout_margin="5dp"
    android:adjustViewBounds="true"
    android:background="@null"
    android:contentDescription="Illustration Image1"
    android:scaleType="fitCenter"
    android:src="@drawable/illustration_image1" />

<!--RadioGroup: contains 2 answer options for question 1-->
<RadioGroup
    android:id="@+id/answerGroup1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="left"
    android:orientation="vertical">

    <!--RadioButton: "E" type (Extraversion) -->
    <RadioButton
        android:id="@+id/answerE"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_margin="5dp"
        android:text="E: I'll call my friends to ask about their plans. I heard that a new restaurant opened / a
nice comedy is playing in the cinemas / there are big discounts at the paintball club. We should all go out together."
        android:textColor="#0808ec"
        android:textSize="15sp"
        android:textStyle="normal" />

    <!--RadioButton: "I" type (Introversion) -->
    <RadioButton
        android:id="@+id/answerI"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_margin="5dp"
        android:text="I: I'll switch on the 'Don't disturb' mode on my phone and stay at home. I'll watch a new
episode of my favorite TV show, do a puzzle, and take a long bath with a book."
        android:textColor="#0808ec"
        android:textSize="15sp"
        android:textStyle="normal" />
</RadioGroup>

<!--QUESTION 2, ILLUSTRATION IMAGE, 2 ANSWERS-->
<!--TextView: display "question1"-->
<TextView
    android:id="@+id/question2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="5dp"
    android:gravity="left"
    android:padding="5dp"
    android:text="Question 2: Which of these 2 descriptions suits you more?"
    android:textColor="#FFFFFF"
    android:textSize="17sp"
    android:textStyle="bold" />

<!--ImageView: display illustration image for question2-->
<ImageView
    android:id="@+id/illustrationImage2"
    android:layout_width="match_parent"
    android:layout_height="200dp"
    android:layout_gravity="center"
    android:layout_margin="5dp"
    android:adjustViewBounds="true"
    android:background="@null"
    android:contentDescription="Illustration Image2"
    android:scaleType="fitCenter"
    android:src="@drawable/illustration_image2" />

<!--RadioGroup: contains 2 answer options for question 2-->
<RadioGroup
    android:id="@+id/answerGroup2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="left"
    android:orientation="vertical">

    <!--RadioButton: "S" type (Sensing) -->
    <RadioButton
        android:id="@+id/answerS"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"

```

```

        android:layout_gravity="center"
        android:layout_margin="5dp"
        android:text="S: The most important thing for me is what's happening here and now. I assess real situations
and pay attention to details."
        android:textColor="#0808ec"
        android:textSize="15sp"
        android:textStyle="normal" />

<!--RadioButton: "N" type (Intuition)-->
<RadioButton
    android:id="@+id/answerN"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:layout_margin="5dp"
    android:text="N: Facts are boring. I love to dream and play over upcoming events in my mind. I rely more on
intuition than information."
    android:textColor="#0808ec"
    android:textSize="15sp"
    android:textStyle="normal" />
</RadioGroup>

<!--QUESTION 3: ILLUSTRATION IMAGE, 2 ANSWERS-->
<!--TextView: display "question3"-->
<TextView
    android:id="@+id/question3"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="5dp"
    android:gravity="left"
    android:padding="5dp"
    android:text="Question 3: A competitor of your current employer is trying to entice you. You have doubts because
the salary is much higher there, but the staff here is great. Moreover, the head of your department hinted that he will
recommend you to the bosses when he retires. How are you going to make a decision?"
    android:textColor="#FFFFFF"
    android:textSize="17sp"
    android:textStyle="bold" />

<!--ImageView: display illustration image for question3-->
<ImageView
    android:id="@+id/illustrationImage3"
    android:layout_width="match_parent"
    android:layout_height="200dp"
    android:layout_gravity="center"
    android:layout_margin="5dp"
    android:adjustViewBounds="true"
    android:background="@null"
    android:contentDescription="Illustration Image3"
    android:scaleType="fitCenter"
    android:src="@drawable/illustration_image3" />

<!--RadioGroup: contains 2 answer options for question 3-->
<RadioGroup
    android:id="@+id/answerGroup3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="left"
    android:orientation="vertical">

<!--RadioButton: "T" type (Thinking)-->
<RadioButton
    android:id="@+id/answerT"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:layout_margin="5dp"
    android:text="T: I'll learn all the available information about the competitor, ask my HR manager for
advice, and draw a chart with all the pros and cons. In such cases, it's important to weigh up all the arguments and assess
the situation with a cold mind."
    android:textColor="#0808ec"
    android:textSize="15sp"
    android:textStyle="normal" />

<!--RadioButton: "F" type (Feeling)-->
<RadioButton
    android:id="@+id/answerF"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:layout_margin="5dp"
    android:text="F: I'll listen to my feelings. I always try to follow my heart."
    android:textColor="#0808ec"
    android:textSize="15sp"
    android:textStyle="normal" />
</RadioGroup>

<!--QUESTION 4: ILLUSTRATION IMAGE, 2 ANSWERS-->
<!--TextView: display "question4"-->
<TextView
    android:id="@+id/question4"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="5dp"

```

```

        android:gravity="left"
        android:padding="5dp"
        android:text="Question 4: Only 2 weeks are left before your close friends' wedding. How are the preparations
going?"/>
        android:textColor="#FFFFFF"
        android:textSize="17sp"
        android:textStyle="bold" />

<!--Image View: display illustration image for question4-->
<ImageView
    android:id="@+id/illustrationImage4"
    android:layout_width="match_parent"
    android:layout_height="200dp"
    android:layout_gravity="center"
    android:layout_margin="5dp"
    android:adjustViewBounds="true"
    android:background="@null"
    android:contentDescription="Illustration Image4"
    android:scaleType="fitCenter"
    android:src="@drawable/illustration_image4" />

<!--RadioGroup: contains 2 answer options for question 4-->
<RadioGroup
    android:id="@+id/answerGroup4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="left"
    android:orientation="vertical">

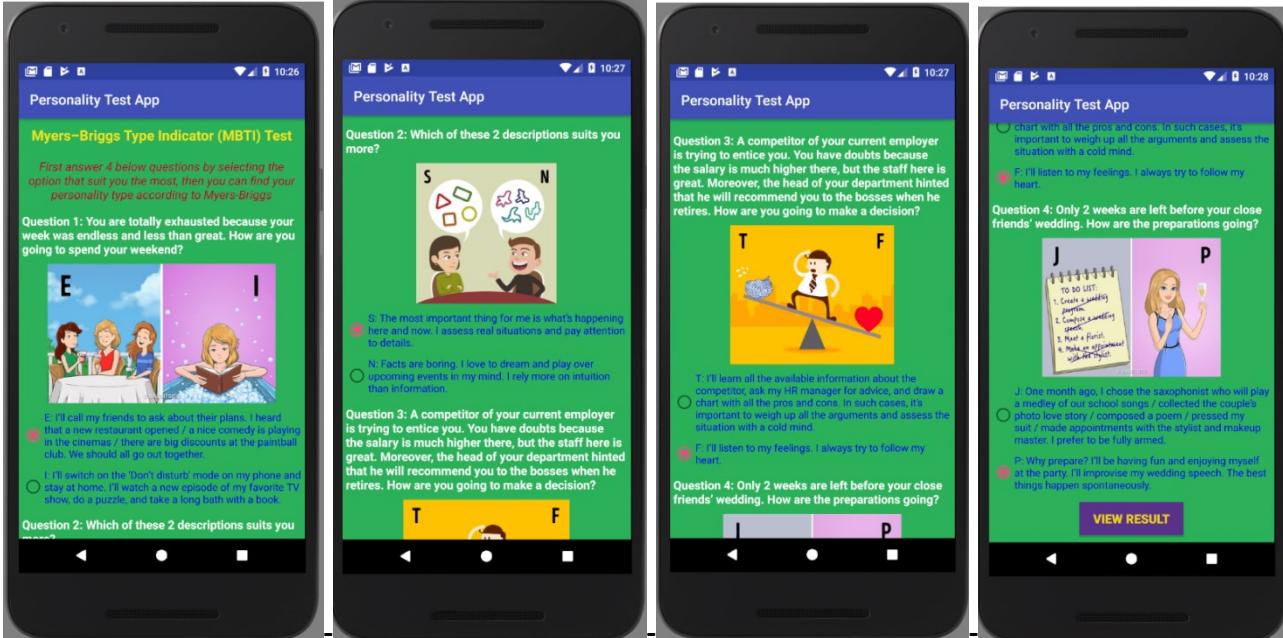
    <!--RadioButton: "J" type (Judging)-->
    <RadioButton
        android:id="@+id/answerJ"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_margin="5dp"
        android:text="J: One month ago, I chose the saxophonist who will play a medley of our school songs /
collected the couple's photo love story / composed a poem / pressed my suit / made appointments with the stylist and makeup
master. I prefer to be fully armed."
        android:textColor="#0808ec"
        android:textSize="15sp"
        android:textStyle="normal" />

    <!--RadioButton: "P" type (Perception)-->
    <RadioButton
        android:id="@+id/answerP"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_margin="5dp"
        android:text="P: Why prepare? I'll be having fun and enjoying myself at the party. I'll improvise my wedding
speech. The best things happen spontaneously."
        android:textColor="#0808ec"
        android:textSize="15sp"
        android:textStyle="normal" />
</RadioGroup>

<!--Button "View Result"-->
<Button
    android:id="@+id/viewResult"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:layout_margin="10dp"
    android:background="#583389"
    android:gravity="center"
    android:padding="10sp"
    android:text="View Result"
    android:textColor="#efd514"
    android:textSize="18sp"
    android:textStyle="bold" />
</LinearLayout>
</ScrollView>

```

+ Run your app on AVD (Nexus 5X) to see the result:



Step 4: Code the MainActivity: java coding

Look at the “app” function again:

- The app display “**title**”, “**instruction**” and 4 questions with illustration image & 2 answer options, “**View result**” button;
- When users answer all questions and click “**View result**” button, a pop-up window will display the personality – one of 16 different traits (**ESTJ — MANAGER, ENTJ — COMMANDER, ESFJ — TEACHER, ESTP — MARSHAL, ENTP — INVENTOR, ESFP — POLITICIAN, ENFP — CHAMPION, INFP — HEALER, ISFP — COMPOSER, INTP — ARCHITECT, INTJ — INSPIRER, ISFJ — PROTECTOR, ISTP — HANDYMAN, ISTJ — INSPECTOR**) according to the user’s answer.
- If users click “**View result**” button but they haven’t answered all questions, the app will ask users to answer questions first and the app will not pop up the personality result;

In terms of **java coding**, we need to:

- Declare few variables for the app: Button, Radio Buttons;
- Set click listener for the “**View Result**” buttons so that when the click “**View Result**” button, the app checks whether users answer all questions and then display the **result** on a pop-up window by using **Dialog** library.

Now open and edit the **MainActivity.java** as below: Read carefully all the comments so that you can understand the purpose of each java syntax and java code line:

MainActivity.java:

```
import android.support.v7.app.AlertDialog;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.RadioButton;
import android.widget.Toast;

public class MBTI_Test extends AppCompatActivity {
    //Step 1: Declare variables
    private RadioButton answerE, answerI;//Answers for question1: Extroversion - Introversion
    private RadioButton answerS, answerN;//Answers for question2: Sensing - Intuition
    private RadioButton answerT, answerF;//Answers for question3: Thinking - Feeling
    private RadioButton answerJ, answerP;//Answers for question4: Judging - Perception
    //View result - 1: Declare viewResultBtn
    private Button viewResultBtn;
```

```

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

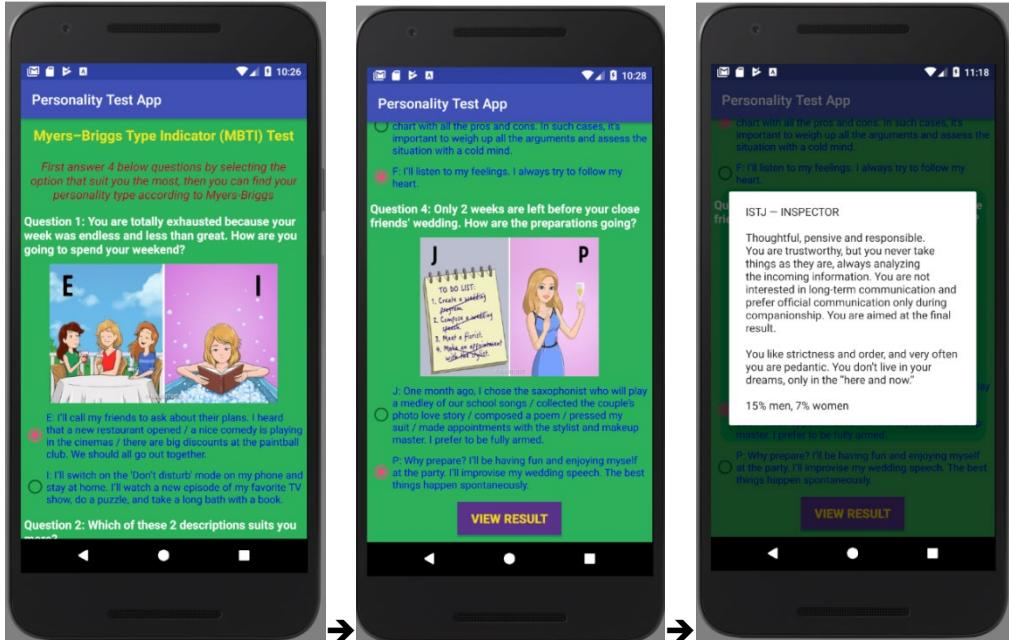
/////////////////////////////// //Step 2: Find references and do casting for the UI Widgets
answerE = (RadioButton) findViewById(R.id.answerE);
answerI = (RadioButton) findViewById(R.id.answerI);
answerS = (RadioButton) findViewById(R.id.answerS);
answerN = (RadioButton) findViewById(R.id.answerN);
answerT = (RadioButton) findViewById(R.id.answerT);
answerF = (RadioButton) findViewById(R.id.answerF);
answerJ = (RadioButton) findViewById(R.id.answerJ);
answerP = (RadioButton) findViewById(R.id.answerP);
viewResultBtn = (Button) findViewById(R.id.viewResult);

/////////////////////////////// //Step 3: Set click listener for "viewResultBtn" Button and inside check which answer option
// has been selected, then use Dialog API to pop up a window to display the relevant personality:
viewResultBtn.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        //////////////////////////////// //Step 4: Check and get answers to form the final result
        String answer_combination = "";
        //-----
        //Get selected answer (radio button) from question1
        if (answerE.isChecked()) {
            answer_combination = answer_combination + "e";
        } else if (answerI.isChecked()) {
            answer_combination = answer_combination + "i";
        } else {
            //If no answer has been selected
            Toast.makeText(getApplicationContext(), "Please answer Question 1", Toast.LENGTH_SHORT).show();
            return;
        }
        //-----
        //Get selected answer (radio button) from question2
        if (answerS.isChecked()) {
            answer_combination = answer_combination + "s";
        } else if (answerN.isChecked()) {
            answer_combination = answer_combination + "n";
        } else {
            //If no answer has been selected
            Toast.makeText(getApplicationContext(), "Please answer Question 2", Toast.LENGTH_SHORT).show();
            return;
        }
        //-----
        //Get selected answer (radio button) from question3
        if (answerT.isChecked()) {
            answer_combination = answer_combination + "t";
        } else if (answerF.isChecked()) {
            answer_combination = answer_combination + "f";
        } else {
            //If no answer has been selected
            Toast.makeText(getApplicationContext(), "Please answer Question 3", Toast.LENGTH_SHORT).show();
            return;
        }
        //-----
        //Get selected answer (radio button) from question4
        if (answerJ.isChecked()) {
            answer_combination = answer_combination + "j";
        } else if (answerP.isChecked()) {
            answer_combination = answer_combination + "p";
        } else {
            //If no answer has been selected
            Toast.makeText(getApplicationContext(), "Please answer Question 4", Toast.LENGTH_SHORT).show();
            return;
        }

        //////////////////////////////// //Step 5: use Dialog API to pop up a window to display the relevant personality
        //i: Retrieve the according personality string in Strings.xml file
        String personality = "";
        switch (answer_combination) {
            case "estj":
                personality = getResources().getString(R.string.estj);
                break;
            case "entj":
                personality = getResources().getString(R.string.entj);
                break;
            case "esfj":
                personality = getResources().getString(R.string.esfj);
                break;
            case "estp":
                personality = getResources().getString(R.string.estp);
                break;
            case "enfj":
                personality = getResources().getString(R.string.enfj);
                break;
            case "entp":

```

+ Compile and run your app on AVD to see the result:



Self-directed learning

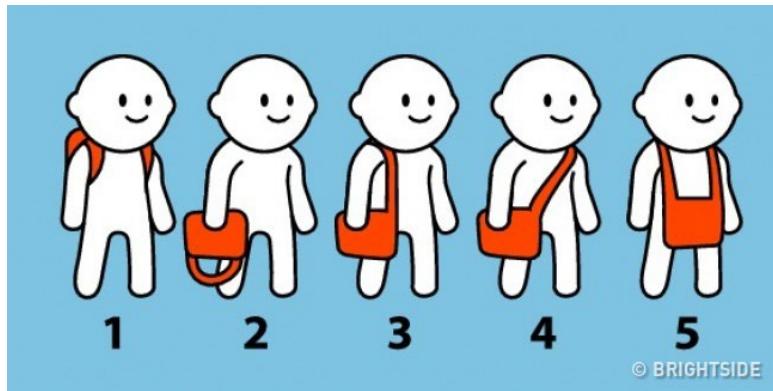
Reading & Convert the below article into a Mobile App

A Surprising Test That Will Reveal the Truth About You

Source: <https://brightside.me/wonder-quizzes/a-surprising-test-that-will-reveal-the-truth-about-you-362060/>

What do our everyday habits, like how we carry a bag, reveal about us? A lot, as it turns out.

Bright Side suggests taking a simple test that will probably surprise you. Just pick the figure that carries a bag the way you do, and then read the result below.



Nº 1. Behind your back

If you prefer a backpack, you're probably always ready for adventure and prepared to go at any moment. You're also very considerate of things and other people alike, making you a person others willingly follow.

Nº 2. In your hand

If you firmly hold your belongings in your hands, complete and utter control over everything is your motto. You love being informed of everything and always have your own opinion. You're able to tell others the whole truth about themselves — if they ask, that is. Your reliability is legendary.

Nº 3. On your shoulder

People who wear a bag on their shoulder love reading: this position allows them to fish out their favorite book even when there's virtually no space for it. They're so tactful that, even if they fall asleep during your monologue, they'll do it with their eyes open while nodding in consent from time to time.

Nº 4. Over your shoulder

If you carry your bag over your shoulder, no criminal will be able to steal your precious cargo. You're a little bit prone to showing off your huge wealth, but you're very generous at the same time. Be careful, though, as some may perceive this trait of yours as a weakness and use you to their own advantage.

Nº 5. On your belly

What was that rushing past you just now? A tornado? Nope, that's a person who carries their bag on their stomach — that's the only way it's not blown away by the wind made thanks to their speed. The eccentricity of such people is often beyond any limits, but this is quite indicative of their quick mind and vivid imagination.

Reading & Convert the below article into a Mobile App

What Is Your Personality Type? Take the Mye5rs-Brigg Type Indicator (MBTI) Personality Test

June 18, 2016 By David Chang

Source: <http://artofthinkingsmart.com/what-is-your-personality-type/>



In 1943, Katharine Cook Briggs and her daughter Isabel Briggs Myers created the famous [Myers Briggs Type Indicator \(MBTI\) personality test](#). You can download and take the test below or take the [online test](#). The pdf will also give you the in-depth details on your personality type.

Want to learn about other personality tests? [Click here to find out!](#)

Inspired by renowned Swiss psychiatrist Carl Jung, they devised a questionnaire that would help identify a person's psychological type. Get your personality type instantly by taking the online test below.

This article goes in-depth on the different:

[Click here to take the Myers-Brigg Type Indicator Online Personality Test](#)

So what does your test mean? Read below for your in-depth analysis. You can download the Myers Brigg Type Indicator Test with valuable information for each of the 16 different personality types below.

This document will show you your:

- **Personality Type Name – Which One Are You?:** *The Giver, The Executive, The Inspirer, The Visionary, The Caregiver, The Performer, The Guardian, The Doer, The Protector, The Idealist, The Scientist, The Thinker, The Nurturer, The Artist, The Duty Fulfilled, The Mechanic*
- **Personality Preferences**
- **Personality Traits**
- **Personality Relationships**
- **Personality Success Definition**
- **Personality Strengths and Weaknesses**
- **Personality Problems and Solutions to Overcome Them**
- **Personality Happin1ess**
- **Personality Suggestions**
- **Personality Rules to Live By**

This [personality test](#) gives you four letters that make up your personality. Learning your MBTI profile is very helpful in understanding yourself, how you deal with others, ideal careers, and your strengths and weaknesses. Some organizations go as far as using the MBTI to assess compatibility with a spouse!

The MBTI sorts people into 16 different personality types broken down by two pairs of cognitive functions.

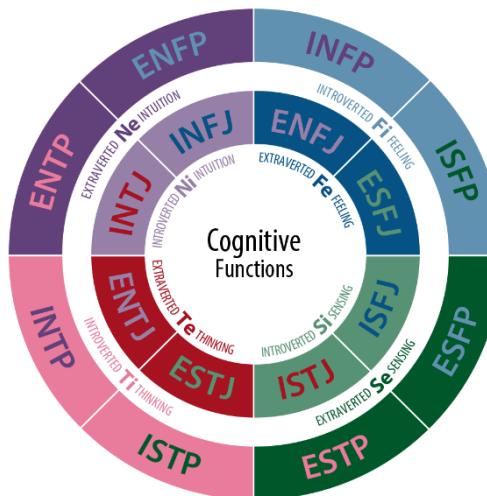
- **The “rational” (judging) functions:** Thinking and Feeling
- **The “irrational” (perceiving) functions:** Sensation and Intuition

The cognitive functions are then broken down into 16 different personality types based on how the functions are paired with each other. After you take the test, you will be given one of the 16 different personality types which is expressed as a four-letter code. For example, based on the Myers Briggs Type Indicator (MBTI) personality test, I am an ESTJ with ENTJ close behind.

The MBTI looks at four aspects of your personality:

- **Favorite world:** What is the orientation of your focus and how are you energized? Do you prefer to focus on the outer world or on your own inner world? This is called [Extraversion \(E\) or Introversion \(I\)](#).
 - **Extraverted Characteristics (E)** – Outgoing, action oriented, seeks breadth of knowledge, frequent interaction and gets energy from spending time with people
 - **Introverted Characteristics (I)** – Reflective, thought oriented, seeks depth of knowledge, substantial interaction and gets energy from spending time alone
- **Information:** How do you take in information and what do you normally pay attention to? Do you prefer to focus on the basic information you take in or do you prefer to interpret and add meaning? This is called [Sensing \(S\) or Intuition \(N\)](#)
 - **Sensing Characteristics (S)** – Lives in the present, uses the five senses for practical and real solutions, memory recall is rich in detail, improvises from past experiences, comfortable with clear and concrete information
 - **Intuition Characteristics (N)** – Lives in the future, looks beyond the five senses for imagination and new solutions, memory recall emphasizes patterns and contexts, improvises from theoretical understanding, comfortable with ambiguous and fuzzy information
- **Decisions:** How do you make decisions and form judgments? When making decisions, do you prefer to first look at logic and consistency or first look at the people and special circumstances? This is called [Thinking \(T\) or Feeling \(F\)](#)
 - **Thinking Characteristics (T)** – Instinctively search for facts and logic, naturally drawn to accomplishing tasks, able to provide objective analysis, accepts conflict as natural
 - **Feeling Characteristics (F)** – Instinctively look at personal feelings and empathy, naturally sensitive to people's needs and reactions, able to seek consensus, unsettled by conflict

- **Structure:** How you deal with the world and what type of lifestyle habits do you prefer? In dealing with the outside world, do you prefer to get things decided or do you prefer to stay open to new information and options? This is called Judging (J) or Perceiving (P)
 - **Judging Characteristics (J)** – Plan details in advance, focus on task-related action, keeps ahead of deadlines, naturally use standard procedures and organization to manage life
 - **Perceiving Characteristics (P)** – Comfortable without details to act, likes to multi-task and have variety, tolerant to deadlines and time pressure, naturally avoid commitments which interfere with flexibility and freedom.



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<https://commons.wikimedia.org/wiki/File:CognitiveFunctions.png#/media/File:CognitiveFunctions.png>

What's Your Personality Type?

Use the questions on the outside of the chart to determine the four letters of your Myers-Briggs type.
For each pair of letters, choose the side that seems most natural to you, even if you don't agree with every description.

- 1. Are you outwardly or inwardly focused? If you:**
- Could be described as talkative, outgoing
 - Like to be in a fast-paced environment
 - Tend to work out ideas with others, think out loud
 - Enjoy being the center of attention
- then you prefer **E** Extraversion

ISTJ
Responsible, sincere, analytical, reserved, private
Prefer a slower pace with time for contemplation
Tend to think things through inside your head
Would rather observe than be the center of attention
then you prefer **I** Introversion

ISFJ
Warm, considerate, gentle, responsible, pragmatic, thorough. Devoted caretakers who enjoy being helpful to others.
then you prefer **I** Introversion

INFJ
Idealistic, organized, insightful, dependable, compassionate, gentle. Seek harmony and cooperation, enjoy intellectual stimulation.
then you prefer **I** Introversion

INTJ
Innovative, independent, strategic, logical, reserved, insightful. Driven by their own original ideas to achieve improvements.
then you prefer **I** Introversion

- 2. How do you prefer to take in information? If you:**
- Focus on the reality of how things are
 - Pay attention to concrete facts and details
 - Prefer ideas that have practical applications
 - Like to describe things in a specific, literal way
- then you prefer **S** Sensing

ESTP
Outgoing, realistic, action-oriented, curious, versatile, spontaneous. Pragmatic problem solvers and skillful negotiators.
then you prefer **N** Intuition

ESFP
Playful, enthusiastic, friendly, spontaneous, tactful, flexible. Have strong common sense, enjoy helping people in tangible ways.
then you prefer **N** Intuition

ENFP
Enthusiastic, creative, spontaneous, optimistic, supportive, playful. Value inspiration, enjoy starting new projects, see potential in others.
then you prefer **N** Intuition

ENTP
Inventive, enthusiastic, strategic, interpreting, speculative, versatile. Enjoy new ideas and challenges, value inspiration.
then you prefer **N** Intuition

- 3. How do you prefer to make decisions? If you:**
- Make decisions in an impersonal way, using logical reasoning
 - Value justice, fairness
 - Enjoy finding the flaws in an argument
 - Could be described as reasonable, level-headed
- then you prefer **T** Thinking

3. How do you prefer to make decisions? If you:

- Make decisions in an impersonal way, using logical reasoning
- Value justice, fairness
- Enjoy finding the flaws in an argument
- Could be described as reasonable, level-headed

then you prefer **T** Thinking

4. How do you prefer to live your outer life? If you:

- Prefer to have matters settled
- Think rules and deadlines should be respected
- Prefer to have detailed, step-by-step instructions
- Make plans, want to know what you're getting into

then you prefer **J** Judging

4. How do you prefer to live your outer life? If you:

- Prefer to leave your options open
- See rules and deadlines as flexible
- Like to improvise and make things up as you go
- Are spontaneous, enjoy surprises and new situations

then you prefer **P** Perceiving

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<https://commons.wikimedia.org/wiki/File:MyersBriggsTypes.png#/media/File:MyersBriggsTypes.png>

Keep in mind these tests do not measure character, abilities or traits. The important thing to glean from the test is to understand and appreciate the differences in people. It also helps in self-awareness.

You can download the test on pdf with the descriptions of each of the 16 different personality types below. It is quite extensive so take some time to learn about yourself and others! You can click below to download the test and results, or user the questions on the page below. It may be better to download it since it will be clearer.

According to the [Center for Applications of Psychological Type](#) the chart below shows the breakdown of each of the 16 different personality types in the U.S. It is broken down by gender and total. The percentage shown below is the estimated percentage of people that have that particular personality type.

**Estimated Frequencies
of the Types in the United States Population**

TOTAL		ISTJ 11-14%	ISFJ 9-14%	INFJ 1-3%	INTJ 2-4%
E 45-53%	I 47-55%	ISTP 4-6%	ISFP 5-9%	INFP 4-5%	INTP 3-5%
	N 26-34%	ESTP 4-5%	ESFP 4-9%	ENFP 6-8%	ENTP 2-5%
	F 50-60%	ESTJ 8-12%	ESFJ 9-13%	ENFJ 2-5%	ENTJ 2-5%
	P 40-46%				
FEMALES		ISTJ 7-10%	ISFJ 15-20%	INFJ 2-4%	INTJ 1-3%
E 45-55%	I 45-55%	ISTP 2-3%	ISFP 6-10%	INFP 4-7%	INTP 1-3%
	N 25-30%	ESTP 2-4%	ESFP 7-10%	ENFP 8-10%	ENTP 2-4%
	F 65-76%	ESTJ 6-8%	ESFJ 12-17%	ENFJ 3-6%	ENTJ 1-4%
	P 40-45%				
MALES		ISTJ 14-19%	ISFJ 6-8%	INFJ 1-2%	INTJ 2-6%
E 45-50%	I 50-55%	ISTP 6-9%	ISFP 4-8%	INFP 3-5%	INTP 4-7%
	N 28-35%	ESTP 5-6%	ESFP 3-7%	ENFP 5-7%	ENTP 3-7%
	F 33-45%	ESTJ 10-12%	ESFJ 5-8%	ENFJ 1-3%	ENTJ 3-6%
	P 42-48%				

MBTI Personality Type Test

1. At a party do you:
 - a. Interact with many, including strangers
 - b. Interact with a few, known to you
2. Are you more:
 - a. Realistic than speculative
 - b. Speculative than realistic
3. Is it worse to:
 - a. Have your "head in the clouds"
 - b. Be "in a rut"
4. Are you more impressed by:
 - a. Principles
 - b. Emotions
5. Are more drawn toward the:
 - a. Convincing
 - b. Touching
6. Do you prefer to work:
 - a. To deadlines
 - b. Just "whenever"
7. Do you tend to choose:
 - a. Rather carefully
 - b. Somewhat impulsively
8. At parties do you:
 - a. Stay late, with increasing energy
 - b. Leave early with decreased energy
9. Are you more attracted to:
 - a. Sensible people
 - b. Imaginative people
10. Are you more interested in:
 - a. What is actual
 - b. What is possible
11. In judging others are you more swayed by:
 - a. Laws than circumstances
 - b. Circumstances than laws
12. In approaching others is your inclination to be somewhat:
 - a. Objective
 - b. Personal
13. Are you more:
 - a. Punctual
 - b. Leisurely
14. Does it bother you more having things:
 - a. Incomplete
 - b. Completed
15. In your social groups do you:
 - a. Keep abreast of other's happenings
 - b. Get behind on the news
16. In doing ordinary things are you more likely to:
 - a. Do it the usual way
 - b. Do it your own way
17. Writers should:
 - a. "Say what they mean and mean what they say"
 - b. Express things more by use of analogy
18. Which appeals to you more:
 - a. Consistency of thought
 - b. Harmonious human relationships
19. Are you more comfortable in making:
 - a. Logical judgments
 - b. Value judgments
20. Do you want things:
 - a. Settled and decided
 - b. Unsettled and undecided
21. Would you say you are more:
 - a. Serious and determined
 - b. Easy-going
22. In phoning do you:
 - a. Rarely question that it will all be said
 - b. Rehearse what you'll say
23. Facts:
 - a. "Speak for themselves"
 - b. Illustrate principles
24. Are visionaries:
 - a. somewhat annoying
 - b. rather fascinating
25. Are you more often:
 - a. a cool-headed person
 - b. a warm-hearted person
26. Is it worse to be:
 - a. unjust
 - b. merciless

27. Should one usually let events occur:
a. by careful selection and choice
b. randomly and by chance
28. Do you feel better about:
a. having purchased
b. having the option to buy
29. In company do you:
a. initiate conversation
b. wait to be approached
30. Common sense is:
a. rarely questionable
b. frequently questionable
31. Children often do not:
a. make themselves useful enough
b. exercise their fantasy enough
32. In making decisions do you feel more comfortable with:
a. standards
b. feelings
33. Are you more:
a. firm than gentle
b. gentle than firm
34. Which is more admirable:
a. the ability to organize and be methodical
b. the ability to adapt and make do
35. Do you put more value on:
a. infinite
b. open-minded
36. Does new and non-routine interaction with others:
a. stimulate and energize you
b. tax your reserves
37. Are you more frequently:
a. a practical sort of person
b. a fanciful sort of person
38. Are you more likely to:
a. see how others are useful
b. see how others see
39. Which is more satisfying:
a. to discuss an issue thoroughly
b. to arrive at agreement on an issue
40. Which rules you more:
a. your head
b. your heart
41. Are you more comfortable with work that is:
a. contracted
b. done on a casual basis
42. Do you tend to look for:
a. the orderly
b. whatever turns up
43. Do you prefer:
a. many friends with brief contact
b. a few friends with more lengthy contact
44. Do you go more by:
a. facts
b. principles
45. Are you more interested in:
a. production and distribution
b. design and research
46. Which is more of a compliment:
a. "There is a very logical person."
b. "There is a very sentimental person."
47. Do you value in yourself more that you are:
a. unwavering
b. devoted
48. Do you more often prefer the
a. final and unalterable statement
b. tentative and preliminary statement
49. Are you more comfortable:
a. after a decision
b. before a decision
50. Do you:
a. speak easily and at length with strangers
b. find little to say to strangers
51. Are you more likely to trust your:
a. experience
b. hunch
52. Do you feel:
a. more practical than ingenious
b. more ingenious than practical
53. Which person is more to be complimented
– one of:
a. clear reason
b. strong feeling

54. Are you inclined more to be:
 a. fair-minded
 b. sympathetic
55. Is it preferable mostly to:
 a. make sure things are arranged
 b. just let things happen
56. In relationships should most things be:
 a. re-negotiable
 b. random and circumstantial
57. When the phone rings do you:
 a. hasten to get to it first
 b. hope someone else will answer
58. Do you prize more in yourself:
 a. a strong sense of reality
 b. a vivid imagination
59. Are you drawn more to:
 a. fundamentals
 b. overtones
60. Which seems the greater error:
 a. to be too passionate
 b. to be too objective
61. Do you see yourself as basically:
 a. hard-headed
 b. soft-hearted
62. Which situation appeals to you more:
 a. the structured and scheduled
 b. the unstructured and unscheduled
63. Are you a person that is more:
 a. routinized than whimsical
 b. whimsical than routinized
64. Are you more inclined to be:
 a. easy to approach
 b. somewhat reserved
65. In writings do you prefer:
 a. the more literal
 b. the more figurative
66. Is it harder for you to:
 a. identify with others
 b. utilize others
67. Which do you wish more for yourself:
 a. clarity of reason
 b. strength of compassion
68. Which is the greater fault:
 a. being indiscriminate
 b. being critical
69. Do you prefer the:
 a. planned event
 b. unplanned event
70. Do you tend to be more:
 a. deliberate than spontaneous
 b. spontaneous than deliberate

Scoring

	Col 1		Col 2		Col 3		Col 4		Col 5		Col 6		Col 7	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B
1		2			3		4		5		6		7	
8		9			10		11		12		13		14	
15		16			17		18		19		20		21	
22		23			24		25		26		27		28	
29		30			31		32		33		34		35	
36		37			38		39		40		41		42	
43		44			45		46		47		48		49	
50		51			52		53		54		55		56	
57		58			59		60		61		62		63	
64		65			66		67		68		69		70	
Copy to →					Copy to →					Copy to →				
	E	I			S	N			T	F			J	P

1. Copy your answers to this answer key carefully.
2. Count the number of checks in each of the A and B columns, and total at the bottom.
3. Copy the totals for Column 2 to the spaces below the totals for Column 3. Do the same for Columns 4 and 6.
4. Add totals downwards to calculate your totals.
5. Circle the letter with this highest score. This is your type.

Read more: <http://www.businessinsider.com/the-personality-types-that-earn-the-most-and-least-money-2015-2#ixzz3d00JHPkH>

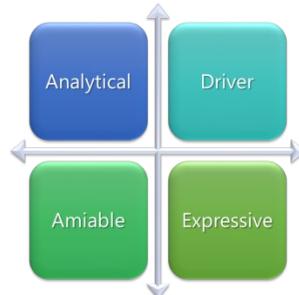
Reading & Convert the below article into a Mobile App

What's Your Social Style?

September 30, 2015 By David Chang

Source: <http://artofthinkingsmart.com/whats-your-social-style/>

What's Your Social Style?



Why is it so hard to work well with some people? Why is it that some people are so defensive or too aggressive? In *People Styles at Work* by Robert Bolton and Dorothy Grover Bolton they found four unique behavioral patterns and created the Social Style Model. Being aware of your own social style helps a person better understand how they interact with others, develop relationships, get work done, and make decisions.

The test their findings help reveal the strengths and weaknesses of four different people styles. At work, and in other spheres of life, how well you relate with others affects your ability to get things done. What you may not realize is that all people exhibit one of several different behavioral "styles," which determine how they think, make decisions, communicate, manage time and stress, and deal with conflict.

By understanding which "people style" you're dealing with, you can establish rapport with someone more easily, become more persuasive, and avoid miscommunication and the possibility of rubbing someone the wrong way. By knowing your style and those of others, especially ones you work with, you can find the best ways to work with them.

Take the test below! (Click to view larger picture) – For each question, circle L or R, or either A or B. Circle what first comes to you and try not to think too much! Add up the number of each letter you have. You can have no more than 9 of each letter and the combination of each set (L/R or A/B) can be no more 9. The total of each of the 4 letters will equal 18.

- Column 1 or L = Less Assertive (Less direct and energy, more easy-going)
- Column 2 or R = More Assertive (More direct and energy, emphatic)
- Column 3 or A = Less Responsive (More reserved, logical, task-oriented)
- Column 4 or B = More Responsive (More expressive, people-oriented)

1	L	R		More likely to lean backward when stating opinions More likely to be erect or lean forward when stating opinions	11	L	R		Less apt to exert pressure for action More apt to exert pressure for action
2		A	B	Less use of hands when talking More use of hands when talking	12		A	B	Less apt to show feelings More apt to show feelings
3	L	R		Demonstrates less energy Demonstrates more energy	13	L	R		More tentative when expressing opinions Less tentative when expressing opinions
4		A	B	More controlled by body movement More flowing body movement	14		A	B	More task-oriented conversations More people-oriented conversations
5	L	R		Less forceful gestures More forceful gestures	15	L	R		Slower to resolve problem situations Quicker to resolve problem situations
6		A	B	Less facial expressiveness More facial expressiveness	16		A	B	More oriented toward facts and logic More oriented toward feelings and opinion
7	L	R		Softer-spoken Louder voice	17	L	R		Slower-paced Faster-paced
8		A	B	Appears more serious Appears more fun-loving	18		A	B	Less likely to use small talk or tell stories More likely to use small talk or tell stories
9	L	R		More likely to ask questions Less likely to ask make statements					Add up the number of each column for your total scores
10		A	B	Less inflection in voice More inflection in voice		L	R	A	B

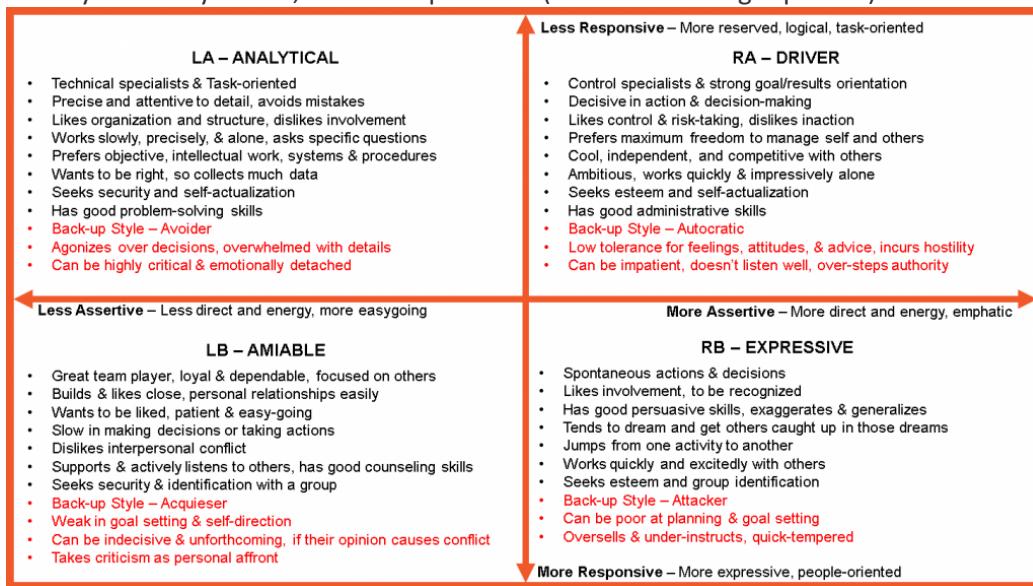
After you are done with the test and add up the number of each letter, pick your top two. You will either be LA, LB, RA, or RB. For example here are my scores:

- L = 8
- R = 1
- A = 2
- B = 7

My top two are L and B, so my Social Style is **LB**. So what does this mean? The authors found that there are two main traits we exhibit when dealing with people: how assertive we are, and how responsive we are.

- Column 1 or L = Less Assertive (Less direct and energy, more easygoing)
- Column 2 or R = More Assertive (More direct and energy, emphatic)
- Column 3 or A = Less Responsive (More reserved, logical, task-oriented)
- Column 4 or B = More Responsive (More expressive, people-oriented)

Here are the corresponding letters with four different social styles type: LA – Analytical, LB – Amiable, RA -Driver, RB – Expressive. Since my Social Style is LB, I am an Expressive! (Click to view larger picture)



This shows how you relate to others and how you get things done, manage time, make decisions, how you think, and more. The description in black shows our strengths, what we prefer and how we are. The red shows our weaknesses and what we have to be aware of in ourselves and others.

The main point is understanding how we come across to others and being able to read the body language, tone, and behavior of others so we can find the best way to work with them. The authors found that when we recognize this, we can make small adjustments that can dramatically increase the quality and productivity of our interactions with others.

So which is the best Social Style? The best style is **YOUR** style! The key thing is to not change who you are, but be a better version of yourself by leveraging your strengths. As an *expressive* it will be a waste for me to try to mimic another social style. We need to embrace our style and make the best of it!

For more information you can read *People Styles at Work* by Robert Bolton and Dorothy Grover Bolton. The book describes in greater detail the strengths and weaknesses of the four different people styles. It also provides practical techniques that work both on the job and off.