Course Lecturer: Dr. George Violettas   **Lab Instructor:** Eng. Hoda Elsayed
Spring Semester 2022

Expected Time: 2 hrs
Student Name: Amaan Ahmed Zubairi   200226

Objectives

The objective of this lab is to:
- *Build a multi-screens mobile application &learning using intent for navigation*
- *Learn about relative & linear layouts & views (e.g. TextView, ImageView, EditText, Spinner, Buttons)*

Submission Style:

- Add screenshot of the app screen you built in this template then attach it to Moodle
- Submit the project as .zip file as well that you saved using Android Studio IDE
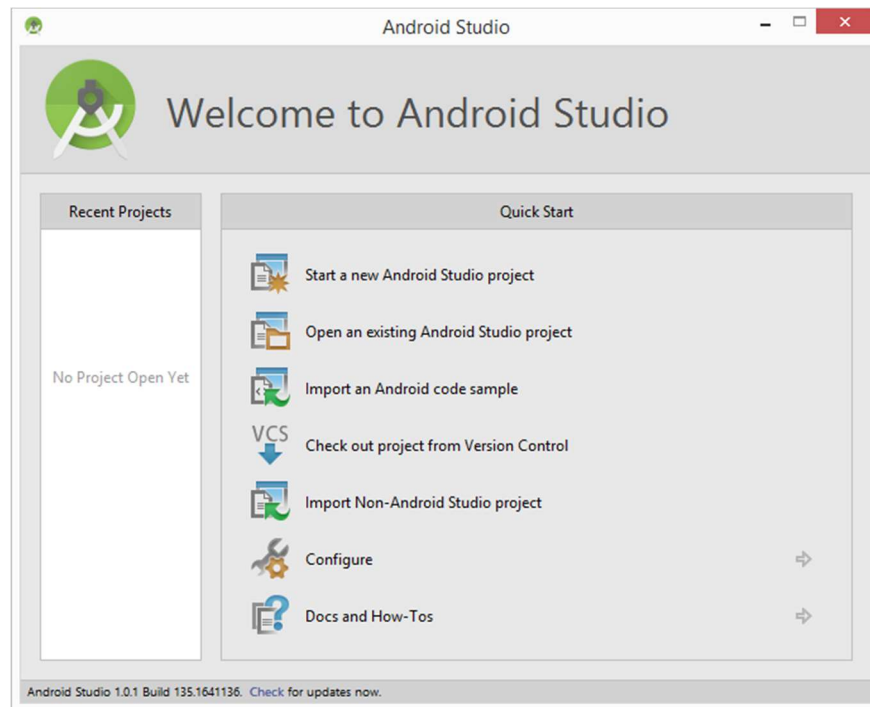- Under Competitions forum, add only the layout screenshots for top 3 designs voting ^_^

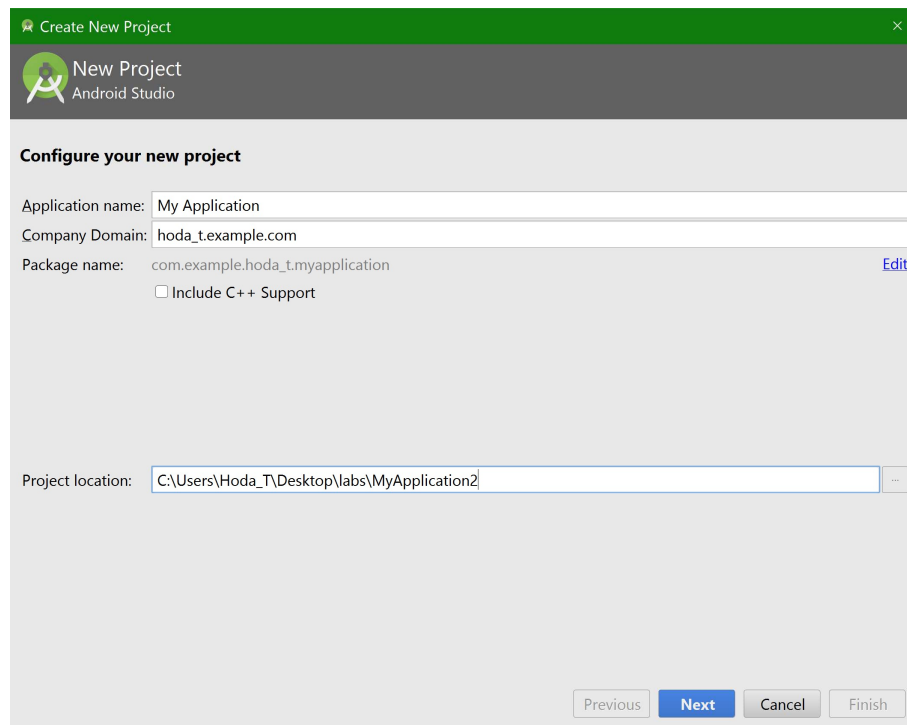| Ex#	Grade	Out of	Grader Comment(s)
1		10	
Total		**10**	
Signature			

Create a project on Android Studio

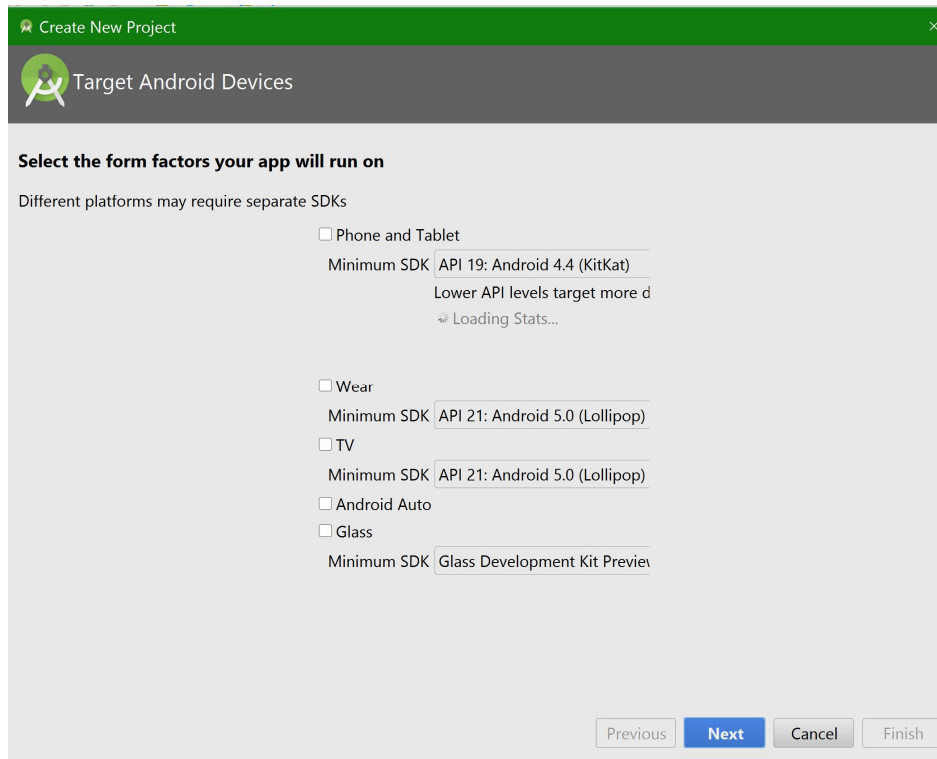After clicking android Studio's icon, follow the following steps to create a new project on Android Studio:

1- Click start a new android studio project

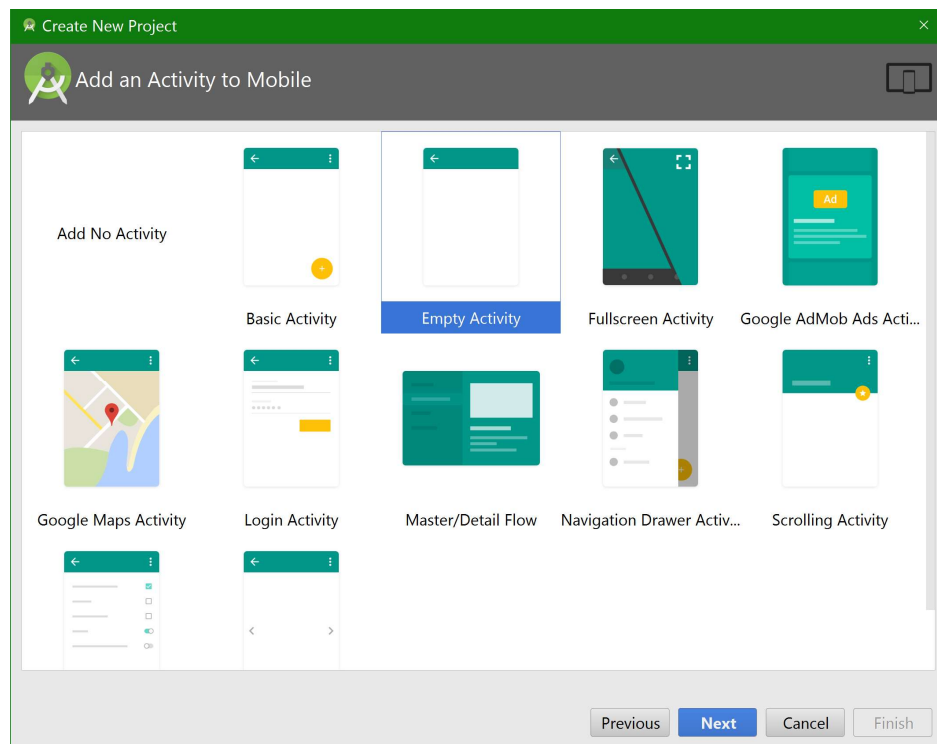

2- Give it a proper name and specify the location in which the project will be saved then click next
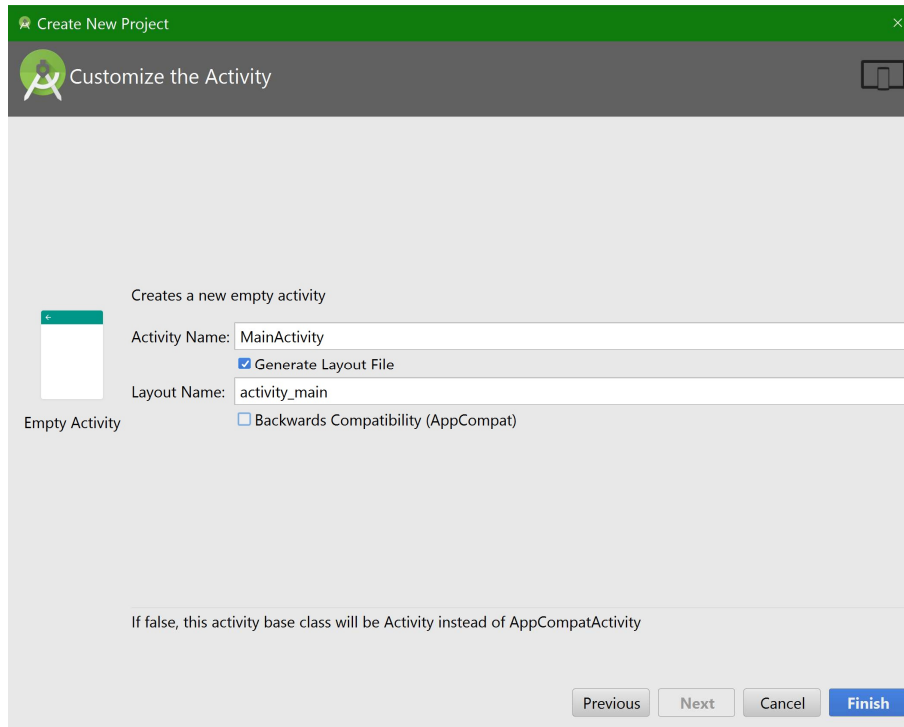

3- Specify the type of development you want to perform by checking the phone and tablet option and then choose API 19

4- Click on empty activity then click next
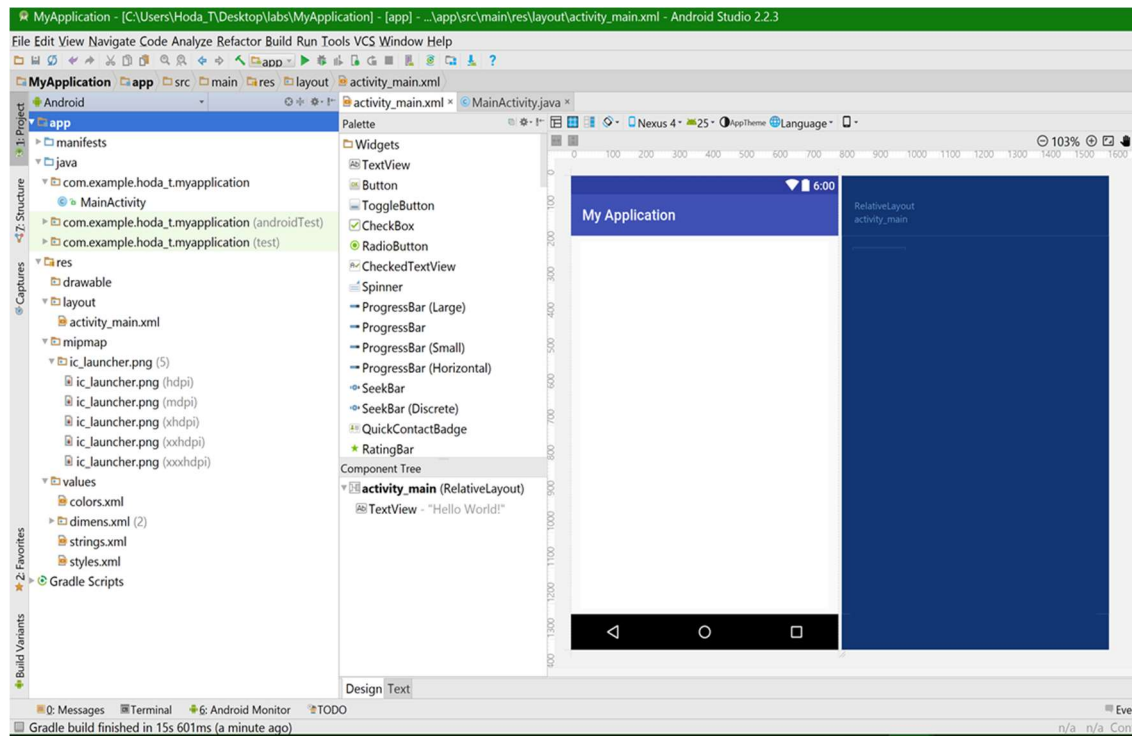

5- Give your activity a meaningful name (e.g. Hello World), or you can keep the default as MainActivity then check the generate layout file option and uncheck compatibility option then click finish

6- After clicking finish, you should see the following IDE now

7- To add a new activity, right click app under android options then choose new → activity → empty activity as shown below:
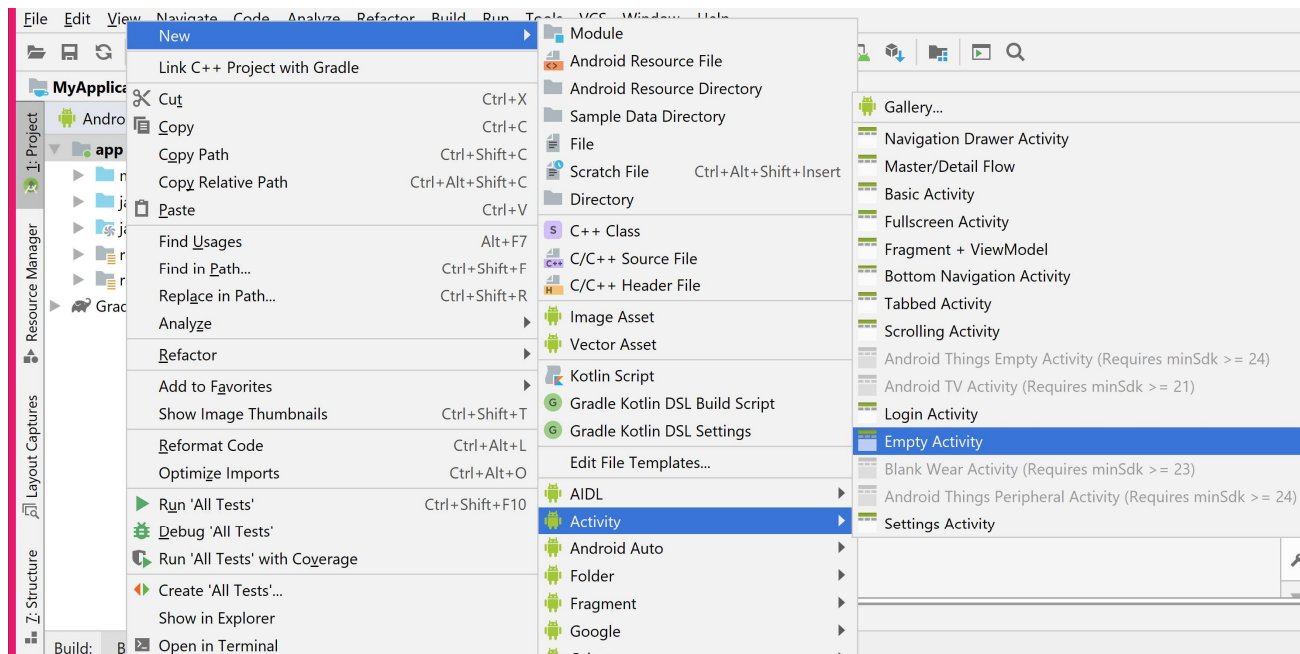
8- Give it a name or leave default and check generate layout file and you can also choose if it's the launcher activity by ticking that option:
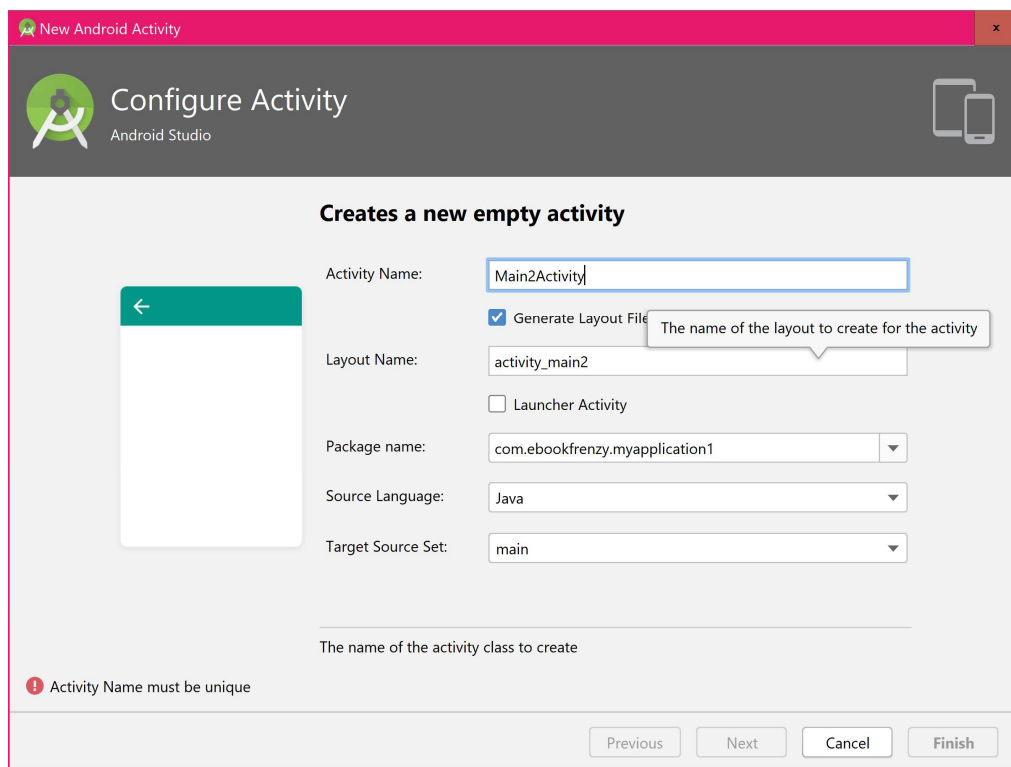
Exercise: Flip Business Card Design your own customized business card interface that reflects your future dream job. The application contains 2 screens as follows: The *first activity* has a vertical linear layout that contains the back side of the business card, where the background is filled with an image with

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a form on top to fill name, email, phone and position. It also has a button that once clicked, a listener event gets fired to show the front view of the business card design on the second activity layout using intent object. The **second activity** should have the logo of the company, website, your name, email and telephone (Customized as you see yourself in the near future 😊).

In this exercise, you need to create 2 activities (each has .xml / .class) using linear and relative layout respectively. The following views should be used: TextView, ImageView, EditText (for plain text, email and phone), Spinner and Button. Pick design resources of your choice from the internet and save it in the drawable folder.

The spinner entries are:

Employee

Manager

Trainee

and linked to saved items in the **string.xml file** as

```xml
<string-array name="Positions">
    <item>Employee</item>
    <item>Manager</item>
    <item>Trainee</item>
</string-array>
```

In the java code, you will need to use the following pieces of code in 1st screen layout:

* `final ViewType ViewName = (ViewType) findViewById(R.id.viewID);`   // for all views in both layouts
* `.setOnClickListener(new View.OnClickListener()  {...} );`   // for buttons to fire event

To navigate to other screen, use the following:

* `Intent intent = new Intent(currentActivity.this, targetActivity.class);`
* `startActivity(intent);`

A sample of the final business card application screens are:

Launcher Activity: business card back
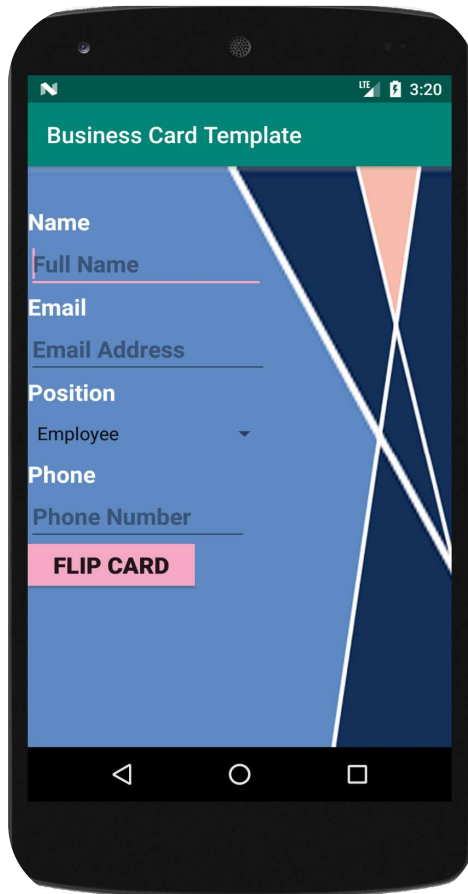
Target Activity: business card front
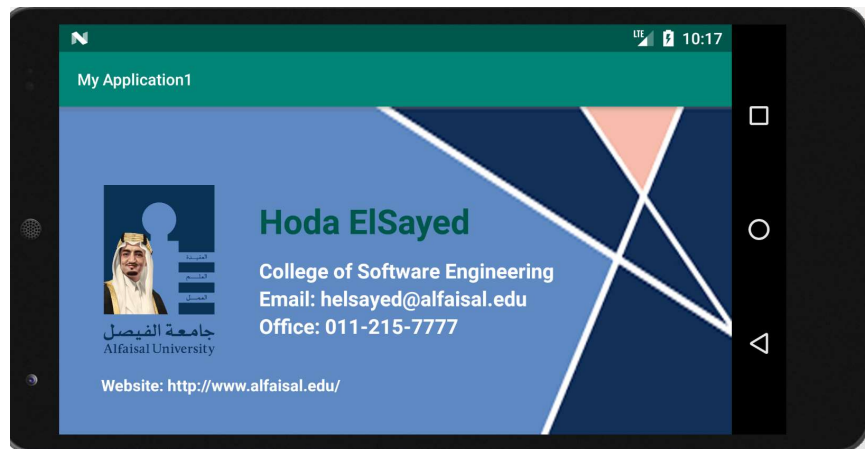
Screenshot:

XML Code:

Main Activity

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#009688"
    android:hapticFeedbackEnabled="false"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/name_lbl"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Name"
        android:textColor="#000000"
        android:textSize="30sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.137"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.091" />

    <TextView
        android:id="@+id/email_lbl"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Email"
        android:textColor="#000000"
        android:textSize="30sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.135"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.234" />

    <TextView
        android:id="@+id/position_lbl"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Position"
```

```xml
            android:textColor="#000000"
            android:textSize="30sp"
            android:textStyle="bold"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintHorizontal_bias="0.144"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintVertical_bias="0.391" />

    <EditText
            android:id="@+id/name_input"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:ems="10"
            android:hint="Name"
            android:inputType="textPersonName"
            android:textColorHint="#FFFFFF"
            app:layout_constraintBottom_toTopOf="@+id/position_lbl"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintHorizontal_bias="0.179"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintVertical_bias="0.433" />

    <Spinner
            android:id="@+id/positionSpinner"
            android:layout_width="351dp"
            android:layout_height="61dp"
            android:entries="@array/positions"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintHorizontal_bias="0.318"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toBottomOf="@+id/position_lbl"
            app:layout_constraintVertical_bias="0.053" />

    <Button
            android:id="@+id/btnFlip"
            android:layout_width="161dp"
            android:layout_height="63dp"
            android:text="Flip Card"
            android:textSize="22sp"
            app:backgroundTint="#000000"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintHorizontal_bias="0.139"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toBottomOf="@+id/positionSpinner"
            app:layout_constraintVertical_bias="0.109" />

    <EditText
```

```xml
        android:id="@+id/emailInput"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="Email"
        android:inputType="textEmailAddress"
        android:textColorHint="#FFFFFF"
        app:layout_constraintBottom_toTopOf="@+id/position_lbl"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.179"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/name_input"
        app:layout_constraintVertical_bias="0.773" />

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

Flipped Card Activity

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".FlippedCard"
    tools:layout_editor_absoluteX="132dp"
    tools:layout_editor_absoluteY="31dp">

  <androidx.constraintlayout.widget.ConstraintLayout
      android:layout_width="match_parent"
      android:layout_height="match_parent"
      android:background="#009688"
      android:hapticFeedbackEnabled="false"
      tools:context=".MainActivity"
      tools:layout_editor_absoluteX="0dp"
      tools:layout_editor_absoluteY="-175dp">

    <TextView
        android:id="@+id/nameOnCard"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginEnd="112dp"
        android:text="Amaan Zubairi"
        android:textColor="#000000"
        android:textSize="40sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toTopOf="@+id/email"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.533" />
```

```xml
<TextView
    android:id="@+id/email"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginBottom="168dp"
    android:text="Email: amaanz@nasa.gov"
    android:textColor="#FFFFFF"
    android:textSize="20sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.484"
    app:layout_constraintStart_toEndOf="@+id/imageView" />

<TextView
    android:id="@+id/office_no"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Office: 011-215-7777"
    android:textColor="#FFFFFF"
    android:textSize="20sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.46"
    app:layout_constraintStart_toEndOf="@+id/imageView"
    app:layout_constraintTop_toBottomOf="@+id/email"
    app:layout_constraintVertical_bias="0.333" />

<TextView
    android:id="@+id/alfaisal_website"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginBottom="44dp"
    android:text="website: https://nasa.gov"
    android:textColor="#000000"
    android:textSize="15sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.054"
    app:layout_constraintStart_toStartOf="parent" />

<TextView
    android:id="@+id/college"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Lead Software Engineer"
    android:textColor="#FFFFFF"
    android:textSize="25sp"
    android:textStyle="bold"
```

```
        app:layout_constraintBottom_toTopOf="@+id/email"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.452"
        app:layout_constraintStart_toEndOf="@+id/imageView"
        app:layout_constraintTop_toBottomOf="@+id/nameOnCard"
        app:layout_constraintVertical_bias="0.555" />

    <ImageView
        android:id="@+id/imageView"
        android:layout_width="242dp"
        android:layout_height="149dp"
        android:background="#00FFFFFF"
        app:layout_constraintBottom_toTopOf="@+id/alfaisal_website"
        app:layout_constraintEnd_toStartOf="@+id/nameOnCard"
        app:layout_constraintHorizontal_bias="0.387"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.59"
        app:srcCompat="@drawable/download" />
</androidx.constraintlayout.widget.ConstraintLayout>

</androidx.constraintlayout.widget.ConstraintLayout>
```
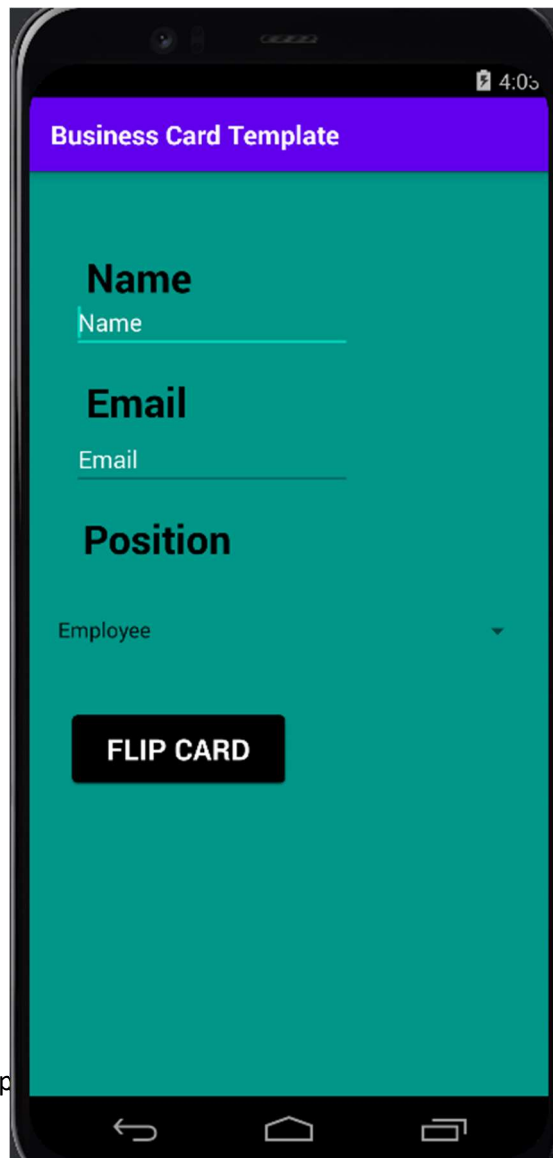
Design Layouts:

<u>Screen 1</u>

Screen 2: