MUBS

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Modern University for Business and Science

School of Computer and Applied Sciences

CSC314 – Mobile Application Development
Midterm Exam
Assignment 1 2019-2020

Student's Name: _____

(First) (Father) (Family)

Student ID Number: _____ Instructor's Name: _____

Assessment weight: 30% of the course

LEARNING OUTCOMES
This exam will cover Learning Outcomes:
1. Android Activity and its lifecycle
2. Event Listeners
3. Android Layout and the different types
4. ListView and Adapters

DEPARTMENTAL USE ONLY	
Q1	30
Q2	40
Q3	30
Score	100

Kindly, make sure that you read and understand the following points:

- The **PLAIGAIRISM penalty will be an "F"** on the assignment.
- .ach student has to submit his own project/assignment. **Group projects are not allowed**.
- Your name should written onto these sheets; moreover, your answers should be applied on a new document/file to be submitted, along with this file, to the Instructor.
- Total number of pages is 6 **pages**.
- Submission Deadline: **April 24, 2020 at 11pm**

DO YOUR BEST!

Question 1 (30 points)

Create an app for "Grand Palace" hotel to help customers make their reservations.
The first page will display the logo and a list of room types, as shown in Figure 1.

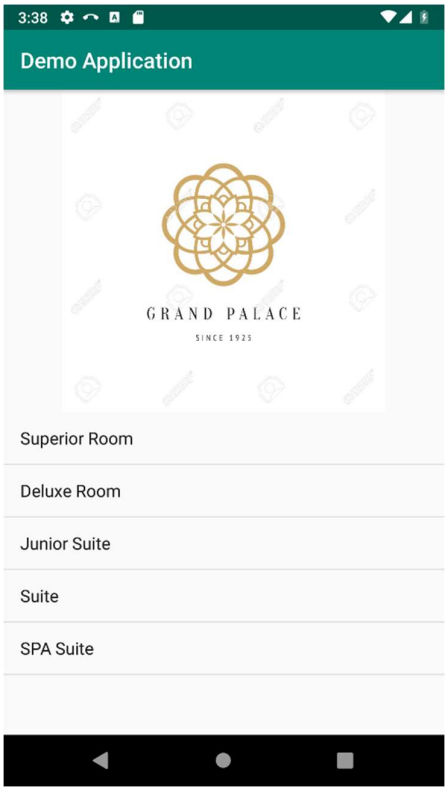

Figure 1. Main Activity

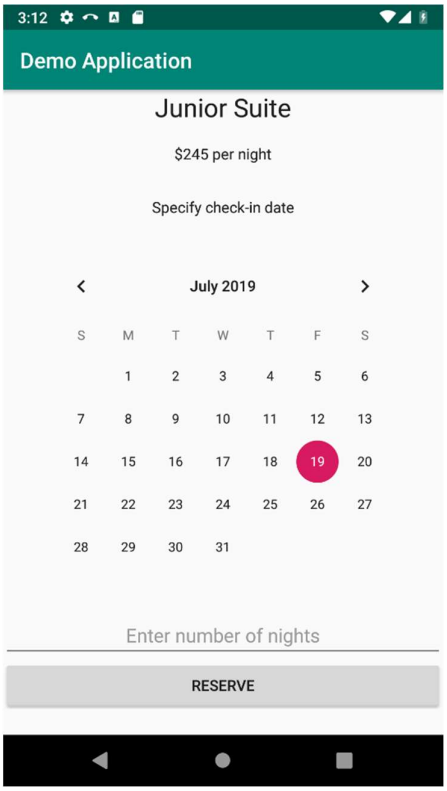

Figure 2. Room Page

There are 5 types of rooms shown in Figure 1:

a. Superior room at $155
b. Deluxe room at $185
c. Junior suite at $245
d. Suite at $285
e. SPA suite at $370

When the user clicks on one of the available rooms, he will get a new page to make a reservation, similar to the one shown in Figure 2.
Read the following questions and write your code carefully.

Once you finish, compress the **`src`** folder found in your Android Studio Project folder, and send it via email to your instructor.

Answer the following questions:

1. Create **`MainActivity`** with a layout (**`XML`** file) similar to the one shown in Figure 1.
2. Create **`ReserveActivity`** with a layout (**`XML`** file) similar to the one shown in Figure 2.
3. You should use a **`ListView`** in the **`MainActivity`** to display the types of rooms available.
4. When the user clicks on any item in the **`ListView`**, he will be taken to **`ReserveActivity`**.
5. Depending on the item that the user clicked, **`ReserveActivity`** will display the following information:
    a. Room type
    b. Room cost per night
6. **`ReserveActivity`** will give the user a calendar to specify the check-in date and ask the user to enter the number of nights he/she wishes to stay.
7. When the user clicks on **RESERVE** button, the following information will be collected to be sent to an email client:
    a. Room type
    b. Room cost
    c. Check-in date
    d. Number of nights

The email has the following format:
Your room type: Junior Suite, Total Price: $735 for 3 nights, Check-In Date: 15/05/2019

8. If the user forgets to enter the "number of nights" and clicks **RESERVE**, display a **Toast** reminding him to enter the number of nights.

Question 2	(40 points)

In this exercise, you are requested to create a lottery game mobile application. Each lottery number can range from 1 through 42 only. The application generates six unique random numbers (the six numbers should be different). The user will enter in the six EditTexts the selected numbers to play (you must validate that each number is between 1 and 42, and the numbers are not repeated), the user can select form the spinner **SPLevel** one option between 2 options ("In Order" or "Randomly").
The layout of your application must look as follows, where the user can choose six numbers.

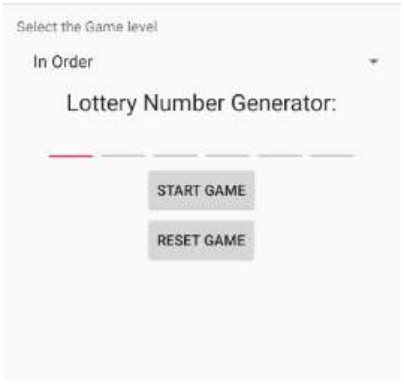

Figure 1: LotteryGameActivity

```
<LinearLayout tools:context=".LotteryGame">
    <TextView android:text="Lottery Number Generator:"/>
    <TextView android:text="Select the Game level"/>
    <Spinner android:id="@+id/SpLottery" />
    <TextView android:text="Choose six Number: "/>
    <GridLayout>
        <EditText android:layout_row="0"
                  android:layout_column="0" android:id="@+id/input1"/>
        <EditText android:layout_row="0"
                  android:layout_column="1" android:id="@+id/input2"/>
        <EditText android:layout_row="0"
                  android:layout_column="2" android:id="@+id/input3"/>
        <EditText android:layout_row="0"
                  android:layout_column="3" android:id="@+id/input4"/>
        <EditText android:layout_row="0"
                  android:layout_column="4" android:id="@+id/input5"/>
        <EditText android:layout_row="0"
                  android:layout_column="5" android:id="@+id/input6"/>
    </GridLayout>
    <Button  android:text="Start Game" android:id="@+id/btnStartGame"/>
    <Button  android:text="Reset Game" android:id="@+id/btnResetGame"/>
</LinearLayout>
```

Figure 2: XML code for the LotteryGameActivity

In the **OnCreate ( )** method of the **LotteryActivity** class:

1. Add a reference for each control in the activity. (Using JAVA). The reference of six **EditTexts** should be filled in an array.
2. Create an event click listener on the button **btnPlay** that allows:
    a. To validate that each number selected by the user is between 1 and 42.
    b. To validate that the numbers are not repeated.
    c. To compare the numbers given by the user and the numbers chosen randomly by the application.
        i. The user will gain 100,000$ if he select all correct numbers (**in order**) in 5 trials.
        ii. The user will gain 50,000$ if he select all correct numbers (in random order) in 5 trials.
        iii. The user will gain 25,000$ if he select only 5 correct numbers (in random order or in order) in 5 trials.
        iv. The user will gain 5,000$ if he select only 4 correct numbers (in random order or in order) in 5 trials.

A toast will notify the user on the amount of gain. In case the user fails to win in 5 trials, the toast will be displayed to inform him that he reach the limit of trials and the application will be closed.

3. Create an event click listener on the button **btnReset** that allows to clear all **EditTexts** and create new random numbers.

The following code generates an integer number between minimum value (inclusive) and maximum value (inclusive):

```
Random r = new Random();
int randomnumber =  r.nextInt((max - min) + 1) + min;
```

Question 3	(30 points)

The price of petrol in Lebanon is set weekly by the Minister of Energy. This price includes a fixed part and a variable part. The fixed part is given according to the table opposite:

لكل الف ليتر		
98 octanes	95 Octanes	
247 500	253 000	رسوم
10 000	10 000	شركة التوزيع
16 000	16 000	اجرة النقل
71 250	71 250	عمولة صاحب المحطة

We give you the (simplified) XML script and the corresponding display as well as the class corresponding to the activity which displays this screen:

Initial display

Click on the button

Give the necessary modifications (XML and / or java) in order to obtain the following operation:

- The user can modify the value initially displayed and which corresponds to the prices on 18/12/2019.
- When clicking on the button "Display", the table is displayed according to the example given in the above figures.
- The user can modify the value and click the button again, the table must be modified according to the values entered.

Remarks:

• The VAT rate is 11%

• The first and last row of the table is displayed in white on a black background.

```
<LinearLayout
    android:id="@+id/screen"
    android:orientation="vertical"
    tools:layout_editor_absoluteX="1dp"
```

```
    tools:layout_editor_absoluteY="1dp">
    <TextView
        android:text="المحروقات اسعار تركيب جدول"
        android:textAlignment="center"

android:textAppearance="@style/TextAppearance.AppCompat.Large"/>
    <LinearLayout
        android:orientation="horizontal">
        <TextView
            android:text="سعر البضاعة - الف ليتر 95 اوكتان :"/>
        <EditText
            android:id="@+id/edittext95"
            android:inputType="number"
            android:text="757750"/>
    </LinearLayout>
    <LinearLayout
        android:orientation="horizontal">
        <TextView
            android:text="سعر البضاعة - الف ليتر 98 اوكتان :"/>
        <EditText
            android:id="@+id/edittext98"
            android:inputType="number"
            android:text="790250"/>
    </LinearLayout>
    <Button
        android:id="@+id/btnDisplay"
        android:text="إظهار"/>
</LinearLayout>
```

جدول تركيب أسعار مبيع المحروقات السائلة

الملحق بالقرار رقم ٢٣٤ تاريخ ١٧/١٢/٢٠١٩

البيان	بنزين خال من الرصاص عيار ٩٨ أوكتان ل.ل /كيلوليتر	بنزين خال من الرصاص عيار ٩٥ أوكتان ل.ل /كيلوليتر	ديزل أويل (للمركبات الآلية) ل.ل /كيلوليتر
ثمن البضاعة	٧٩٠ ٢٥٠	٧٥٧ ٧٥٠	٨٠٢ ٠٠٠
الرسوم	٢٤٧ ٥٠٠	٢٥٣ ٠٠٠	صفر
حصة شركة التوزيع	١٠ ٠٠٠	١٠ ٠٠٠	١٥ ٠٠٠
أجرة النقل	١٦ ٠٠٠	١٦ ٠٠٠	١٨ ٠٠٠
عمولة صاحب المحطة	٧١ ٢٥٠	٧١ ٢٥٠	٣٥ ٠٠٠
مجموع الكلفة دون الضريبة	١ ١٣٥ ٠٠٠	١ ١٠٨ ٠٠٠	٨٧٠ ٠٠٠
الضريبة على القيمة المضافة عند البيع ١١%	١٢٤ ٨٥٠	١٢١ ٨٨٠	معفاة
سعر مبيع العشرين ليتر	٢٥ ٢٠٠	٢٤ ٦٠٠	١٧ ٤٠٠

تقرر في ١٧/ ١٢ / ٢٠١٩
وزير الطاقة والمياه
ندى البستاني

(Extract from the site: www.energyandwater.gov.lb/ar/prices?type=1)