Programming Project 1: Bill for a Meal

Due: September 6, 2019

In this project, you will design, build and test a simple (one activity) Android app. This will give you a chance to test your Android Studio set up and create your very first Android App.

The app's context is as follows. At the end of a shared meal at a restaurant, your party needs to pay the bill (bummer!), including a tip (hopefully you have been happy with the service ☺). You will enter the amount to be paid for the food and then you will want to have a choice of selecting the tip amount to be either 10%, 15%, or even 18%. You will also enter the number of people in your party (unless you are by yourself), in order to compute the amount everyone in your party should pay, assuming an equal share of the bill, per person.

Project description:

1. Create a new Android Studio project called *Bill for Meal*. **You must use Android Studio version 3.5 or 3.4.2 (preferably, 3.5, from August, 2019). When creating your project, you must select `Phone and Tablet`, and API 16: Android 4.1 (Jelly Bean)**. **You must code your app in Java.**
2. The app *must* accept as the amount of the bill (for food), the number of meal participants, and the selected amount of the tip (picked from 10%, 15%, or 18%). The app should compute the final amount (including the tip) and then divide it by the number of participants to compute the amount to be paid for the meal (per each person, or the final overall amount, if only one person pays). Round the amount to a penny.
3. The values of the bill and the number of participants *must* be provided using `EditTexts`, while the amount of the tip should be indicated by 3 `Buttons` (for the 3 tip levels as mentioned before). Pressing of one of the tip buttons should compute the amount per person and display it using a `TextView`. Also, the `EditText` for the bill amount should accept only numerical values with decimal fractions, while the one for the number of participants should accept whole numbers only. Both values must be positive. The number of participants is optional, and if not given, should be assumed to be 1 (only one person pays).
4. You *must* use either a `Linear` or `Constraint` layout in your app. The necessary controls should be arranged vertically, in this order: final amount to be paid (on top), price of the food, number of participants, and the 3 buttons for the tip amounts, at the bottom, shown horizontally.
5. If you prefer, you may use `TextViews` as hints (labels) to the left of the corresponding `EditViews` (to indicate which is which), or you may provide initial texts as hints (for example, *Bill amount*, *Number of people*).
6. A suitable label on the buttons should indicate the tip percentages.
7. Test your app in a Pixel XL AVD and correct any errors.
8. Create a ZIP file with your entire project directory.
9. You must submit your zipped project to the **Project 1 Assignment Submission Folder** on eLC. If you don't have a fast Internet access at home, plan on submitting your project while on campus, as an expected size of your ZIP file may well exceed 12-15 MB.

Additional explanations will be provided in class.

Additional requirements:

- Follow good Java coding style (suitable variable names, indentation, etc).
- Include suitable comments in JavaDoc style. Even though JavaDoc html pages will not be produced, it is an expected commenting standard for Android apps.