Lab 3 – Tip Calculator

CS235IM, Intermediate Mobile Application Development: iOS

Introduction

The purpose of this lab is to give you practice using the following new UI Controls

- ImageView
- Slider
- AlertController
- Switch

Tip Calculator (Group A assignment)

Create a calculator that has:

- An image of food or a restaurant (or whatever) at the top
- A TextField for entering the total amount of the meal
- A slider with a minimum of 0 and a max of 20 (or whatever values your generosity dictates) to determine the tip percentage
    - The tip percentage and amount will be shown in labels
- A TextField for entering the tax percentage
    - The tax amount will be shown in a label
    - There will be a switch for turning tax on or off
- A label that displays the total
- An Action Sheet that is triggered when you turn on or off the tax calculation. The Action sheet will ask the user if they really want to turn this calculation on or off (two separate messages).

The Actions that should be handled are shown below. All of these actions should be handled by a single action method. The method should update all the calculations.

- Slider values changing
- Meal amount value change
- Tax percentage value change
- Tax switch value change

A suggested layout for the screen is shown on the next page.

<u>Alternative lab assignment</u>

Propose an app of your choice that uses all the same controls as the Tip Calculator described above. (The alternative assignment option is open to both group A and B.)

Submission:

Zip the solution folder and upload it.
Put the screen shots in a document, label each screen shot, and upload the document.

For the final submission, upload both the code review you got (with the second column completed by you) and the one you gave.

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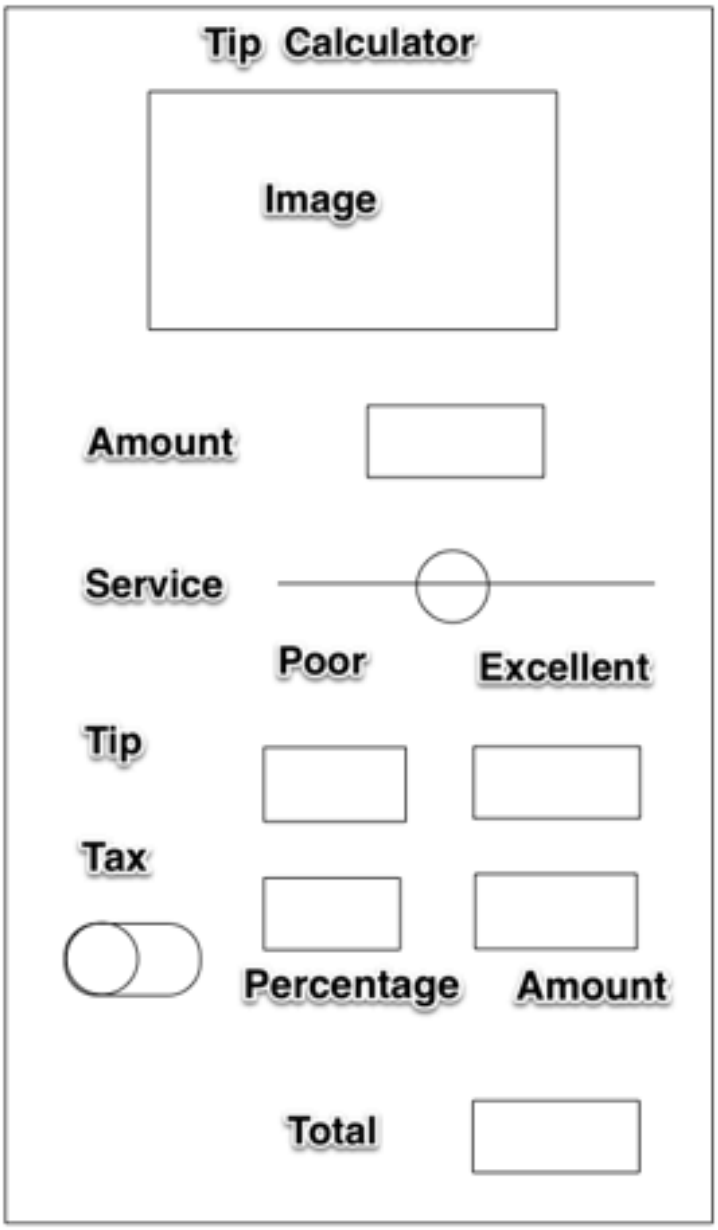
Tip Calculator
Image
Amount
Service
Poor
Excellent
Tip
Tax
Percentage
Amount
Total

Apparent Temperature Calculator (Group B assignment)

The "Apparent Temperature" is how hot or cold the air feels. There are two ways to calculate it:

- In cold weather, wind speed is a major factor determining how cold it feels, but not humidity. The formula for calculating apparent temperature (aka wind chill temperature) is:
  Wind Chill Temperature = 35.74 + 0.6215T - 35.75(V^0.16) + 0.4275T(V^0.16)
  where: T is the air temperature in degrees Fahrenheit, and V is the wind speed in mph.

  Reference: https://en.wikipedia.org/wiki/Wind_chill (January 20, 2016)

- In warm weather, humidity is a greater factor. The formulas for calculating Apparent Temperature when taking humidity into account are:
  AT = Ta + 0.33×e − 0.70×ws − 4.00
  e = rh / 100 × 6.105 × exp (17.27 × Ta / (237.7 + Ta))
  where:
  Ta = Dry bulb temperature (°C)
  e = Water vapor pressure (hPa) [humidity]
  ws = Wind speed (m/s) at an elevation of 10 meters
  rh = Relative Humidity [%]

  Reference: http://www.bom.gov.au/info/thermal_stress (January 22, 2016)

Create a calculator that has:

- An image of clouds, or ice (or whatever) at the top
- A TextField for entering the current temperature (indicate whether you're using degrees C or F)
- A slider with a minimum of 0 and a max of 100 to determine the wind speed (indicate whether you're using kph or mph)
  - The wind speed will be shown in the appropriate label
- A TextField for entering the percent humidity
  - The humidity amount will be shown in a label
  - There will be a switch for turning humidity on or off
- A label that displays the total
- An Action Sheet that is triggered when you turn on or off the humidity calculation. The Action sheet will ask if they really want to turn this calculation on or off (two separate messages).

The Actions that should be handled are shown below. All of these actions should be handled by a single action method. The method should update all the calculations.

- Slider values changing (wind speed)
- Temperature value change
- Humidity percentage value change
- Humidity switch value change