MAD Midterm

Instructions:

You have an entire class period to develop the following app in iOS using Xcode. You can use any reference material you find helpful. It is suggested that you start at the first task and work down the list. The tasks are listed in an order such that they can be implemented after the previous ones. The goal of this midterm is to test your technical proficiency so focus on getting each task working. Add additional complexity and aesthetics at the end, time permitting. I highly suggest creating multiple versions of your project (duplicate your project folder in the Finder) so you have a version saved after each task. Post your completed project to github at the end of the midterm. (You can post more than 1 version if an earlier version worked but you want me to see the progress you made on a later non-working version).

Create an app based on the mock-up provided that computes a person's commute time.

1. Calculate commute time and gas needed for a round-trip daily commute (50 pts)
    a. Label and textfield to enter commute miles.
        1. Make sure the Return key dismisses the keyboard
    b. Button that calculates round-trip daily commute time and gas needed
    c. Label to display commute time
    d. Label to show gas needed
    e. Assume average car speed is 20 miles/hour
    f. Assume the average car gets 24 miles/gallon
2. Implement the following user interface controls:
    a. Slider or stepper to track how much gas you have. Display this amount in a label. (5 pts)
    b. Switch to show monthly commute times and gallons of gas. Toggling this control should change the commute time and gas needed values. (assume 20 work days/month) (15 pts)
    c. Segmented control to chose mode of transportation – car, bike, bus. Tapping this control should change the commute time and gas needed values. (15 pts)
        1. Assume bike average speed is 10 miles/hour
        2. Assume bus average speed is 12 miles/hour + 5 min wait each way
3. Image view that changes the image based on chosen mode of transportation (5 pts)
4. Add an alert or action sheet for ONE of these conditions to your app (10 pts)
    a. alert the user if they don't have enough gas for their commute
    b. if their commute is over 50 miles
    c. suggest carpooling if they're driving

Extra credit:

Use auto-layout and constraints so the user interface is adaptive to different size classes (screen size and orientation). 10 pts

Add a second view controller to enter your name and email to receive information on alternate modes of transportation. 15 pts

- Make sure the Return key dismisses the keyboard.
- Make sure the user can navigate back to the original view.
- Pass the data back to the first view and display it. (data does not need to be persistent)