General Instructions: Put the entire app directory into one zip file and submit as an attachment under Content → Homework 11 for this course on the Blackboard Learn system by the above deadline. Note that you may submit multiple times, but only the most recent entry submitted before the above deadline will be graded.

For this homework you will create a version of the Food App where the food information is stored using Core Data so that it persists even if the app is terminated and restarted. See screenshots below. Specifically,

1. If you start with a New Project, then be sure to check the “Use Core Data” option. If you work from an existing project, you can still create a new project using Core Data and copy over the Core Data Stack code from AppDelegate.swift. You will also need to add a Core Data Model to the project.
2. In the Core Data Model, add an Entity called FoodItem with the attributes: “name” of type String, “calories” of type Integer32, and “imageFileName” of type String.
3. In the Storyboard create a Table View Controller embedded in a Navigation Controller with title “Favorite Foods”, prompt “Food App”, and an add “+” bar button item at the right in the navigation bar. The Table View should be initially empty; do not preload any food items. The table view cell should use the Right Detail style.
4. In the Table View Controller, maintain an array of food items. This array should be loaded when the app starts with all the FoodItem objects stored in Core Data, and the table view should be updated accordingly.
5. When the “+” button is tapped, the Table View Controller should add a new random FoodItem to the food items array. The random food items should be chosen from a list of at least five different food items, each with a corresponding unique image. The calories for each food item should be a random integer in the range 100…500. Multiple entries of the same food item with different calories is okay.
6. The table should support the swipe-left-to-delete functionality.
7. Be sure that auto layout constraints are set so that all elements in all views are appropriately displayed (i.e., no overlap, occlusion, or cutoff at edges) regardless of device orientation.
8. Your app should run in Xcode 11 using Swift 5 and iOS 13. Your app will be tested using Xcode’s iPhone 8 device simulator, so make sure your layout constraints work for that device.
Storyboard:

Simulator:

Initial View:  After adding foods:  Deleting food: