Homework: Core Location and MapKit

The purpose of this assignment is to show your understanding of location and mapping concepts, including determining user location, using MKMapView instances, and geocoding with CLGeocoder.

In order to successfully complete this assignment, you must successfully implement all of the Functional Requirements below. As with all apps that you submit for this class, you should also:

- Ensure that your app does not crash or behave in an unstable manner
- Make use of good design patterns (e.g. MVC) and structure your app accordingly
- Follow the Human Interface Guidelines when designing your app's UI
- Test your app on an actual device running the latest version of iOS

Functional Requirements

For this assignment, you will implement a simple "check-in" application[1], where a user can register their presence at a place on a map and subsequently see a series of pins for past locations.

Upon first launching the app, you should present a map view with a bottom toolbar. The toolbar should have two buttons:

- On the right, show a button titled "Find Me." When pressed, zoom the map to the user's current location, and track the user until the map is manually scrolled.
- On the left, show a button titled "Check In." When pressed, display a checkin screen modally.

The checkin screen should present with an empty table view, topped by a navigation bar that shows the title "Loading" and a Cancel button on the right. If Cancel is pressed, dismiss the controller immediately and take no further action. (Make sure you cancel any ongoing location tracking or geocoding requests when cancelling a checkin.)

As soon as the checkin view is displayed, begin a geocoding request for the user's current location. Upon receiving results, display all the returned locations in the table view. When the user selects a result, pass that information back to the map and dismiss the checkin screen immediately.

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[1] Grammatical note: for this assignment and documentation, "check in" is a verb and "checkin" is a noun. Your user will check in at a location to create a checkin there.

When the map receives a checkin, drop a pin on the map at that location. Ensure that the pin can show a callout view, and that the callout view's title and subtitle show the name of the place and the city/state, respectively.

Bonus Opportunities

You may implement any or all of the following features for bonus points:

- **20 points**: Add an accessory view to a pin's callout. When tapped, show the user full details about that checkin, including address information and a date/time the user checked in at that location. Allow the user to delete a checkin from this detail page.
- **50 points**: Choose a business search API (such as Yelp's) and implement it in your app to suggest nearby locations instead of relying on Apple's geocoding.

Submitting Your Work

To submit your work, upload a .zip file to the appropriate drop box that contains your entire Xcode project directory, including:

- Your .xcodeproj bundle and all its contents
- All your source files, including code, .xib files, and any image resources
- Any additional files that your app requires to run

Name this zip file "UWHWLocationAndMaps_<*UW NetID*>.zip", where <*UW NetID*> is the username assigned to you by UW. (For example, the instructor's submission would be named UWHWLocationAndMaps_tekl.zip.)

Your submission should compile cleanly on the first try, throwing absolutely no errors, warnings, or static analyzer problems. You may lose points if your solution does not compile cleanly.

Your submission should, once compiled, run well on an actual device running the latest version of iOS. You may choose to support past versions of iOS, but all testing will be done on the newest version available on the due date.