Introducing

iOS 9
Search APIs

Hands-On Challenges

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Challenge 2: Managing the Core Spotlight Index

During the tutorial video you learned how to index shopping lists so that a user can search for them using the system-wide Spotlight search. However, there was a problem with this indexing.

The app includes functionality to create new shopping lists and to remove them as well, but the indexing occurs only at app start up. It's possible to get into an inconsistent state, where the index doesn't actually match up with the data models that exist within the app.

Your challenge is to update the app so that new shopping lists are added to the index when they are created, and removed on deletion.

Hints

• You already have a function to add shopping lists to the search index, but you'll have to create a new one to remove them.

• Take a look at the methods available on `CSSearchableIndex` to discover which you think will be helpful for removing indexed items.

• Find the part of the code that adds and removes the shopping lists to the data store, and hook your new indexing calls into that.

Solution

To start, you're going to add a method which will remove a specified shopping list from the Core Spotlight search index. Open **SearchableExtensions.swift** and add the following function to the `DataStore` extension at the bottom of the file:

```swift
func removeShoppingListsFromIndex(shoppingLists: [ShoppingList]) {
  let idsToDelete = shoppingLists.map { $0.id.UUIDString }
  CSSearchableIndex.defaultSearchableIndex()
            .deleteSearchableItemsWithIdentifiers(idsToDelete) {
    error in
    if let error = error {
      print("Error deleting: \(error.localizedDescription)")
    } else {
      print("Successfully deleted shopping lists")
    }
  }
}
```

This function takes an array of ShoppingList items, and attempts to remove them from the search index.

First the shopping lists are mapped to their unique IDs. Remember that all items that you add to a Core Spotlight index have to have a unique ID. You can now use these same IDs to remove these from the search index.

Use `deleteSearchableItemsWithIdentifiers(_:)` to delete the supplied shopping lists. As with many Core Spotlight methods, this is an asynchronous process, so you provide a callback to handle any errors. Here, you're just logging the error.

Having created this method, you've now got methods to add and remove shopping lists from the search index – all that remains is to call these from the appropriate place.

Open **DataStore.swift** and find the extension that has methods to add and remove shopping lists – at the bottom of the file. This is responsible for persisting the shopping lists to disk, and you'll hook into this to update the search index appropriately.

Add the following line to the `addShoppingList(_:)` method:

```swift
indexShoppingLists([shoppingList])
```

This create an array containing the newly created shopping list, and then calls the indexing method you created during the tutorial.

Add the following line to the `removeShoppingList(_:)` method:

```
removeShoppingListsFromIndex([shoppingList])
```

In a similar fashion, this creates an array containing the shopping list you wish to delete, and calls the method you just created to remove it from the index.

That's everything you need to do done! Build and run to check that your new code works.

Testing this is a little more involved. You need to follow this pattern:

1. Go to the shopping list page, and tap the **+** button.

2. Create a new shopping list, choosing a name, and selecting some items.

3. Head to the Spotlight search on the home screen.

4. Search for the name of your newly created shopping list. It'll appear in the search results. Yay! That's one part of the challenge completed.

5. Now head back to the app, swipe left on the shopping list you just created and delete it.

6. Back in the Spotlight search, search for the same shopping list again – this time it won't appear. Great!

Well done! You've successfully got your search index updating live, as you create and delete shopping lists.