Introduction to Swift

In this worksheet you will be learning about the Swift programming language. You will learn by reading and understanding some code, you will then be asked to modify the code. Finally you will be challenged to add some additional functionality.

1 Classes

Open the playground file `class and object.playground` and read through the code, using the comments to understand how it works. The code is split into two sections, a class plus some code that makes use of it. You should identify the following features:

1. the *private* instance variable `items`
2. the two initialisers, one of which takes a string array
3. the `addItem()` method that takes a single *String* parameter
4. the `getItem()` method. This either returns a *String* or throws an exception
5. the **guard** statement that throws an exception if the index is out of range

1.1 Documentation

Whenever you write your own code you should always fully document it. Properly documented code is understood by Xcode and is accessible in a couple of ways. Open the **Utilities Panel** and select the **Quick Help Inspector**. Now click on the class name on line 63 (you can turn on the line numbers in the **Xcode > Preferences** menu (**Text editing** tab). Notice that the formatted documentation appears in the panel.

Try clicking on the `addItem()` and `getItem()` methods to see the appropriate documentation.

Alternatively *alt-click* on any of these to see the documentation in a pop-over window.

1.2 Test Your Knowledge

Add a new method that returns the number of items in the list.

Add a method called `addUnique()` that only adds the new item if it does not already exist. It should return a `Todo.duplicateItem` exception if the item exists. HINT: look at the code snippet at the bottom of the script...

Add documentation to both of these methods and write code to test them.

1.3 Advanced Challenge

There is a **struct** defined at the top of the script. Modify the class so that it stores **Item** structs instead of **Strings**.

Remember to update the documentation!