

# SpaceAdventure

## Lesson 10

### Description

Add additional Planet objects to the PlanetarySystem planets array.

```
Welcome to the Solar System!  
There are 8 planets to explore.  
What is your name?  
Jane  
Nice to meet you, Jane. My name is Eliza, I'm an old friend of Siri.  
Let's go on an adventure!  
Shall I randomly choose a planet for you to visit? (Y or N)  
Y  
Ok! Traveling to...
```

### Learning Outcomes

- Practice object instantiation, passing arguments, and adding objects to an array.
- Point out repetitive code, and criticize how it may be improved.

### Vocabulary

initializer	instantiate	array
append	refactor	

### Materials

- **SpaceAdventure Lesson 10** Xcode project

### Opening

How might you describe the other planets in our solar system?

## Agenda

- Within the `SpaceAdventure` initializer, explicitly instantiate eight `Planet` objects, and add each one to the `planets` array.

```
init() {
    let mercury = Planet(name: "Mercury", description: "A very hot
        planet, closest to the sun.")
    ...
    let neptune = Planet(name: "Neptune", description: "A very cold
        planet, furthest from the sun.")

    planetarySystem.planets.append(mercury)
    ...
    planetarySystem.planets.append(neptune)
}
```

- Discuss the repetitive code in the initializer, and assert that students should return to improve, or "refactor," the initializer later.
- Add a `TODO` comment to the body of the initializer.

```
// TODO: Reduce repetitive code.
```

- Run the program (⌘R), and observe that the console (⇧⌘C) displays that "there are 8 planets to explore."

## Closing

Can you think of a way we can use the array of planets to let the traveler specify the planet he or she wishes to travel to?

## Modifications and Extensions

- Delete the repeated calls to `append`, and use the Swift array literal syntax (`[...]`) to initialize the `planets` array.

## Resources

The Swift Programming Language: About Swift [https://developer.apple.com/library/ios/documentation/Swift/Conceptual/Swift\\_Programming\\_Language/](https://developer.apple.com/library/ios/documentation/Swift/Conceptual/Swift_Programming_Language/)

The Swift Programming Language: A Swift Tour [https://developer.apple.com/library/ios/documentation/Swift/Conceptual/Swift\\_Programming\\_Language/GuidedTour.html](https://developer.apple.com/library/ios/documentation/Swift/Conceptual/Swift_Programming_Language/GuidedTour.html)

The Swift Programming Language: The Basics [https://developer.apple.com/library/ios/documentation/Swift/Conceptual/Swift\\_Programming\\_Language/TheBasics.html](https://developer.apple.com/library/ios/documentation/Swift/Conceptual/Swift_Programming_Language/TheBasics.html)

The Swift Programming Language: Classes and Structures [https://developer.apple.com/library/ios/documentation/Swift/Conceptual/Swift\\_Programming\\_Language/ClassesAndStructures.html](https://developer.apple.com/library/ios/documentation/Swift/Conceptual/Swift_Programming_Language/ClassesAndStructures.html)

The Swift Programming Language: Initialization [https://developer.apple.com/library/ios/documentation/Swift/Conceptual/Swift\\_Programming\\_Language/Initialization.html](https://developer.apple.com/library/ios/documentation/Swift/Conceptual/Swift_Programming_Language/Initialization.html)

The Swift Programming Language: Collection Types [https://developer.apple.com/library/ios/documentation/Swift/Conceptual/Swift\\_Programming\\_Language/CollectionTypes.html](https://developer.apple.com/library/ios/documentation/Swift/Conceptual/Swift_Programming_Language/CollectionTypes.html)

Swift Standard Library Reference: Array <https://developer.apple.com/library/ios/documentation/General/Reference/SwiftStandardLibraryReference/Array.html>