

Unit 3—Lesson 2:

Type Casting and Inspection

Type inspection

```
func getClientPet() -> Animal {  
    //returns the pet  
}
```

```
let pet = getClientPet() //`pet` is of type `Animal`
```

Type inspection

```
if pet is Dog {  
    print("The client's pet is a dog")  
} else if pet is Cat {  
    print("The client's pet is a cat")  
} else if pet is Bird {  
    print("The client's pet is a bird")  
} else {  
    print("The client has a very exotic pet")  
}
```

Type inspection

```
let pets = allPets() //`pets` is of type `[Animal]`
var dogCount = 0, catCount = 0, birdCount = 0
for pet in pets {
    if pet is Dog {
        dogCount += 1
    } else if pet is Cat {
        catCount += 1
    } else if pet is Bird {
        birdCount += 1
    }
}
print("Brad looks after \$(dogCount) dogs, \$(catCount) cats, and \$(birdCount) birds.")
```

Type casting

```
func walk(dog: Dog) {  
    print("Walking \"(dog.name)\"")  
}
```

```
func cleanLitterBox(cat: Cat) {. . .}
```

```
func cleanCage(bird: Bird) {. . .}
```

```
for pet in pets {  
    if pet is Dog {  
        walk(dog: pet) // Compiler error. The compiler sees `pet` as an `Animal`, not a `Dog`.  
    }  
    . . .  
}
```

Type casting

```
for pet in pets {  
    if let dog = pet as? Dog {  
        walk(dog: dog)  
    } else if let cat = pet as? Cat {  
        cleanLitterBox(cat: cat)  
    } else if let bird = pet as? Bird {  
        cleanCage(bird: bird)  
    }  
}
```

Any

```
var items: [Any] = [5, "Bill", 6.7, Dog()]
```

Any

```
var items: [Any] = [5, "Bill", 6.7, Dog()]
let firstItem = items[0]

if firstItem is Int {
    print("The first element is an integer")
} else if firstItem is String {
    print("The first element is a string")
} else {
    print("The first element is neither an integer nor a string")
}
```


Any

```
var items: [Any] = [5, "Bill", 6.7, Dog()]

if let firstItem = items[0] as? Int {
    print(firstItem + 4)
}
```

Unit 3—Lesson 2

Lab: Type Casting and Inspection



Open and complete the exercises in 3–02 – `Type Casting.playground`