

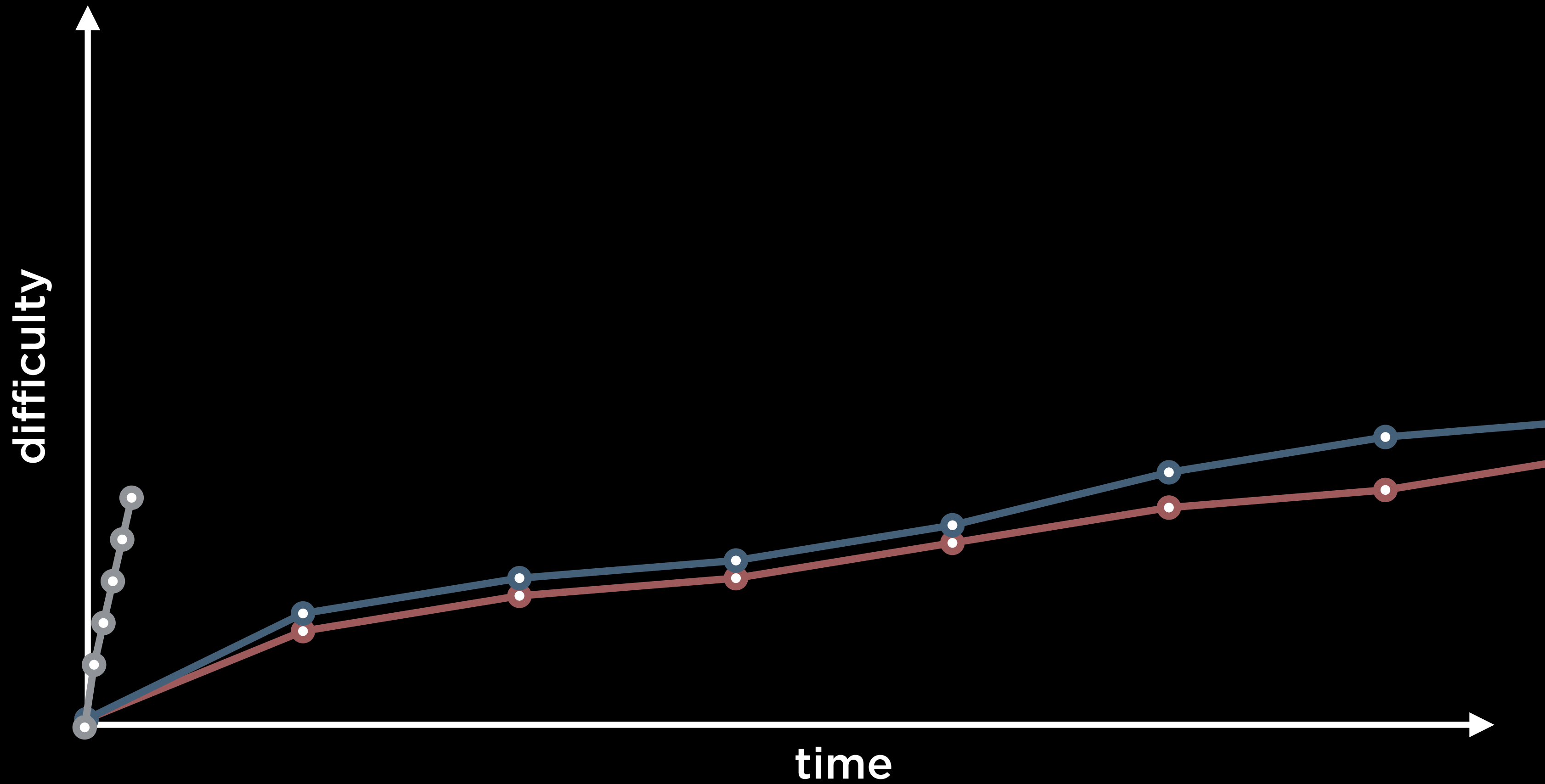
Making Sense of Closures

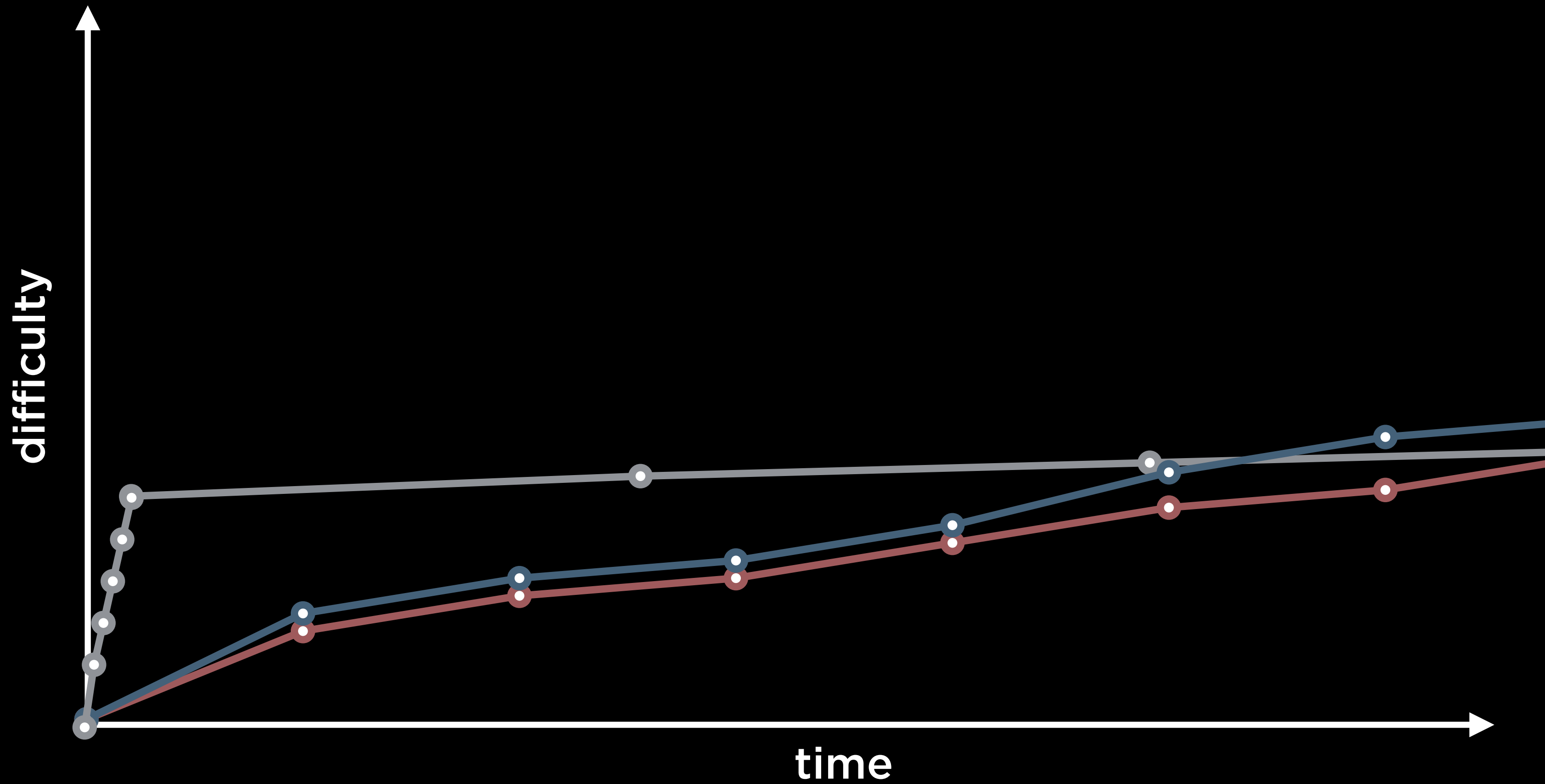


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Examples of Closure Use

General

Sorting, Filtering,
Working with
Collections

Area-specific

Animation,
Fetching Data, Callbacks,
Completion Handlers

Task-specific

Working with User
Interface Controls

“Closures let us take lines of code and group it together to use elsewhere in our program.”

Functions

```
// one or more lines of code  
// ...
```

Functions

```
// define it  
myFunction() {  
    // one or more lines of code  
    // ...  
}
```

Functions

```
// define it
myFunction() {
    // one or more lines of code
    // ...
}
```

```
// call it
myFunction()
```


Closures

Closures

```
// one or more lines of code  
// ...
```

Closures

```
{  
    // one or more lines of code  
    // ...  
}
```

Functions vs Closures

Functions vs Closures

Function

a block of code
you intend to **call**

Functions vs Closures

Function

a block of code
you intend to **call**

Closure

a block of code
you intend to **pass**

Passing Arguments

```
// Call a function that takes an Int  
myFunction(93278)
```

Passing Arguments

```
// Call a function that takes an Int  
myFunction(93278)
```

```
// Call a function that takes an String  
myFunction("Hello")
```


Passing Arguments

```
// Call a function that takes an Int  
myFunction(93278)
```

```
// Call a function that takes an String  
myFunction("Hello")
```

```
// Call a function that takes a Closure  
myFunction({  
    print("This is inside a closure")  
    // more code...  
})
```

"Oh, the Places You'll Go!" by Dr. Seuss. 56 pages. Age: 10

"Goodnight Moon" by Margaret Wise Brown. 30 pages. Age: 1

"Where the Wild Things Are" by Maurice Sendak. 48 pages. Age Range: 4

"The Hobbit" by J.R.R. Tolkien. 300 pages. Age: 12

"The Little Prince" by Antoine de Saint-Exupéry. 96 pages. Age: 10

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Swift Function Type

() ->

Swift Function Type

(parameter types) -> return type

Swift Function Type

(parameter types) -> return type

Swift Function Type

(parameter types) -> return type

```
// example functions
```

```
playMP3(filename: String) -> Bool { ... }
```

```
playOGG(oggFile: String) -> Bool { ... }
```

```
showImage(at url: String) -> Bool { ... }
```

```
loadVector(_ url: String) -> Bool { ... }
```

Swift Function Type

(parameter types) -> return type

`(String) -> Bool`

// example functions

`playMP3(filename: String) -> Bool { ... }`

`playOGG(oggFile: String) -> Bool { ... }`

`showImage(at url: String) -> Bool { ... }`

`loadVector(_ url: String) -> Bool { ... }`

Swift Function Type

(parameter types) -> return type

(String) -> Bool

"a block of code that takes a String
and returns a Bool"

// example functions

```
playMP3(filename: String) -> Bool { ... }
```

```
playOGG(oggFile: String) -> Bool { ... }
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```
showImage(at url: String) -> Bool { ... }
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```
loadVector(_ url: String) -> Bool { ... }
```

Swift Function Type

(parameter types) -> return type

(String) -> Bool

**"a block of code that takes a String
and returns a Bool"**

Swift Function Type

(parameter types) -> return type

(String) -> Bool

*"a block of code that takes a String
and returns a Bool"*

(Int) -> String

*"a block of code that takes an Int
and returns a String"*

Swift Function Type

(parameter types) -> return type

(String) -> Bool

*"a block of code that takes a String
and returns a Bool"*

(Int) -> String

*"a block of code that takes an Int
and returns a String"*

(Double, Double) -> [String]

*"a block of code that takes two Doubles and returns an
Array of Strings"*

```
// are these two Book elements in the right order already?  
if firstBook.readingAge <= secondBook.readingAge {  
    return true  
} else {  
    return false  
}
```