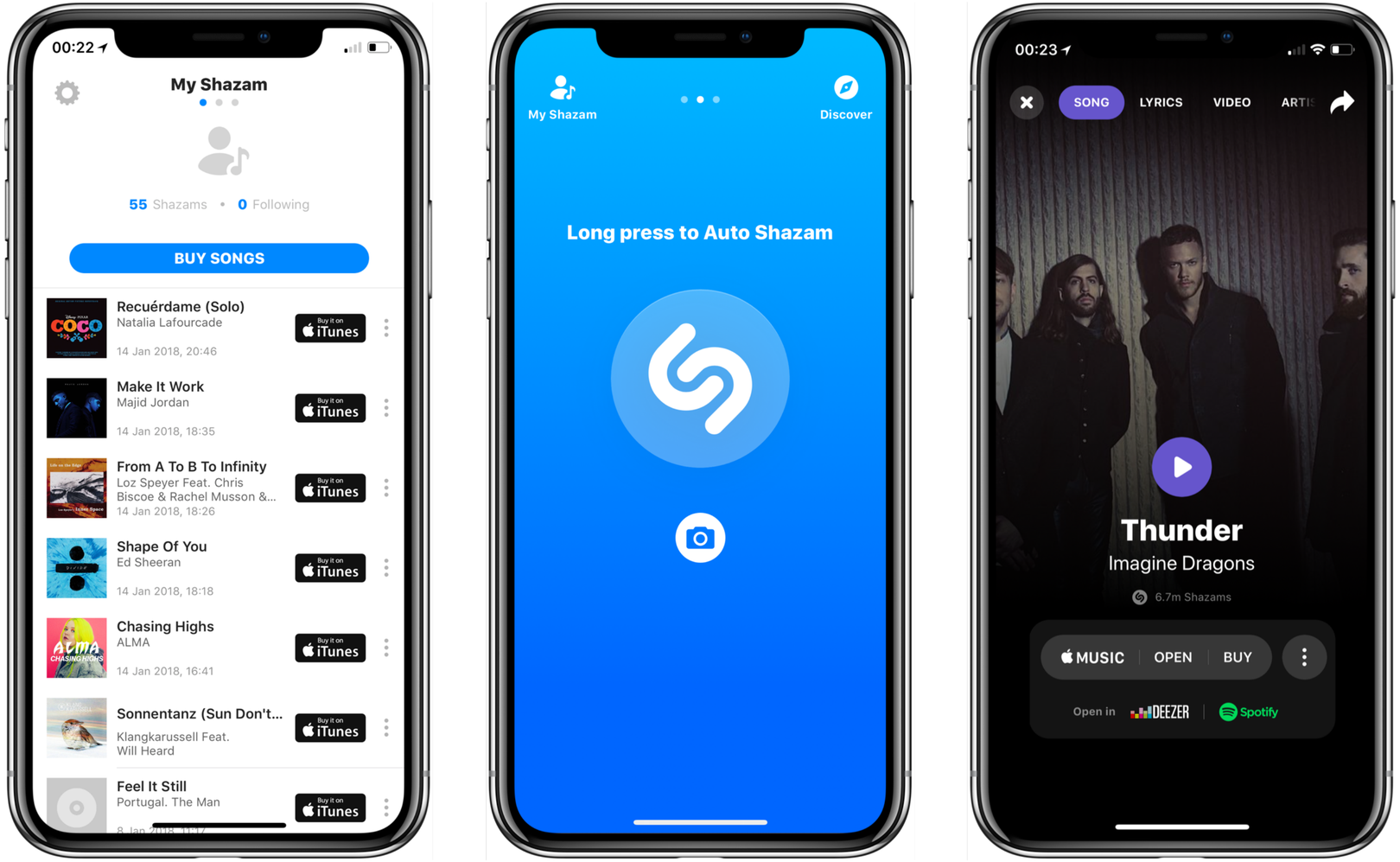
Introduction to iOS Development

Session 101

Alex Telek
Shazam iOS Engineer

Shazam


00:22
My Shazam
55 Shazams • 0 Following
BUY SONGS
Recuérdame (Solo)
Natalia Lafourcade
14 Jan 2018, 20:46
Make It Work
Majid Jordan
14 Jan 2018, 18:35
From A To B To Infinity
Loz Speyer Feat. Chris Biscoe & Rachel Musson &...
14 Jan 2018, 18:26
Shape Of You
Ed Sheeran
14 Jan 2018, 18:18
Chasing Highs
ALMA
14 Jan 2018, 16:41
Sonnentanz (Sun Don't...
Klangkarussell Feat. Will Heard
Feel It Still
Portugal. The Man
Buy it on iTunes
My Shazam
Discover
Long press to Auto Shazam
00:23
SONG
LYRICS
VIDEO
Thunder
Imagine Dragons
6.7m Shazams
MUSIC
OPEN
BUY
Open in
DEEZER
Spotify

What You Will Learn

What You Will Learn

iOS 11

What You Will Learn

iOS 11

OS X 10.13

What You Will Learn

iOS 11

OS X 10.13

watchOS 4

What You Will Learn

iOS 11

OS X 10.13

watchOS 4

tvOS 11

What You Will Learn

iOS 11

OS X 10.13

watchOS 4

tvOS 11

Swift 4

What You Will Learn

iOS 11

OS X 10.13

watchOS 4

tvOS 11

Swift 4

Xcode 9

iOS Sessions

iOS Sessions

Every week - Wednesdays @ 6:30pm - Facebook

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Start with basics (iOS, Swift, Xcode)

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Intermediate Swift

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Intermediate Swift

How iOS works, Life cycle, MVC

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UI - Auto Layout

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Data & Parsing

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UI - Auto Layout

Data & Parsing

Networking, Threading

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Location

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ARKit

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ARKit

Quickly becomes challenging

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Quickly becomes challenging

Learn by doing, not by listening!

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Data & Parsing

Networking, Threading

Location

ARKit

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Public Slack kcltechhq.slack.com - #ios-programming, ios.kcl.tech

GitHub

GitHub

KCLTech iOS sessions on GitHub

GitHub

KCLTech iOS sessions on GitHub

Weekly update

GitHub

KCLTech iOS sessions on GitHub

Weekly update

Materials

GitHub

KCLTech iOS sessions on GitHub

Weekly update

Materials

Videos

GitHub

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Weekly update

Materials

Videos

Discussions

GitHub

KCLTech iOS sessions on GitHub

Weekly update

Materials

Videos

Discussions

https://goo.gl/5ofrVq

WWDC18

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World Wide Developer Conference in San Francisco

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World Wide Developer Conference in San Francisco

~300 Student Scholarship Recipients

WWDC18

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1.Swift Playground

- Visually interactive
- Experienced within three minutes
- Book
- Graphics, Audio and more

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- Experienced within three minutes
- Book
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2. Essay (500 words each)

- Describe your Swift Playground
- Beyond WWDC
- Assistance

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3. Judging
- Technical accomplishment
- Creativity of ideas
- Content of written responses

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- Assistance

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- Technical accomplishment
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Deadline: April, 2018

Xcode 9


Trivia
Play Trivia with Your Frien
Start a new game
Find an existing game
Sign out
Add New Constraints

Xcode 9

Swift 4

Xcode 9

Swift 4

watchOS 4

Xcode 9

Swift 4

watchOS 4

tvOS 11

Xcode 9

Swift 4

watchOS 4

tvOS 11

OS X

Xcode 9

Swift 4

watchOS 4

tvOS 11

OS X

Live design

Xcode 9

Swift 4

watchOS 4

tvOS 11

OS X

Live design

Visual debugging

Xcode 9

Swift 4

watchOS 4

tvOS 11

OS X

Live design

Visual debugging

Performance testing

Xcode 9

Swift 4

watchOS 4

tvOS 11

OS X

Live design

Visual debugging

Performance testing

UI Testing

Xcode 9

Swift 4

watchOS 4

tvOS 11

OS X

Live design

Visual debugging

Performance testing

UI Testing

Code Coverage

Xcode 9

Swift 4

watchOS 4

tvOS 11

OS X

Live design

Visual debugging

Performance testing

UI Testing

Code Coverage

Refactor and Transform

Xcode 9

Swift 4

watchOS 4

tvOS 11

OS X

Live design

Visual debugging

Performance testing

UI Testing

Code Coverage

Refactor and Transform

Cut The Cord

iOS 11


9:41
Messages
Calendar
Photos
Camera
Weather
Clock
Maps
News
Wallet
Notes
Reminders
Stocks
iTunes Store
App Store
Books
Health
Settings
9:41
Search
WEATHER
Show More
San Francisco
Sunny
Chance of Rain: 0%
65°
66° / 55°
UP NEXT
Lunch
12:00 – 1:00 PM
SIRI APP SUGGESTIONS
Show More
Photos
Weather
Settings
Maps
FAVORITES
Show More
Katie
Kelly
Yumi
John
Edit
Weather
San Francisco
Sunny
75°
Thursday TODAY
Now 1PM 2PM 3PM 4PM
75° 77° 78° 78° 76°
Friday
Saturday
Sunday
Monday
Tuesday
Wednesday
Thursday
Mailboxes
Inbox

iOS 11

iPhone X

iOS 11

iPhone X

Drag and Drop

iOS 11

iPhone X

Drag and Drop

Apple Pencil

iOS 11

iPhone X

Drag and Drop

Apple Pencil

Augmented Reality

iOS 11

iPhone X

Drag and Drop

Apple Pencil

Augmented Reality

SiriKit

iOS 11

iPhone X

Drag and Drop

Apple Pencil

Augmented Reality

SiriKit

Camera

iOS 11

iPhone X

Drag and Drop

Apple Pencil

Augmented Reality

SiriKit

Camera

AirPlay 2

iOS 11

iPhone X

Drag and Drop

Apple Pencil

Augmented Reality

SiriKit

Camera

AirPlay 2

MusicKit

Demo

Xcode 9

Swift 4

Swift 4

Swift 4

Swift 4

```c
#include <stdio.h>

int main()
{
  printf("Hello, KCL Tech\n");
  return 0;
}
```

```
print(“Hello, KCL Tech”)
```

Variables

Variables

```
var languageName: String = “Swift”
```

Constants and Variables

```
let languageName: String = “Swift”
```

Constants and Variables

SAFE

```
let languageName: String = “Swift”
```

Constants and Variables

SAFE

```
let languageName: String = “Swift”
var version: Double = 4.0
```

Constants and Variables

SAFE

```
let languageName: String = “Swift”
var version: Double = 4.0
var introducedIn: Int = 2014
```

Constants and Variables

SAFE

```
let languageName: String = “Swift”
var version: Double = 4.0
var introducedIn: Int = 2014
var isAwesome: Bool = true
```

Constants and Variables

SAFE

```
let languageName: String = “Swift”
var version: Double = 4.0
let introducedIn: Int = 2014
let isAwesome: Bool = true
```

Type Inference

SAFE

```
let languageName: String = “Swift”
var version: Double = 4.0
let introducedIn: Int = 2014
let isAwesome: Bool = true
```

Type Inference

SAFE

```
let languageName = “Swift”
var version = 4.0
let introducedIn = 2014
let isAwesome = true
```

Unicode Names

```
let languageName = “Swift”
var version = 4.0
let introducedIn = 2014
let isAwesome = true
```

Unicode Names

```
let languageName = “Swift”
var version = 4.0
let introducedIn = 2014
let isAwesome = true
let π = 3.14159265
```

Unicode Names

```
let languageName = “Swift”
var version = 4.0
let introducedIn = 2014
let isAwesome = true
let π = 3.14159265
let 🐶🐮 = “dogcow”
```

Combining Strings and Characters

Combining Strings and Characters

```
let dog = “dog”
```

Combining Strings and Characters

```
let dog = “dog”
let cow = “cow”
```

Combining Strings and Characters

```
let dog = “dog”
let cow = “cow”
let dogCow = dog + cow
// dogCow is “dogcow”
```

Building Complex Strings

Building Complex Strings

POWER

```
let a = 3
let b = 5

// “3 times 5 is 15”
```

Building Complex Strings


```
let a = 3
let b = 5

// “3 times 5 is 15”

let result = “\(a) times \(b) is \(a * b)”
```

String Mutability

String Mutability

```
var variableString = “Horse”
```

String Mutability

```
var variableString = “Horse”
variableString += “ and carriage”
//variableString is now “Horse and carriage”
```

String Mutability

```
var variableString = “Horse”
variableString += “ and carriage”
//variableString is now “Horse and carriage”

let constantString = “Horse”
```

String Mutability

```
var variableString = “Horse”
variableString += “ and carriage”
//variableString is now “Horse and carriage”

let constantString = “Horse”
constantString += “ and carriage”
//error
```

Array and Dictionary

```
var names = [“Anna”, “Brian”, “Jack”]
```

```
var numberOfLegs = [“ant”: 6, “snake”: 0]
```

Typed Collections

```
var names = [“Anna”, “Brian”, “Jack”]
```

Typed Collections

```
var names = [“Anna”, “Brian”, “Jack”, 42]
```

Typed Collections

```
var names = [“Anna”, “Brian”, “Jack”, true]
```

Typed Collections

```
var names: Array<String> = [“Anna”, “Brian”, “Jack”]
```

```
var ages = Array<Int>()
let values = Array<Int>(repeating: 1, count: 5)
```

Loops

Loops

```
while hungry {
  eatCake()
}
```

Loops

```
while hungry {
  eatCake()
}
```

```
var index = 0
repeat {
  index++
} while index < 5
```

For-In: Strings and Characters

For-In: Strings and Characters


```
for character in "🐭🐭🐭🐭🐭" {
  print(character)
}
```

For-In: Strings and Characters

POWER

```
for character in "🐭🐭🐭🐭🐭" {
  print(character)
}
```

```
🐭
🐭
🐭
🐭
🐭
```

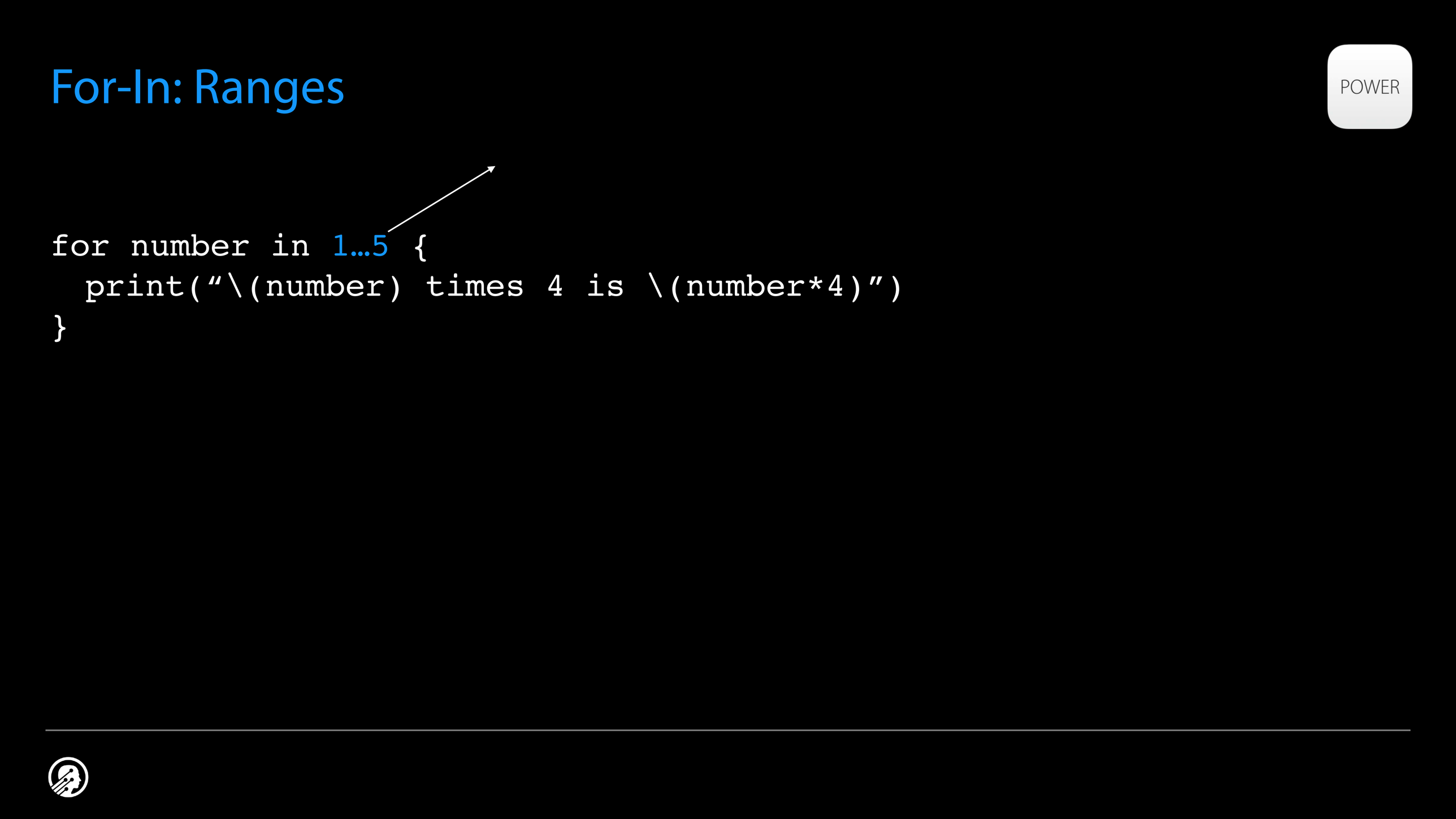
For-In: Ranges

POWER

For-In: Ranges

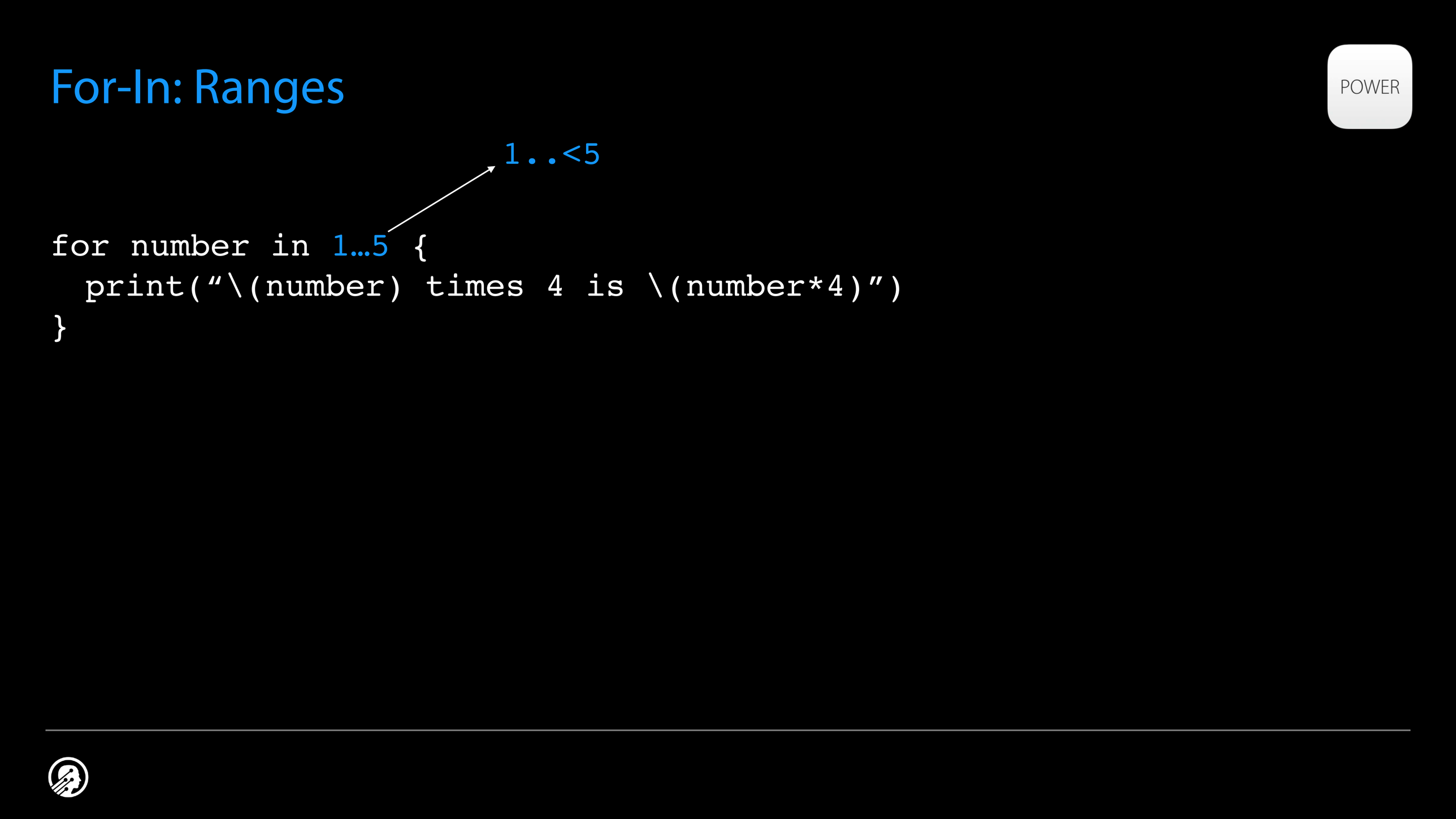

```
for number in 1…5 {
  print(“\(number) times 4 is \(number*4)”)
}
```

For-In: Ranges




```
for number in 1…5 {
  print(“\(number) times 4 is \(number*4)”)
}
```

For-In: Ranges



1..<5

```
for number in 1…5 {
  print(“\(number) times 4 is \(number*4)”)
}
```

For-In: Ranges

POWER

1..<5

```
for number in 1…5 {
  print(“\(number) times 4 is \(number*4)”)
}
```

```
1 times 4 is 4
2 times 4 is 8
3 times 4 is 12
4 times 4 is 16
5 times 4 is 20
```

For-In: Arrays

POWER

For-In: Arrays

POWER

```
for name in [“Anna”, “Brian”, “Jack”] {
  print(“Hello, \(name)!”)
}
```

For-In: Arrays

POWER

```
for name in [“Anna”, “Brian”, “Jack”] {
  print(“Hello, \(name)!”)
}
```

```
Hello, Anna!
Hello, Brian!
Hello, Jack!
```

For-In: Dictionaries

POWER

For-In: Dictionaries


```
var numberOfLegs = [“ant”: 6, “snake”: 0, “cheetah”: 4]
```

For-In: Dictionaries


```
var numberOfLegs = [“ant”: 6, “snake”: 0, “cheetah”: 4]

for (animal, leg) in numberOfLegs {
  print(“\(animal)s have \(leg) legs”)
}
```

For-In: Dictionaries

POWER

```
var numberOfLegs = [“ant”: 6, “snake”: 0, “cheetah”: 4]

for (animal, leg) in numberOfLegs {
  print(“\(animal)s have \(leg) legs”)
}
```

```
ants have 6 legs
snakes have 0 legs
cheetahs have 4 legs
```

If Statements

If Statements

```
if legCount == 0 {

  print(“It slides”)

} else {

  print(“It walks”)
}
```

More Complex If Statements

More Complex If Statements

```
if legCount == 0 {

  print(“It slides”)

} else if legCount == 1 {

  print(“It hops”)

} else {

  print(“It walks”)
}
```

Switch

Switch

```
switch legCount {
  case 0:
    print(“It slides”)

  case 1:
    print(“It slides”)

  default:
    print(“It slides”)
}
```

Switch

Switch

```
switch legCount {
  case 0:
    print(“It slides”)

  case 1,3,5,7,9:
    print(“It hops”)

  case 2,4,6,8,10:
    print(“It walks”)

  default:
    print(“No idea”)
}
```

Switch

Switch


```
switch textField {
  case userNameTextField:
    print(“You tapped the username text field”)

  case passwordTextField:
    print(“You tapped the password text field”)

  default:
    print(“You tapped some other object”)
}
```

Switch

Switch

```
let point = (1, -1)

switch point {
  case let (x, y) where x == y:
    print(“x equals with y”)

  case let (x, y) where x == -y:
    print(“x is the abs of y”)

  case let (x, y):
    print(“x and y are two coordinates”)
}
```

Functions

Functions

```
func sayHello() {
  print(“Hello!”)
}
```

Functions

```
func sayHello() {
  print(“Hello!”)
}

sayHello()
```

Functions

```
func sayHello() {
  print(“Hello!”)
}

sayHello()
```

```
Hello
```

Functions with Parameters

Functions with Parameters

```
func sayHello(name: String) {
  print(“Hello \(name)!”)
}
```

Functions with Parameters

```
func sayHello(name: String) {
  print(“Hello \(name)!”)
}

sayHello(“WWDC”)
```

Functions with Parameters

```
func sayHello(name: String) {
  print(“Hello \(name)!”)
}

sayHello(“WWDC”)
```

```
Hello, WWDC!
```

Functions with Parameters

Functions with Parameters

```
func sayHello(name: String, age: Int) {
  print(“Hello \(name), \(age)!”)
}
```

Functions with Parameters

```
func sayHello(name: String, age: Int) {
  print(“Hello \(name), \(age)!”)
}

sayHello(“Peter”, age: 20)
```

Functions with Parameters

```
func sayHello(name: String, age: Int) {
  print("Hello \(name), \(age)!")
}

sayHello("Peter", age: 20)


func sayHello(name: String, _ age: Int) {
  print("Hello \(name), \(age)!")
}
```

Functions with Parameters

```
func sayHello(name: String, age: Int) {
  print(“Hello \(name), \(age)!”)
}

sayHello(“Peter”, age: 20)


func sayHello(name: String, _ age: Int) {
  print(“Hello \(name), \(age)!”)
}

sayHello(“Peter”, 20)
```

Functions with Parameters

Functions with Parameters

```
func addListOfParams(params: String…) {
  // Do something with params
}
```

Functions with Parameters

```
func addListOfParams(params: String…) {
  // Do something with params
}

addListOfParams(“Name”, “Peter”, “Age”, “Cat”)
```

Returning Values

Returning Values

```
func sayHello(name: String) -> String {
  return “Hello ” + name
}
```

Returning Values

```
func sayHello(name: String) -> String {
  return “Hello ” + name
}

let greeting = sayHello(“WWDC”)
```

Returning Values

```
func sayHello(name: String) -> String {
  return “Hello ” + name
}

let greeting = sayHello(“WWDC”)

println(greeting)
```

Returning Values

```
func sayHello(name: String) -> String {
  return “Hello ” + name
}

let greeting = sayHello(“WWDC”)

println(greeting)
```

```
Hello, WWDC
```

Returning Multiple Values

MODERN

Returning Multiple Values

MODERN

```
func refreshWebPage() -> (Int, String) {
  //…try to refresh…

  return (200, “Success”)
}

let (code, status) = refreshWebPage()
print(status)
```

Functions in General

Functions in General

```
func functionName(variableName: ParamType) -> ReturnType {
  return Variable as ReturnType
}
```

Demo

Swift in Playground

KCL TECH SOCIETY