

# Learning Swift Through Web Development

*A talk by Luis Padron.*



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# Swift Crash Course

- Swift is all about type-safety.
- Functions and closures are first class types.
- Beautiful pattern matching with custom enum types and switch cases.
- Generics.
- Extensions to existing classes without subclassing.

# The Basics

*// Create a variable*

```
var num = 3
```

*// Create a variable with explicit type*

```
var num2: Int = 3
```

*// Create a constant (always do this if possible)*

```
let name = "Luis"
```

*// Swift loves immutability*

```
let numbers = [10, 20, 30]
```

```
numbers.append(40) // Error: 'numbers' is 'let' constant
```

# The Basics - Functions

```
// Functions, control flow, and optionals  
func findNumber(_ num: Int, in numbers: [Int]) -> Int? {  
    for (index, curr) in numbers.enumerated() {  
        if curr == num {  
            return index  
        }  
    }  
  
    return nil  
}
```

```
findNumber(20, in: [10, 20, 30]) // -> 1
```

# The Swift-ier Things: Optionals

*// The three "types" in Swift*

```
var name: String = "Luis"
```

```
var name: String! = "Luis"
```

```
var name: String? = "Luis"
```

*// or*

```
var name: String? = nil
```

*// In C++*

```
if (node == nullptr) {  
    // Uh oh, don't access members.  
} else {  
    // Ok.. we're good!  
    node->left = new node();  
}
```

*// In Swift*

```
node?.left = new Node();
```

# The Swift-ier Things: Value Semantics

*// Swift passes structs by value.*

```
struct ImmutableType {  
    let name: String  
  
    init (name: String) {  
        self.name = name  
    }  
}
```

*// Swift passes class types by reference.*

```
class MutableReferenceType {  
    var name: String  
  
    init (name: String) {  
        self.name = name  
    }  
}
```

# Why Swift?

- Swift has awesome syntax.
- Swift is type-safe.
- Swift is really fast.
- Swift is modern.
- Swift is cool?

# Web Development Frameworks



Perfect



Vapor



Kitura

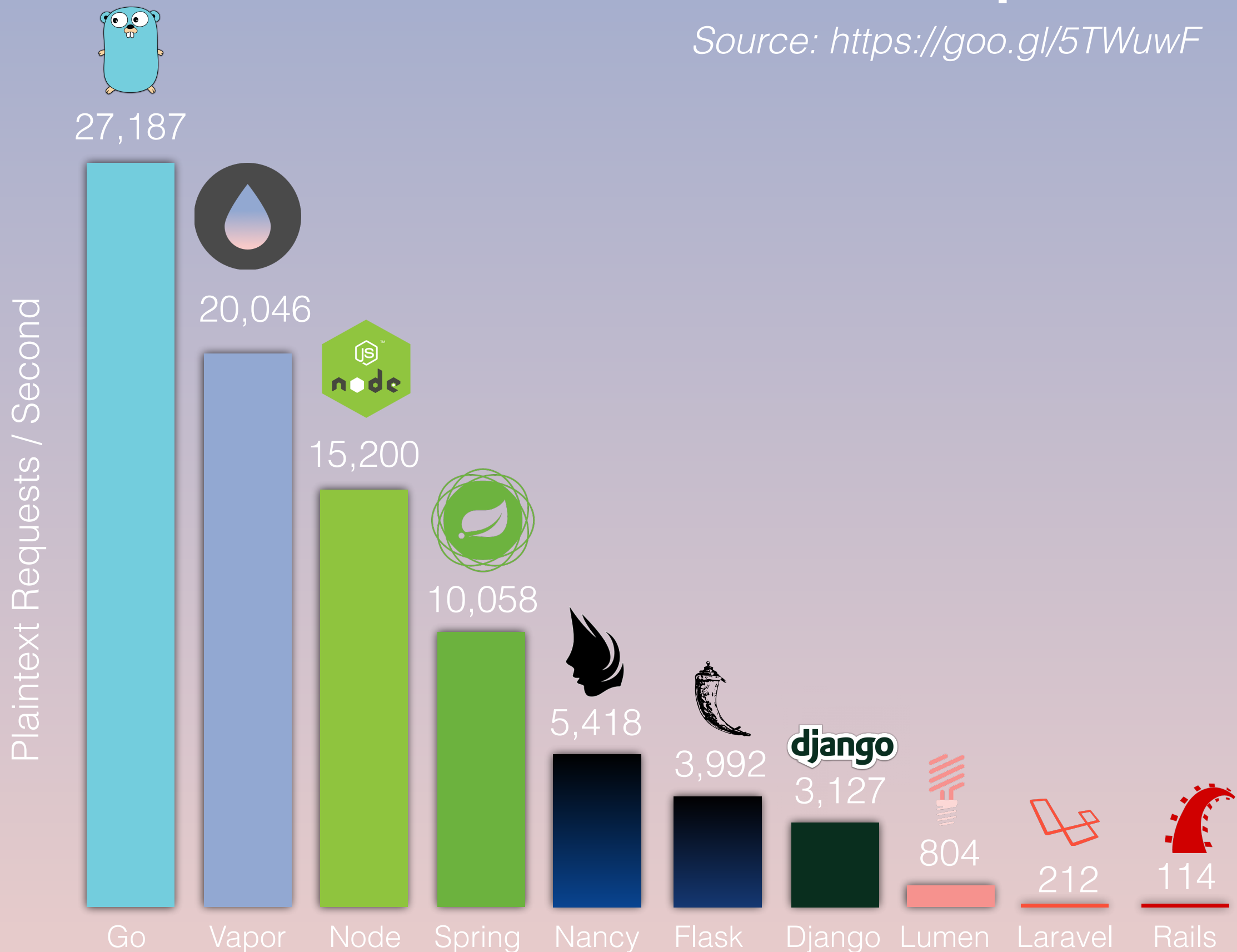


# Vapor

- Open-source.
- Fast.
- Modern.
- All the benefits of using Swift.

# How Fast is Vapor?

Source: <https://goo.gl/5TWuwF>



# Let's Get Started!

Go here and clone this repository as a starting point

<https://goo.gl/oQuAKn>

# While we wait... Closures!

```
let names = ["Luis", "Alex", "Rachel", "Steve", "Bill"]

func backward(_ s1: String, _ s2: String) -> Bool {
    return s1 > s2
}

let reversedNames = names.sorted(by: backward)
// reversedNames is equal to ["Steve", "Rachel", "Luis", "Bill", "Alex"]

// Using closure expression syntax
let reversedNames = names.sorted { name1, name2 in
    return name1 > name2
}

// Shorthand closure
let reversedNames = names.sorted { $0 > $1 }
```

<https://goo.gl/oQuAKn>

# While we wait... Other stuff!

```
// Using guard and defer
func readFile(file: File?) -> Bool {
    guard let f = file else { return false }
    // Do this work at the end of this functions life time.
    defer { f.close() }
    // Read the file, it's safe!
    //...
    return true
}
```

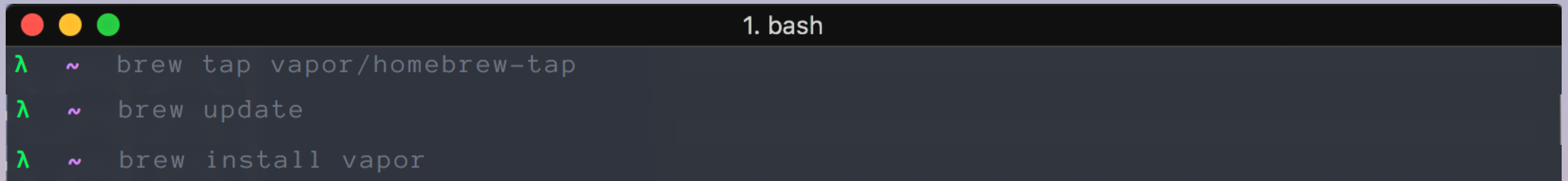
<https://goo.gl/oQuAKn>

# Learn More!

<https://developer.apple.com/swift>

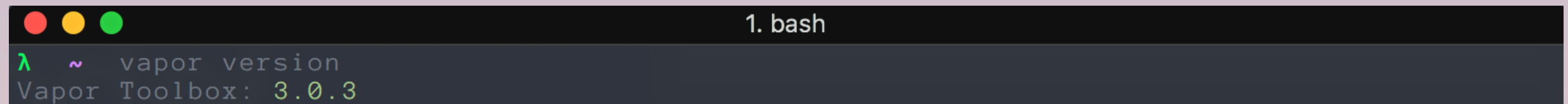
# It's time to code!

## Download and install Vapor

A terminal window with a dark background and light gray text. The title bar shows three colored circles (red, yellow, green) and the text "1. bash". The terminal content shows three lines of commands, each preceded by a green prompt character and a tilde symbol: "brew tap vapor/homebrew-tap", "brew update", and "brew install vapor".

```
1. bash
λ ~ brew tap vapor/homebrew-tap
λ ~ brew update
λ ~ brew install vapor
```

## Test your install

A terminal window with a dark background and light gray text. The title bar shows three colored circles (red, yellow, green) and the text "1. bash". The terminal content shows the command "vapor version" preceded by a green prompt character and a tilde symbol, followed by the output "Vapor Toolbox: 3.0.3".

```
1. bash
λ ~ vapor version
Vapor Toolbox: 3.0.3
```

<https://goo.gl/Wz9nc2>

# Follow along

<https://goo.gl/Wzgnc2>



# Thanks!

Learn more:

<https://vapor.codes>

Follow me:



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