

REST API's in Swift

Daniel Tomlinson ✉ @dantoml

Key Parts

- 1. HTTP Server (kylef/Currasow)**
- 2. Router (nestproject/Frank)**

Decentralization



<https://github.com/NestProject>

Key Parts

1. HTTP Server (**kylef/Currasow**)

Key Parts

- 1. HTTP Server (kylef/Currasow)**
- 2. Router (nestproject/Frank)**

Hello World

```
// main.swift
import Frank

func responseWithName(name: String) -> ResponseConvertible {
    return Response(.ok,
                    contentType: "text/html",
                    body: "\<html\>\<body\>\<h1\>Hello \<(name)\>\</h1\>\</body\>\</html\>")
}

// GET /
get { _ in
    return responseWithName("World")
}

// GET /hello/{name}
get("hello", *) { (_, name: String) in
    return responseWithName(name)
}
```

MARIO
000000

• X00

WORLD
1-1

TIME

LEVEL
UP



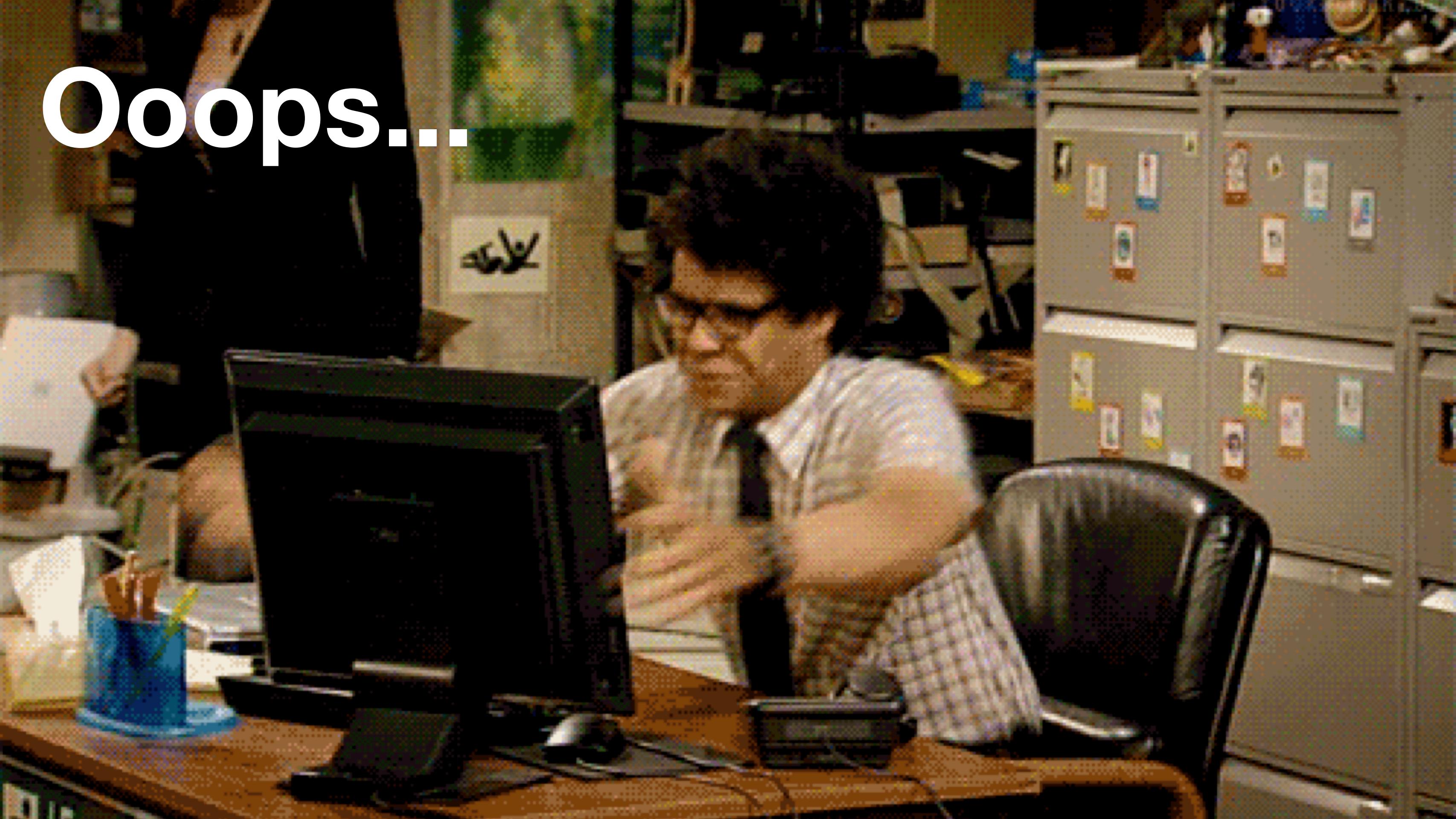
UP



Live Coding



Ooops...



Getting Started

```
$ mkdir api  
$ touch Package.swift  
$ mkdir api  
$ touch api/main.swift  
$ touch api/helpers.swift
```

SPM

```
// Package.swift
import PackageDescription

let package = Package(
    name: "API",
    dependencies: [
        .Package(url: "https://github.com/nestproject/Frank.git", majorVersion: 0),
        .Package(url: "https://github.com/danieltomlinson/Resource.git", majorVersion: 0)
    ]
)
```

SPM

\$ swift build



Models!

```
// main.swift
import Resource

enum Status: String {
    case Outstanding
    case Completed
}

struct Todo: Resource {
    let identifier: String
    let title: String
    let status: Status

    init(identifier: NSUUID().UUIDString, title: String, status: Status = .Outstanding) {
        self.identifier = identifier
        self.title = title
        self.status = status
    }

    func attributes() -> [String : Any] {
        return [
            "identifier": identifier,
            "title": title,
            "status": status.rawValue
        ]
    }
}
```

Storage

```
// main.swift  
  
...  
  
var todos = [  
    Todo(identifier: "1234", title: "Write talk for SPADC", status: .Completed),  
    Todo(title: "Present talk at SPADC")  
]
```

GET /todos

```
// main.swift
import Resource
import Frank
...
get("todos") { _ in
    return collectionResponse(todos)
}
```

GET /todos

```
[  
  {  
    "identifier": "1234",  
    "title": "Write SPADC Talk",  
    "status": "Completed"  
  },  
  {  
    "identifier": "967B102B-EAEB-462F-907E-F193CE2DB463",  
    "title": "Present talk at SPADC",  
    "status": "Outstanding"  
  }  
]
```

POST /todos

```
// main.swift

post("todos") { req in
    var request = req
    let body = request.body!.collect()
    let parsed = try! JSONParser.parse(body).dictionaryValue!
    let title = parsed["title"]!.stringValue!
    let status = parsed["status"]!.stringValue!

    let todo = Todo(title: title, status: Status(rawValue: status))
    todos.append(todo)

    return todo.get(request)
}
```

POST /todos

```
{  
  "identifier": "9B534BBF-C5E0-48F9-9D26-2F2A874BCC16"  
  "title": "Hello SPADC!",  
  "status": "Outstanding"  
}
```

GET /todos/{identifier}

```
// main.swift

func todoWithIdentifier(identifier: String) -> Todo? {
    return todos.filter { $0.identifier == identifier } .first
}

get("todos", *) { (request, identifier: String) in
    guard let todo = todoWithIdentifier(identifier) else {
        return Response(.NotFound, contentType: "application/json", headers: [], content: "{}")
    }

    return todo.get(request)
}
```

GET /todos/1234

```
{  
  "identifier": "1234",  
  "title": "Write talk for SPADC",  
  "status": "Completed"  
}
```

POST /todos/{identifier}/toggle

```
// main.swift

post("todos", *, "toggle") { (request, identifier: String) in
    guard var todo = todoWithIdentifier(identifier) else {
        return Response(.NotFound, contentType: "application/json", headers: [], content: "{}")
    }

    switch todo.status {
        case .Outstanding:
            todo.status = .Completed
        case .Completed:
            todo.status = .Outstanding
    }

    todos = todos.filter({ $0.identifier != identifier }) + [todo]

    return try! todo.get(request)
}

---

# POST /todos/967B102B-EAEB-462F-907E-F193CE2DB463/toggle

```json
{
 "identifier": "967B102B-EAEB-462F-907E-F193CE2DB463",
 "title": "Give talk at SPADC",
 "status": "Completed"
}

```



Here is where we pretend  
that everything worked.

# Questions?

- <https://github.com/danieltomlinson/swift-rest-demo>
- <https://twitter.com/dantoml>
- <mailto:dan@tomlinson.io>