

GIT FUNCTIONAL

A memory dump of Lambda Squared and some words
on Functional Programming.

PRESENTER: AMOS GARNER

SUMMARY



BACKSTORY

*In the beginning there was suffering.
Then there was Haskell, and the
suffering continued.*

*Do not try to change the state; that's
impossible. Instead only try to realize
the truth: There is no state.*

DISCLAIMER:

I went to one conference and did some googeling. This does not make me an expert.

*Opinionated... sure, but not an expert.
So be sure to take this talk with a whole cup of salt.*

TERMINOLOGY: 1/2

Functor

Set of rules that are expected from a function's I/O.

Lambda

A function that can be treated like a value.

Monoid

A function that takes in a input type and returns that same type.

Monad

An object containing a return and a chain.

TERMINOLOGY: 2/2

Mutability

Determines if data can or cannot change.

Side Effects

Code in this function interacts with an external mutable source.

Purity

The return value must only rely on it's inputs without side-effects.

Currying

Converting a function with multiple arguments into a one-at-a-time function.

FUNCTIONAL LANGUAGES

- Haskell
- Lisp
- Erlang
- Kotlin
- PHP, JS, Python **

Can be incorporated into any language. I like to call this being Objectively Functional or Functionally Objective.

COMMON PROBLEMS W/ FUNCTIONAL SOLUTIONS

WHEN CODE IS HARD TO TEST

Remove complexity to get to core logic.

```
async function printStuff(ids){
  url = '/getStuff?ids={join(',',ids)}'; //
  stuff = await fetchJSON(url); //
  foreach(stuff as item){
    details = 'Thing: {item.id}, created on {item.date}';
    console.log(details); //
  }
}
```

```
function detailsForStuff(stuff){
  details = [];
  foreach(stuff as item){
    push(details, getDetails(item));
  }
  return details;
}
```

WHEN CODE IS HARD TO GROK

Use declarative code when possible.

```
foreach(stuff as item){  
    push(details, getDetails(item));  
}
```

```
details = stuff.map(item, {  
    return getDetails(item);  
})
```

HELP, MY CODE IS BREAKING

Use Immutable Date to eliminate code fragility.

```
class Thing{
  constructor(id, stuff){
    this.id = id;
    this.stuff = Object.freeze(stuff)
  }
}
```

```
thing1 = new Thing(1, ['One', 'Two']);
thing1.stuff = ['Three', 'Four']
```

```
thing2 = new Thing(thing1.id, append(thing2.stuff, 'Three'));
```

MY THOUGHTS ON FUNCTIONAL PROGRAMMING

- Remove state from the equation
- Kinda pointless, but that's just me
- Definitely some things we can use here

ANY QUESTIONS?

Presented By: Amos Garner
@BitFiendCoder

My Other Talks:

[Github.com/AmosGarner/Developer_Presentations](https://github.com/AmosGarner/Developer_Presentations)