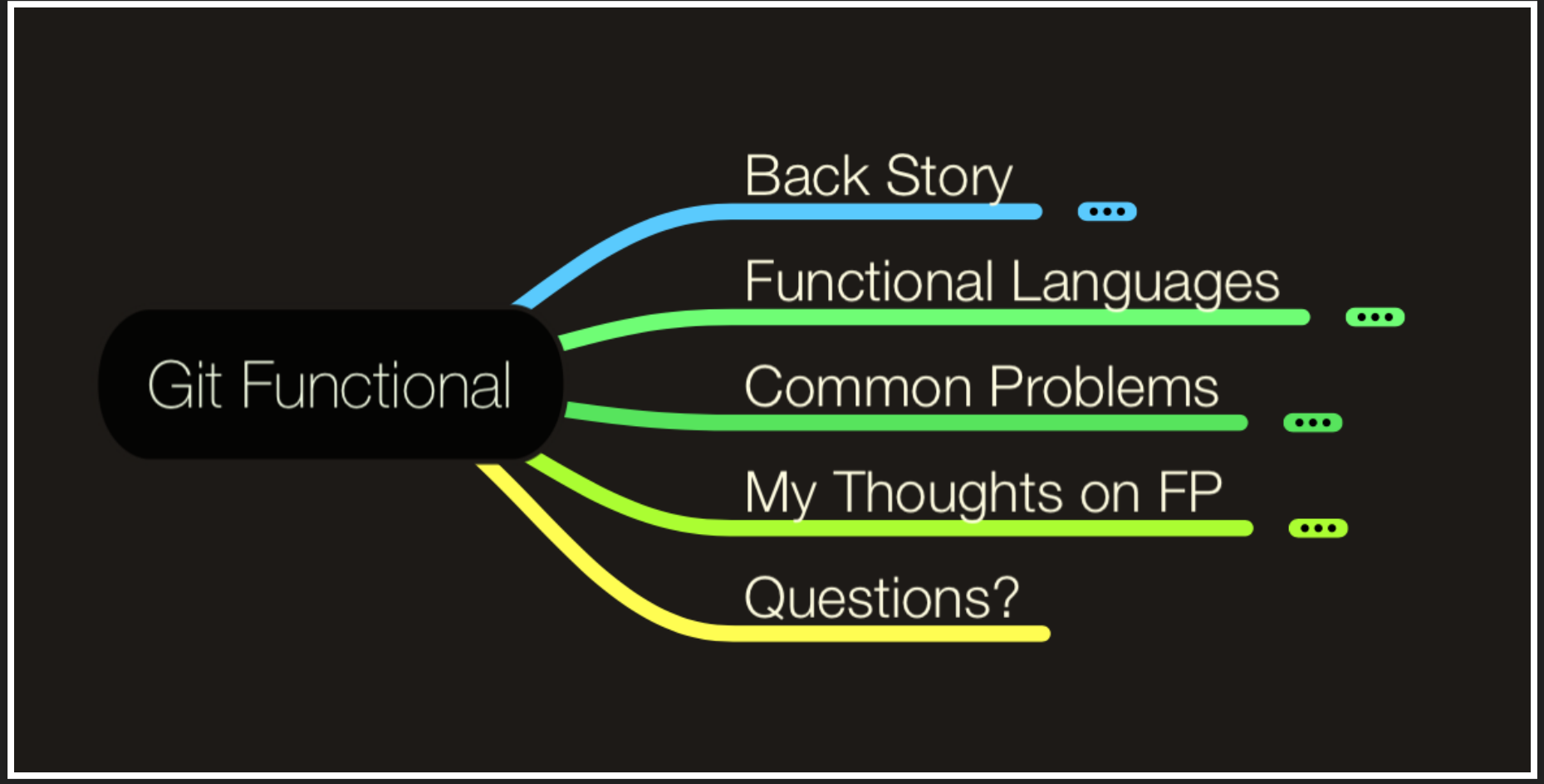
GIT FUNCTIONAL

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

PRESENTER: AMOS GARNER

SUMMARY


Git Functional
Back Story
Functional Languages
Common Problems
My Thoughts on FP
Questions?

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.

Monaid

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

Determins if data can or cannot change.

Side Effects

Code in this function interacts with an external muttable 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 logStuffToConsole(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 getStuffDetails(stuff){
    details = [];
    foreach(stuff as item){
        push(details, getDetails(item));
    }
    return details;
}
```

WHEN CODE IS HARD TO GROK

Use declarative coding to improve code consistency.

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

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

HELP, MY CODE IS BREAKING

Use Immutable Data 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']; //Error
```

```
thing1N = new Thing(thing1.id, append(thing1.stuff, 'Three'));
```

MY THOUGHTS ON FUNCTIONAL PROGRAMMING

- Removes state from the equation
- Improves code flexibility
- Removes some code cruft
- Gets confusing in its ceremony
- Definitely some things we can use here

ANY QUESTIONS?

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My Other Talks:
Github.com/AmosGarner/Developer_Presentations