
mtl.rb
RUBY ENTHUSIASTS

Partial applications

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- Doesn’t programme in lisp
- Doesn’t have many github watchers
- Prefers whiskey to water

Functional

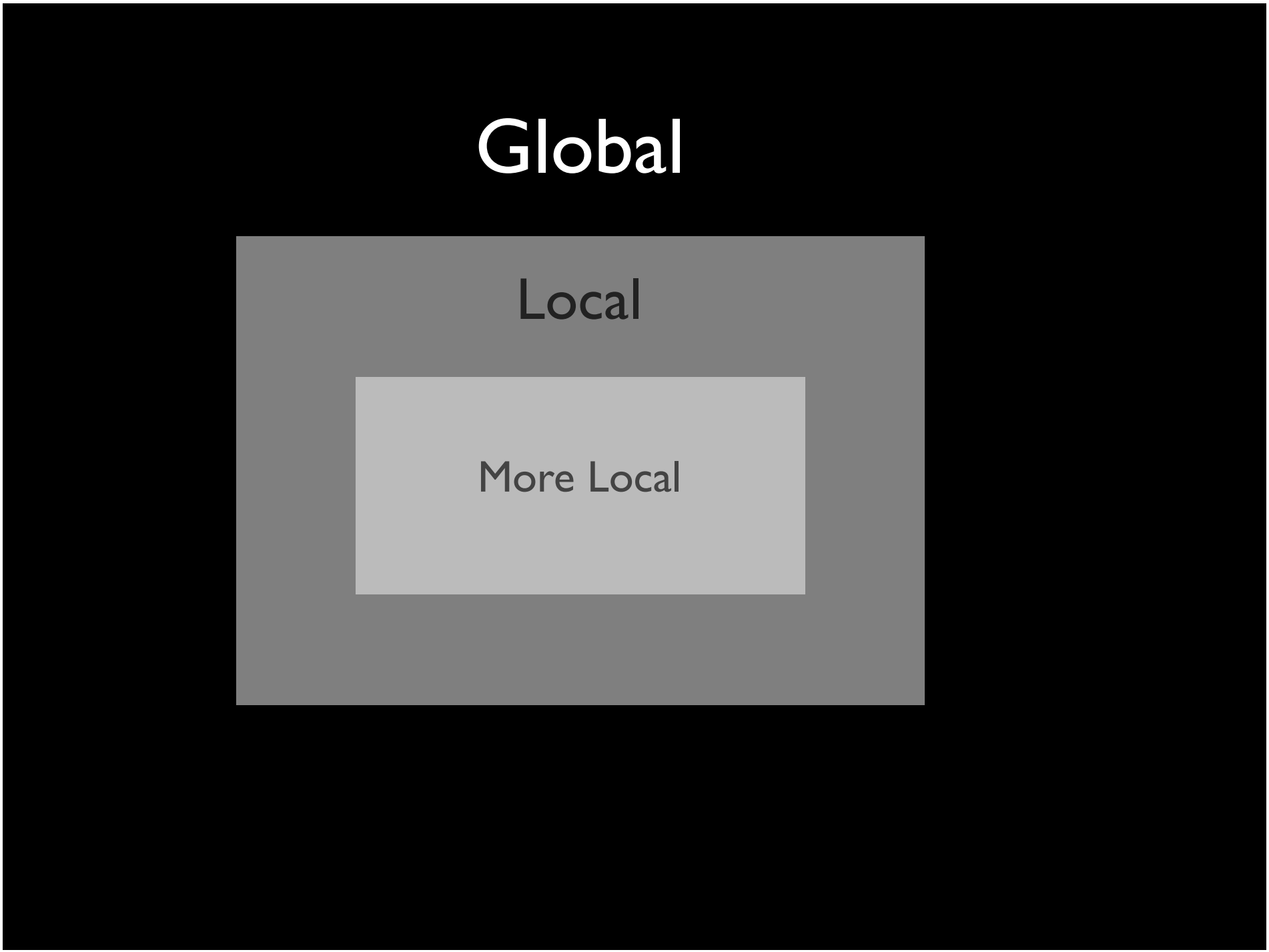
- Is a sentence structure
- Is thoughtful
- Will make you a better programmer

Closures

- The basis of many functional constructs
- You probably understand them already

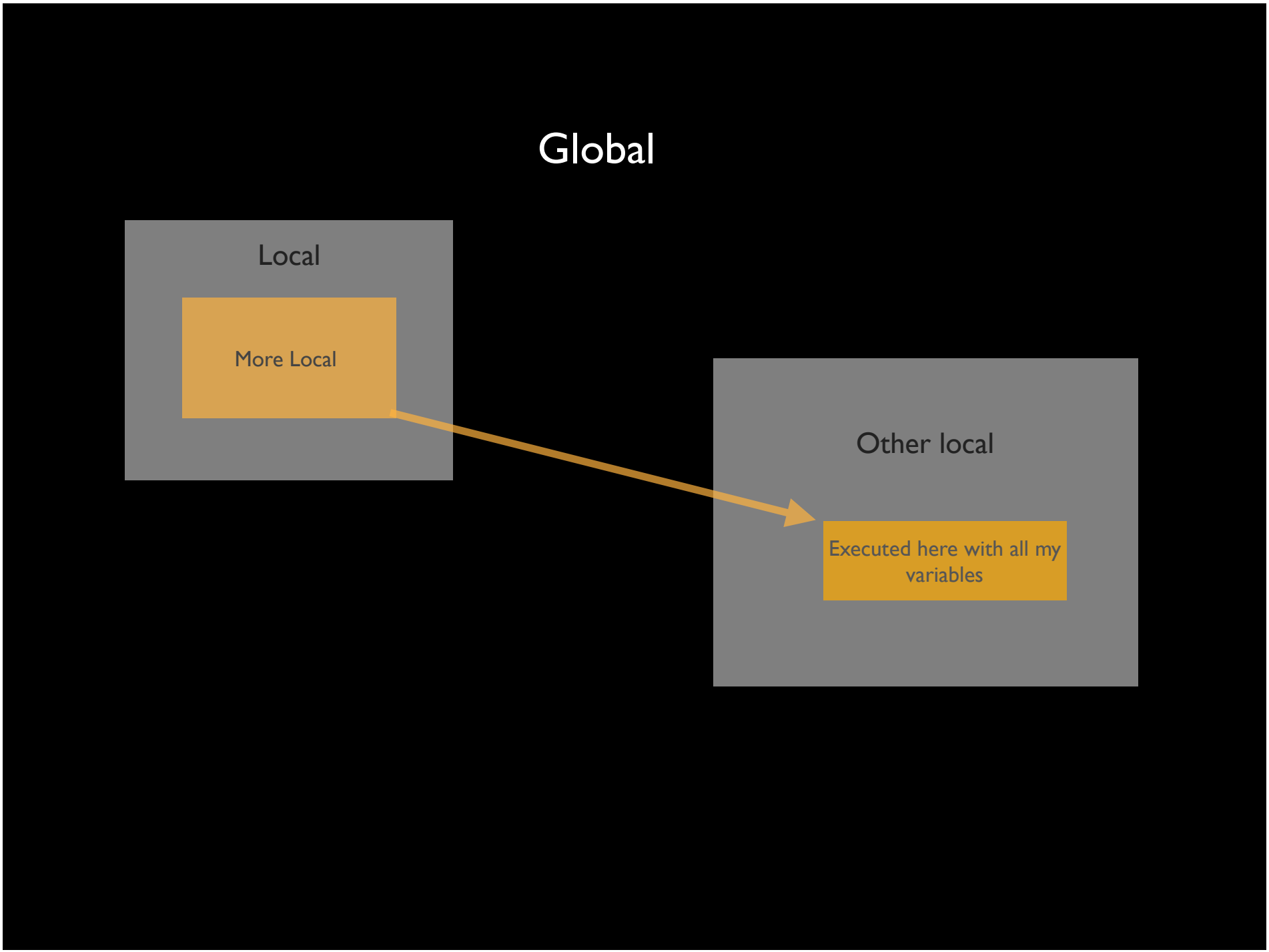
Closures

```
var addition = function(a){
    // i have a
    return function(b){
        // I have access to a and b
        return a + b;
    }
}
```


Global
Local
More Local

Technically

"A closure is a stack-frame which is *not deallocated* when the function returns."


Global
Local
More Local
Other local
Executed here with all my variables

Closures :D

```
var addition = function(a){
    // i have a
    return function(b){
        // I have access to a and b
        return a + b;
    }
}

addition(2)(2) #=> 2 + 2 = 4
```

Partial applications

```
csv("foo, bar, gaz") // => ['foo', 'bar', 'baz']
```

```
function cvs(text){
    return text.split(/,\s*/);
}
```

VS

```
function csv(text){
  return String.prototype.split.apply(text, /,\s*/)
}
```

Repetition

```
function csv(text){
    return String.prototype.split.apply(text, /,\s*/)
}

csv("foo, bar, gaz") // => ['foo', 'bar', 'baz']

function psv(text){
    return String.prototype.split.apply(text, /\|\s*/)
}

psv("foo | bar | baz") // => ['foo', 'bar', 'baz']

function lsv(text){
    return String.prototype.split.apply(text, /lol\s*/)
}

psv("foo lol bar lol baz") // => ['foo', 'bar', 'baz']
```

Extending functionality

- Inheritance via arguments
- Stateless
- Used so often the mechanics can be abstracted...

Curry is delicious!

Abstraction

```
Function.prototype.curry = function() {
    var fn = this
    var old_args = Array.prototype.slice.call(arguments);
    return function() {
        var new_args = old_args.concat(Array.prototype.slice.call
(arguments));
        return fn.apply(this, new_args);
    };
};
```

Better

```
var csv   = String.prototype.split.curry(/,\s*/);
var psv   = String.prototype.split.curry(/\|\s*/);
var lolsv = String.prototype.split.curry(/lol\s*/);
```

```
function cvs(text){
    return text.split(/,\s*/);
}
```

VS

```
function csv(text){
 return String.prototype.split.apply(text, /,\s*/)
}
```

VS

```
var csv   = String.prototype.split.curry(/,\s*/);
```

Extending functionality

- Use what you have
- Inheritance via argument *transformation*
- Maintain state by passing *transformed args*

Chaining

```
var add = function(a,b){ return a + b};
add4 = add.curry(4);

assert(4 + 4     == 8);
assert(add4(4)   == 8);
assert(add(4)(4) == 8);
```

Whats next?

- Domain specific languages
- Compilers

```
with ( require( "fab" ) )
( fab )
  ( listen, 0xFAB )
  ( /^\/hello/ )
    ( tmpl )
      ( "Hello, <%= this %>!" )
    ( /^\/(\w+)$/ )
      ( capture.at, 0 )
      ( "world" )
  ( 404 );
```

...lolwhat?

```
var example = (reindr)('ul')
                          ('li')("ichi")('/li')
                          ('li')("ni")('/li')
                          ('li')("san")('/li')
                        ('/ul')
                (reindr)

// renders: <ul><li>ichi</li><li>ni</li><li>san</li></ul>
```

Conclusion

- Abstract mechanics
- Build data structures with functions
- Build processing structures with function

Questions?