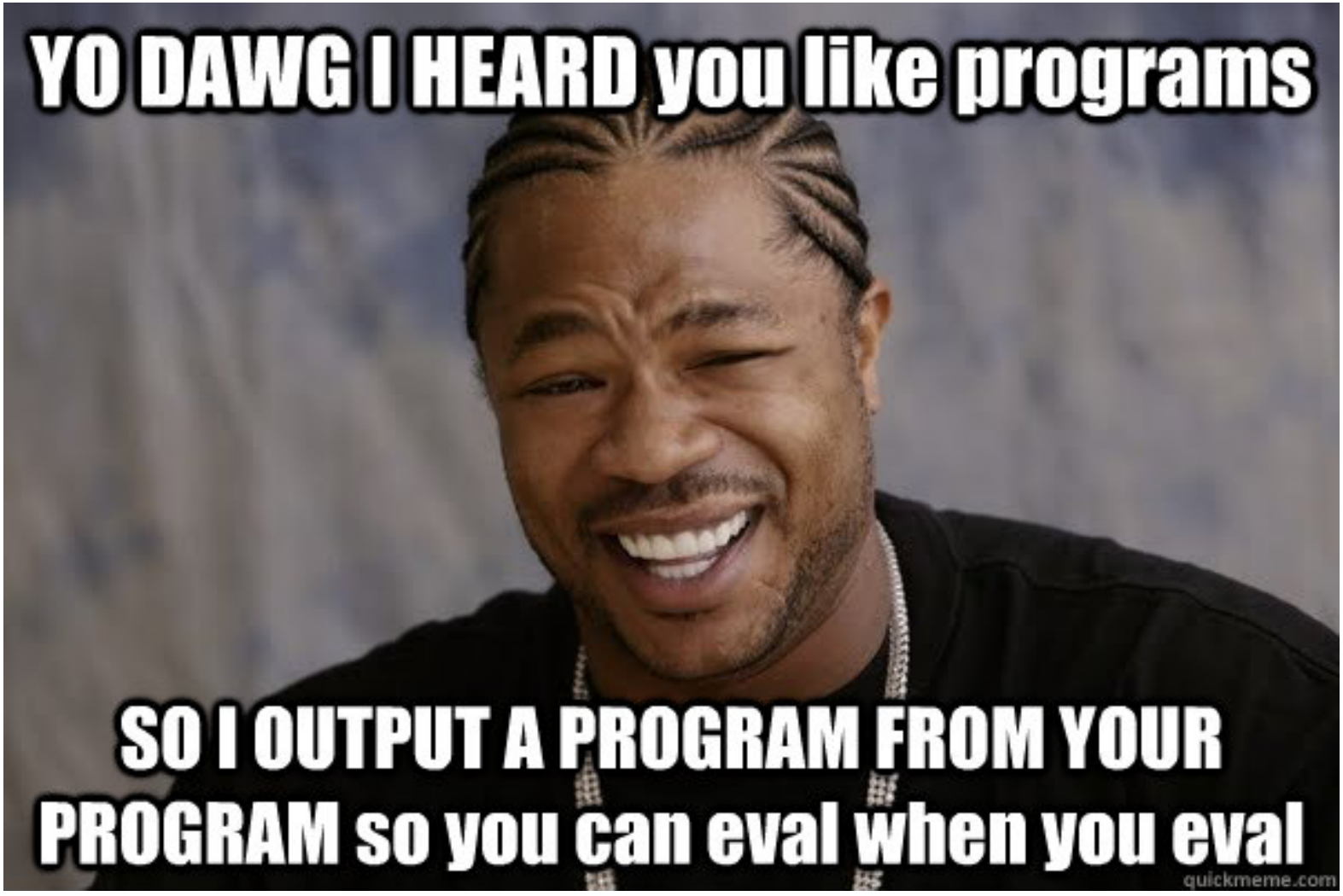
The Quine

Definition

A quine is a computer program which takes no input and produces a copy of its own source code as its only output.

$$T_u(\langle P \rangle) = \langle P \rangle$$


YO DAWG I HEARD you like programs
SO I OUTPUT A PROGRAM FROM YOUR PROGRAM so you can eval when you eval
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Quine, Yo

1. What's the point?

Quine, Yo

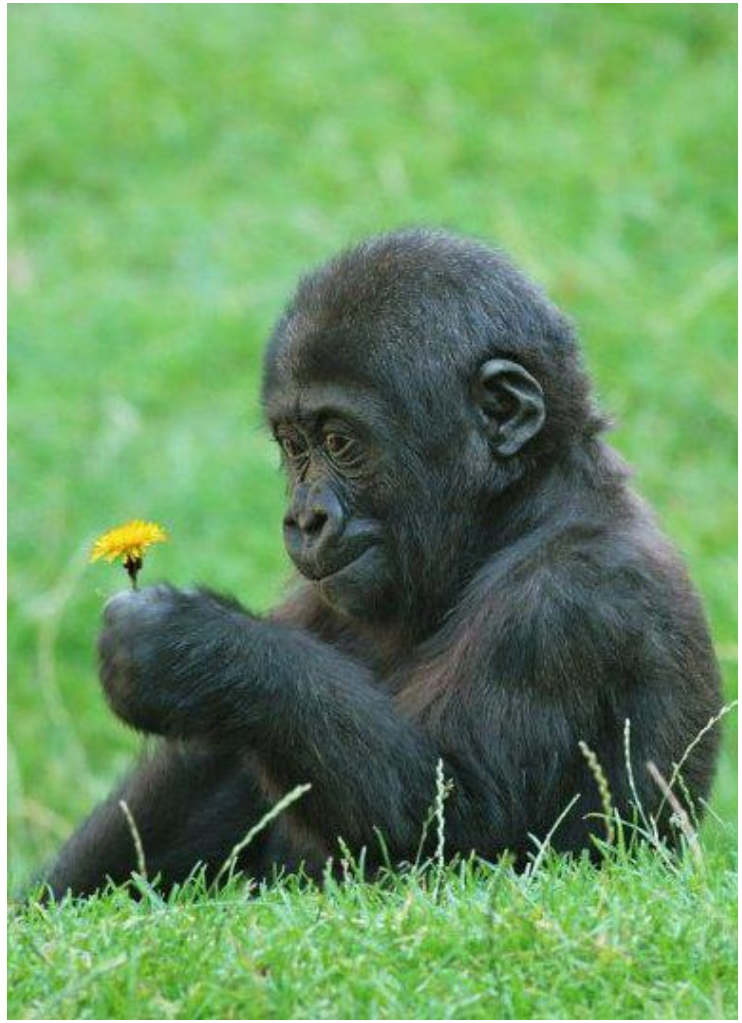
1. What's the point?
2. It's like a rubix cube...

Quine, Yo

1. What's the point?
2. It's like a rubix cube...
3. Perhaps more like a poem, less like a pun...

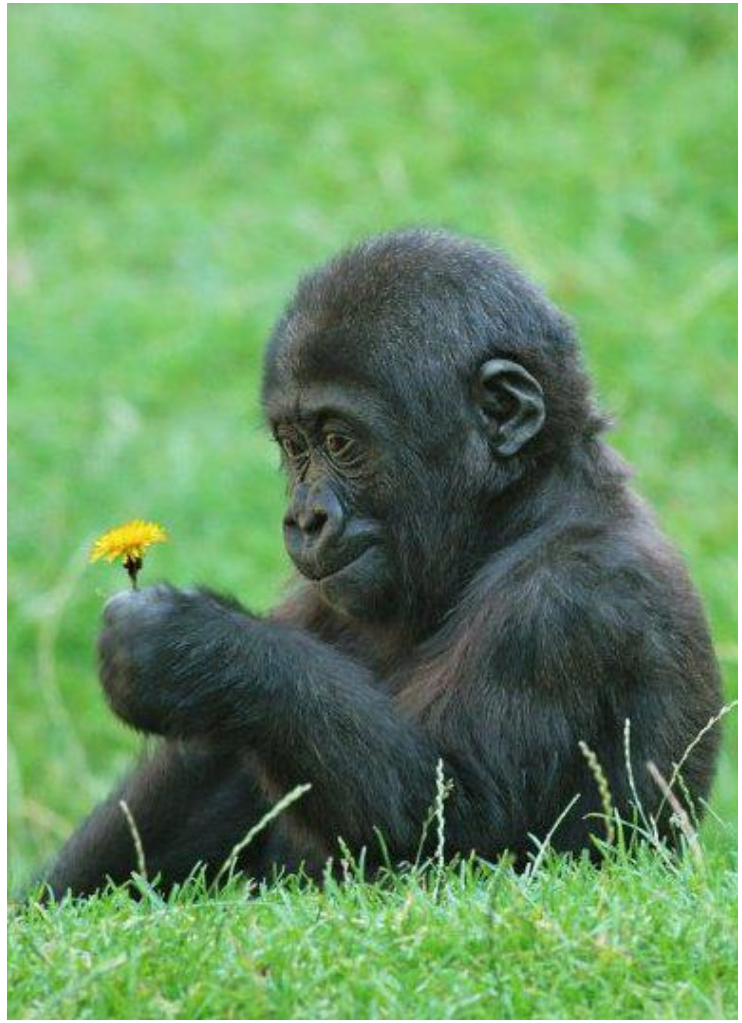
Da Quine

1. How do you build a quine?



Da Quine

1. How do you build a quine?
2. By thinking... *hard!*



The Quine

```
puts ...
```

The Quine

```
puts body
```

The Quine

```
body = ...
puts body
```

The Quine

```
body = ...
puts "body = %p" % body, body
```

The Quine

```
body = "puts \"body = %p\" % body, body"
puts "body = %p" % body, body
```

Le Quine

Let's explore...

Le Quine

Let's explore...

1. Abstract

Le Quine

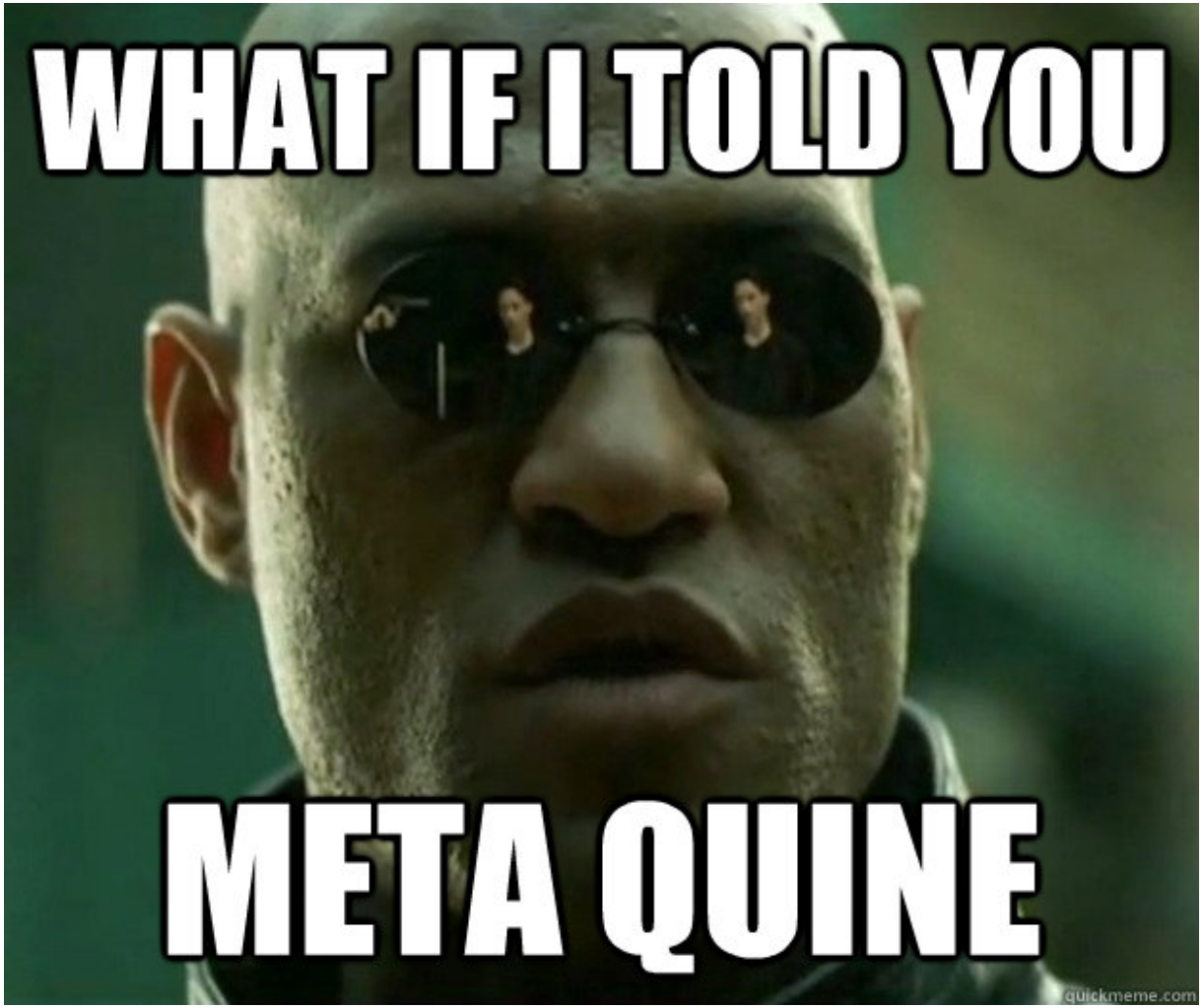
Let's explore...

1. Abstract
2. Generalize

Eveything would be easier if we just had a variable containing the source code...

Eveything would be easier if we just had a variable containing the source code... say $src

The Meta-Quine



The Meta-Quine for great justice

```
input = $stdin.read

head = <<EOS
$body = #{input.inspect}
$src  = "$head = %p\\n%s%s" %
        [$head, $head, $body]
EOS

print "$head = %p\n" % head
print head
print input
```

The Meta-Quine

A meta quine takes a program as input and produces a new program which can access its own source code through the $src variable.

The Meta-Quine

With a meta-quine, we can do cool things with quines super easily...

The Meta-Quine

With a meta-quine, we can do cool things with quines super easily...
In fact we can easily show that you can output any function of your own source code...

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Questions