

# 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**

[quickmeme.com](http://quickmeme.com)

# Quine, Yo



1. What's the point?

# Quine, Yo



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

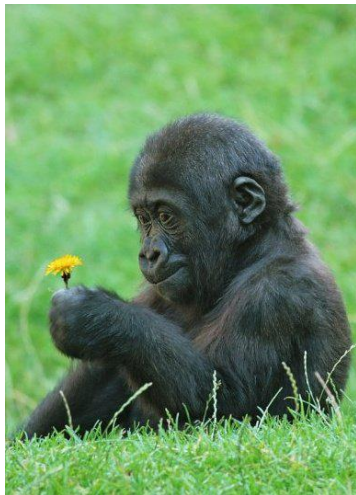
# Quine, Yo



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

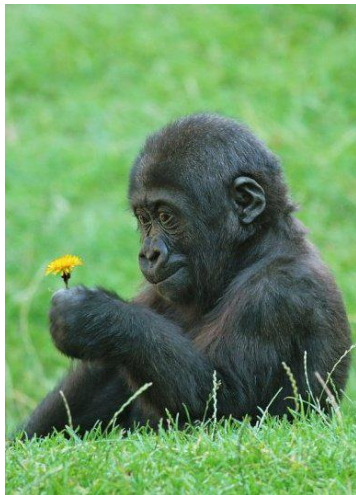
# Da Quine

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...

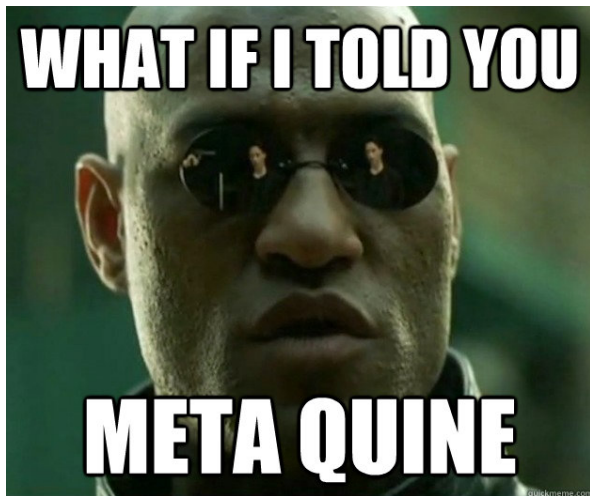
1. Abstract
2. Generalize

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



Everything 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
```

```
shim = <<EOS
```

```
$src = "$shim = %p\\n$body = %p\\n%s%s" % [$src,  
EOS
```

```
print "$shim = %p\\n$body = %p\\n" % [shim, input]
```

```
print shim
```

```
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...



# Questions

