

Business Natural Language (BNL)

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What?

Domain Specific Language (DSL)

Why?

Developer

Business

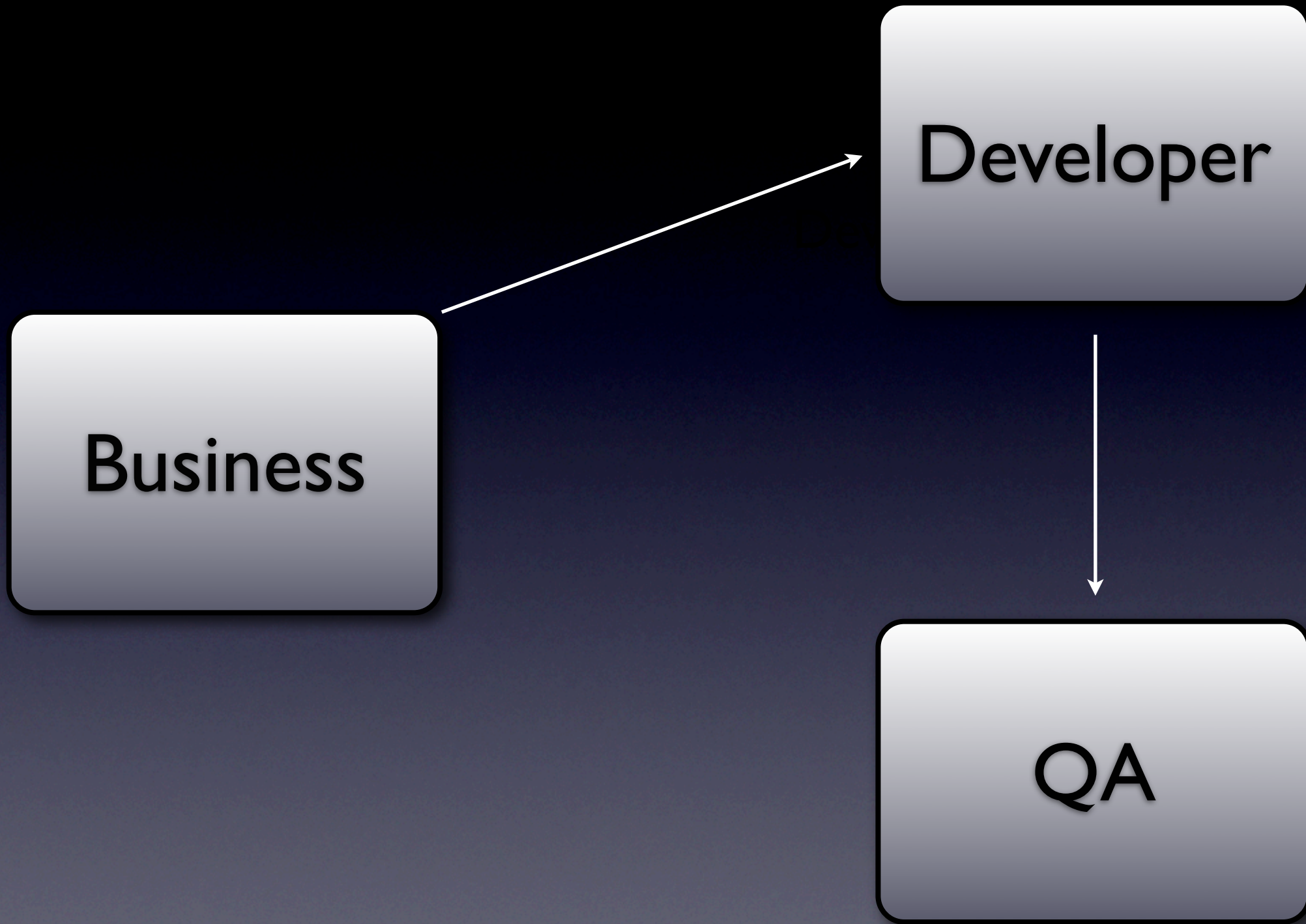
QA

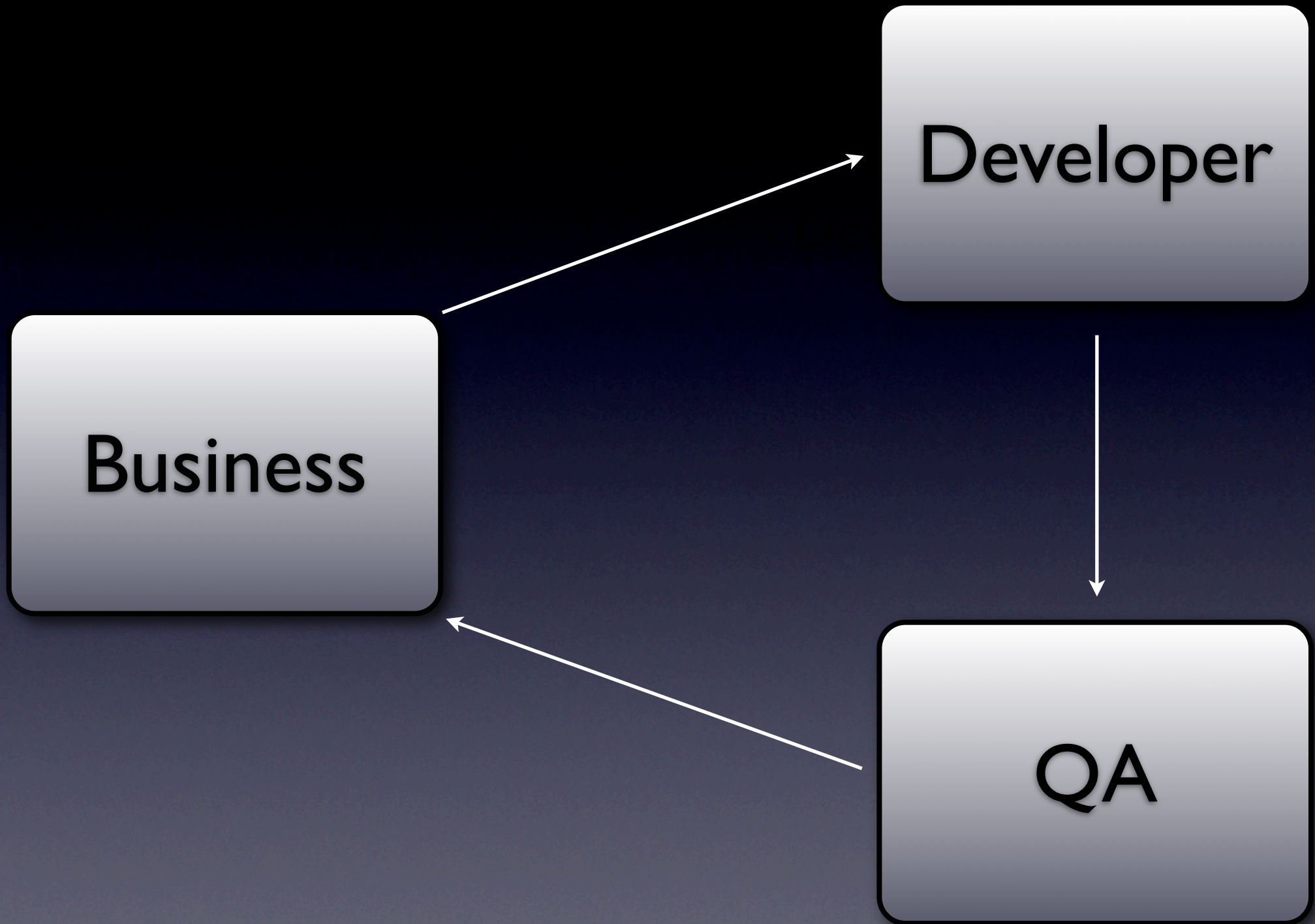
Business

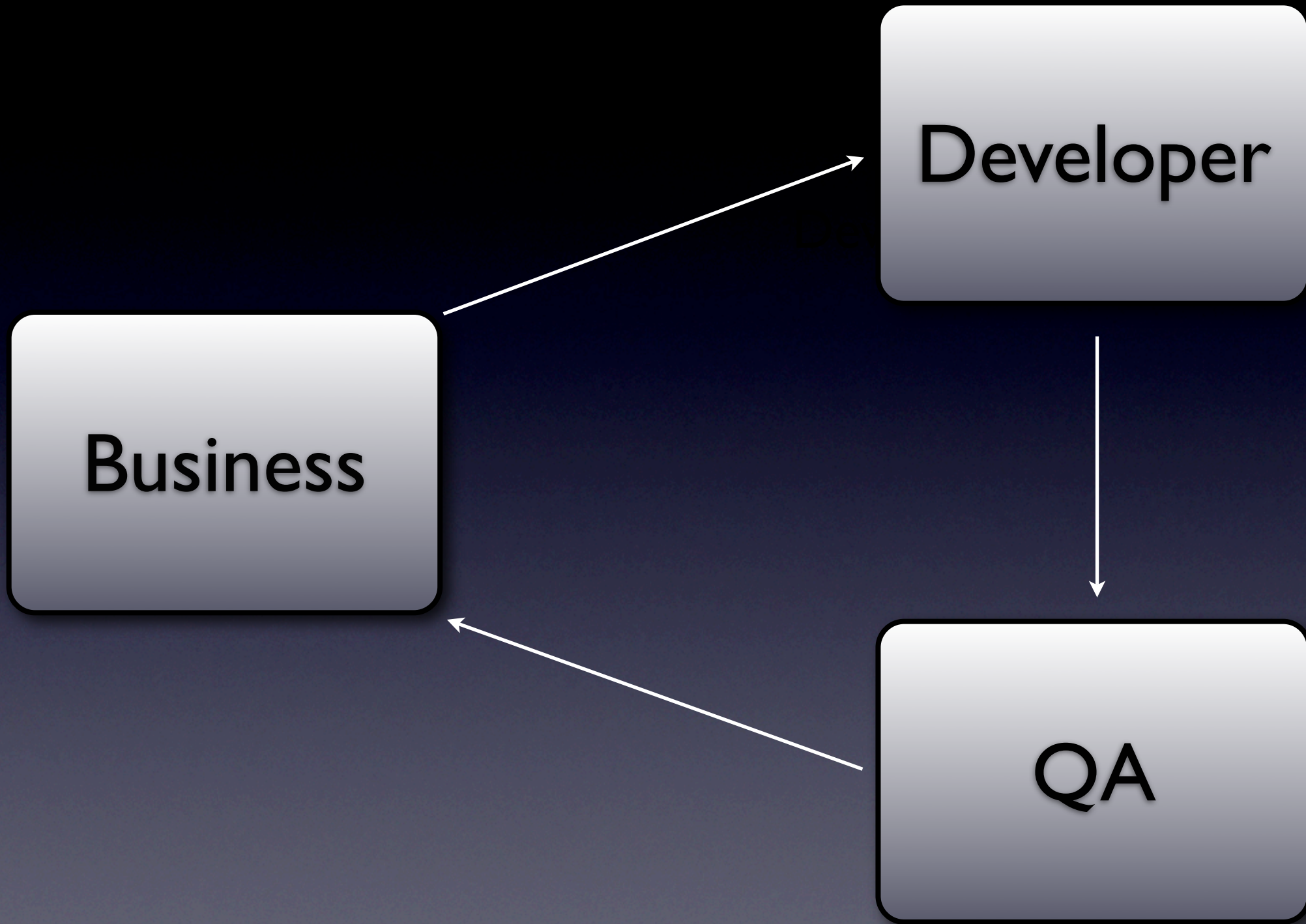
Developer

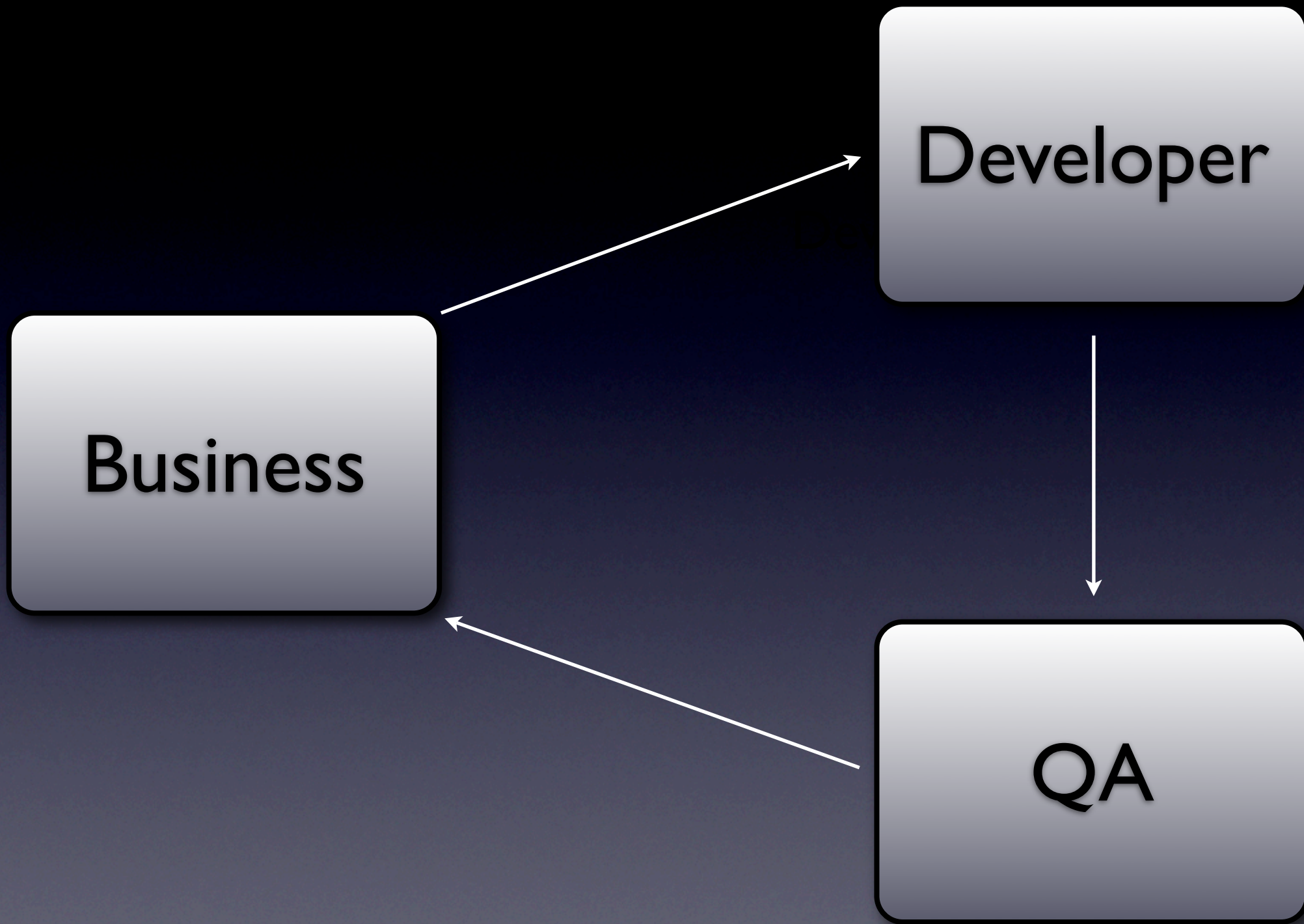
QA











Developer



A diagram consisting of a rounded rectangular box with a vertical gradient from light gray at the top to dark gray at the bottom. The word 'Business' is centered inside the box in a bold, black, sans-serif font. To the right of the box is a thin white circular arrow that starts at the top of the box, curves around to the right, and ends with an arrowhead pointing back to the top of the box, forming a clockwise loop.

Business

DSL

Why?

Benefits

Benefits

Managers

- Improve efficiency by distributing workload

Benefits

Benefits

Developers

- Technical Decisions
not Business Details

Benefits

Benefits

Business

- Time to market

BNL == DSL

BNL == DSL

#=> false

Domain Specific Languages

Domain Specific Languages

YACC

Excel Macros

Rake

Ruby on Rails
Cobol
XML
etc...

So?



Concise or
Verbose?



Concise or
Verbose?



Who's the
author?

“DSL” is too
general

BNL < DSL

BNL < DSL

#=> true

The Difference

The Difference

- Natural Language

The Difference

- Natural Language
- Written by the Business
 - subject matter experts

Today

Specification

Award 2 points if the fare
class is A, C, D, J, Z

Code

```
account.award 2.points if  
[A, C, D, J, Z].include?  
fare
```


Specification

Award 2 points if the fare
class is A, C, D, J, Z

Code

Award 2 points if the fare
class is A, C, D, J, Z

How?

External

Award 2 points if the fare
class is A, C, D, J, Z

Award 2 points if the fare
class is A, C, D, J, Z



```
account.award 2.points if  
[A, C, D, J, Z].include?  
fare
```


Award 2 points if the
fare class is A, C, D, J, Z

Award 2 points if the
fare class is A, C, D, J, Z

- `account.instance_eval`

Award 2 points if the
fare class is A, C, D, J, Z

- rule.gsub /^A/, “a”

award 2 points if the
fare class is A, C, D, J, Z

- `rule.gsub /^A/, "a"`

award 2 points if the
fare class is A, C, D, J, Z

- rule.gsub /\d /, '\1.'

award 2points if the
fare class is A, C, D, J, Z

- rule.gsub /\d /, '\1.'

award 2.points if the
fare class is A, C, D, J, Z

- rule.gsub /class/,”

award 2.points if the
fare is A, C, D, J, Z

- rule.gsub /class/,”

award 2.points if the
fare is A, C, D, J, Z

- rule.gsub /([A-Z,]+)/, '[\1]'

award 2.points if the
fare is [A, C, D, J, Z]

- rule.gsub /([A-Z,]+)/, '[\1]'

award 2.points if the
fare is [A, C, D, J, Z]

- rule.gsub /if the ([a-z]
+) is(\[.+\])/, 'if
\2.include? \1'

award 2.points if
[A, C, D, J, Z].include? fare

- rule.gsub /if the ([a-z]
+) is(\[.+\])/, 'if
\2.include? \1'

award 2.points if
[A, C, D, J, Z].include? fare

award 2.points if
[A, C, D, J, Z].include? fare



account.award 2.points if
[A, C, D, J, Z].include? fare

award 2.points if
[A, C, D, J, Z].include? fare



account.award 2.points if
[A, C, D, J, Z].include? fare

Specification == Code

Code, Specification,

Code, Specification, and Documentation

Readable Documentation

Descriptive And Maintainable Phrases (DAMP)

Maintainable

Readable by any
subject matter
expert

Who is the user?

Training

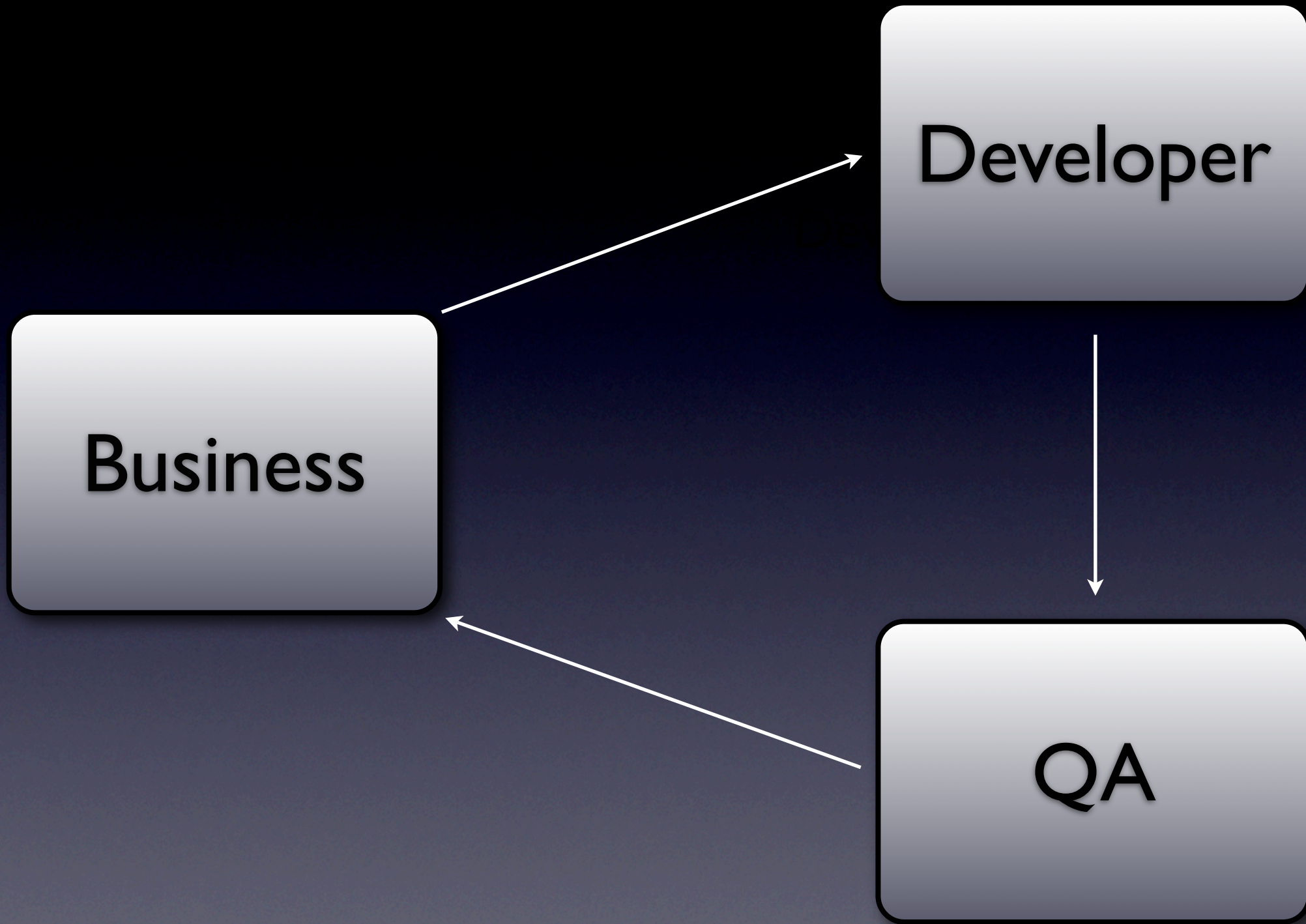
~~Training~~

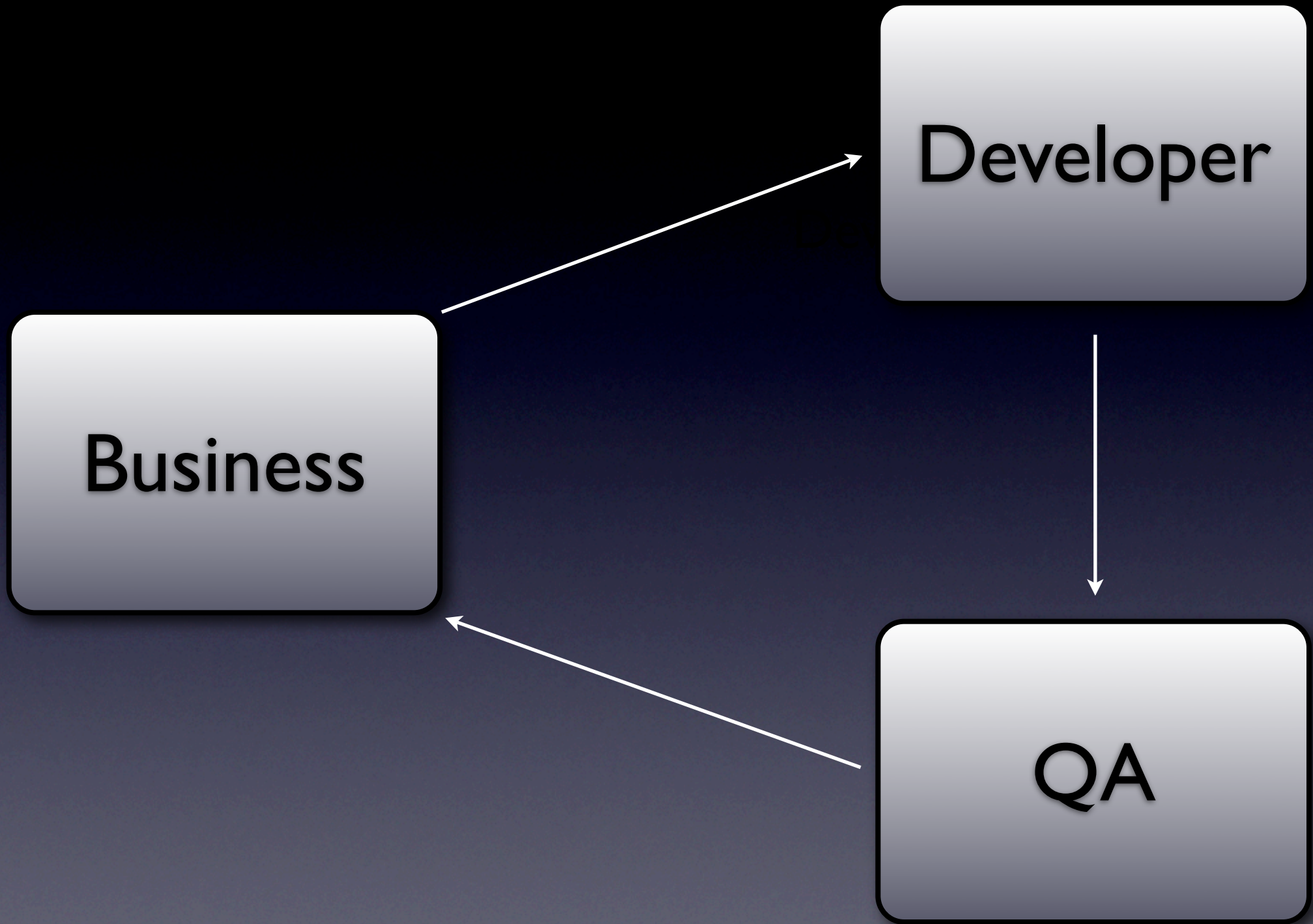
Statistics

Developer

Business

QA





Developer



Business

BNL

"A change that used to
take 3-4 days now takes
about 10 minutes."

Example

First Class / Business Class / BusinessFirst	A, C, D, J, R, Z	2
Full Fare Economy Class	Y, H	2
Economy Class	K, M, N, B, O, V, U	1


```
1 class Segment
2   def initialize(fare_class)
3     @fare_class = fare_class
4   end
5
6   def points
7     case @fare_class
8     when FareClass::A, FareClass::C, FareClass::D,
9        FareClass::J, FareClass::R, FareClass::Z then 2
10    when FareClass::Y, FareClass::H then 2
11    when FareClass::K, FareClass::M, FareClass::N,
12        FareClass::B, FareClass::O, FareClass::V,
13        FareClass::U then 1
14    end
15  end
16 end
```

Business Logic

```
8      when FareClass::A, FareClass::C, FareClass::D,  
9          FareClass::J, FareClass::R, FareClass::Z then 2  
10     when FareClass::Y, FareClass::H then 2  
11     when FareClass::K, FareClass::M, FareClass::N,
```



```
8      when FareClass::A, FareClass::C, FareClass::D,  
9          FareClass::J, FareClass::R, FareClass::Z then 2  
10     when FareClass::Y, FareClass::H then 2  
11     when FareClass::K, FareClass::M, FareClass::N,
```

BNL?

```
8      when FareClass::A, FareClass::C, FareClass::D,  
9          FareClass::J, FareClass::R, FareClass::Z then 2  
10     when FareClass::Y, FareClass::H then 2  
11     when FareClass::K, FareClass::M, FareClass::N,
```


No

No

```
8      when FareClass::A, FareClass::C, FareClass::D,  
9          FareClass::J, FareClass::R, FareClass::Z then 2  
10     when FareClass::Y, FareClass::H then 2  
11     when FareClass::K, FareClass::M, FareClass::N,
```


BNL

When the fare class
is A, C, D, J, R, or Z
then award 2 points

When the fare class is A, C,
D, J, R, or Z then award 2
points

When the fare class is A, C,
D, J, R, or Z then award 2
points

rule.gsub /the fare class is /, “

When A, C, D, J, R, or Z then
award 2 points

When A, C, D, J, R, or Z
then award 2 points

When A, C, D, J, R, or Z
then award 2 points

rule.gsub /^W/, 'w'

when A, C, D, J, R, or Z then
award 2 points

when A, C, D, J, R, or Z then
award 2 points

when A, C, D, J, R, or Z then
award 2 points

rule.gsub / or /, ‘ ’

when A, C, D, J, R, Z then
award 2 points

when A, C, D, J, R, Z then
award 2 points

when A, C, D, J, R, Z then
award 2 points

rule.gsub /award /, “

when A, C, D, J, R, Z then 2
points

when A, C, D, J, R, Z then 2
points

when A, C, D, J, R, Z then 2
points

rule.gsub / points/, “

when A, C, D, J, R, Z then 2

when A, C, D, J, R, Z then 2

when A, C, D, J, R, Z then 2

```
rule.gsub /([A-Z])/,  
  'FareClass::\1'
```

when FareClass::A,
FareClass::C, FareClass::D,
FareClass::J, FareClass::R,
FareClass::Z then 2

when FareClass::A,
FareClass::C, FareClass::D,
FareClass::J, FareClass::R,
FareClass::Z then 2

```
8  when FareClass::A, FareClass::C, FareClass::D,  
9      FareClass::J, FareClass::R, FareClass::Z then 2  
10 when FareClass::Y, FareClass::H then 2  
11 when FareClass::K, FareClass::M, FareClass::N,
```

Getting it to
execute


```
14 ▢ class Segment
15 ▢   def initialize(fare_class)
16     @fare_class = fare_class
17 ▢   end
18
19 ▢   def points
20     eval "
21 ▢       case @fare_class
22         #{BusinessLogic.rules}
23 ▢       end
24       "
25 ▢   end
26 ▢ end
```

BusinessLogic.rules returns the
rules from the DB

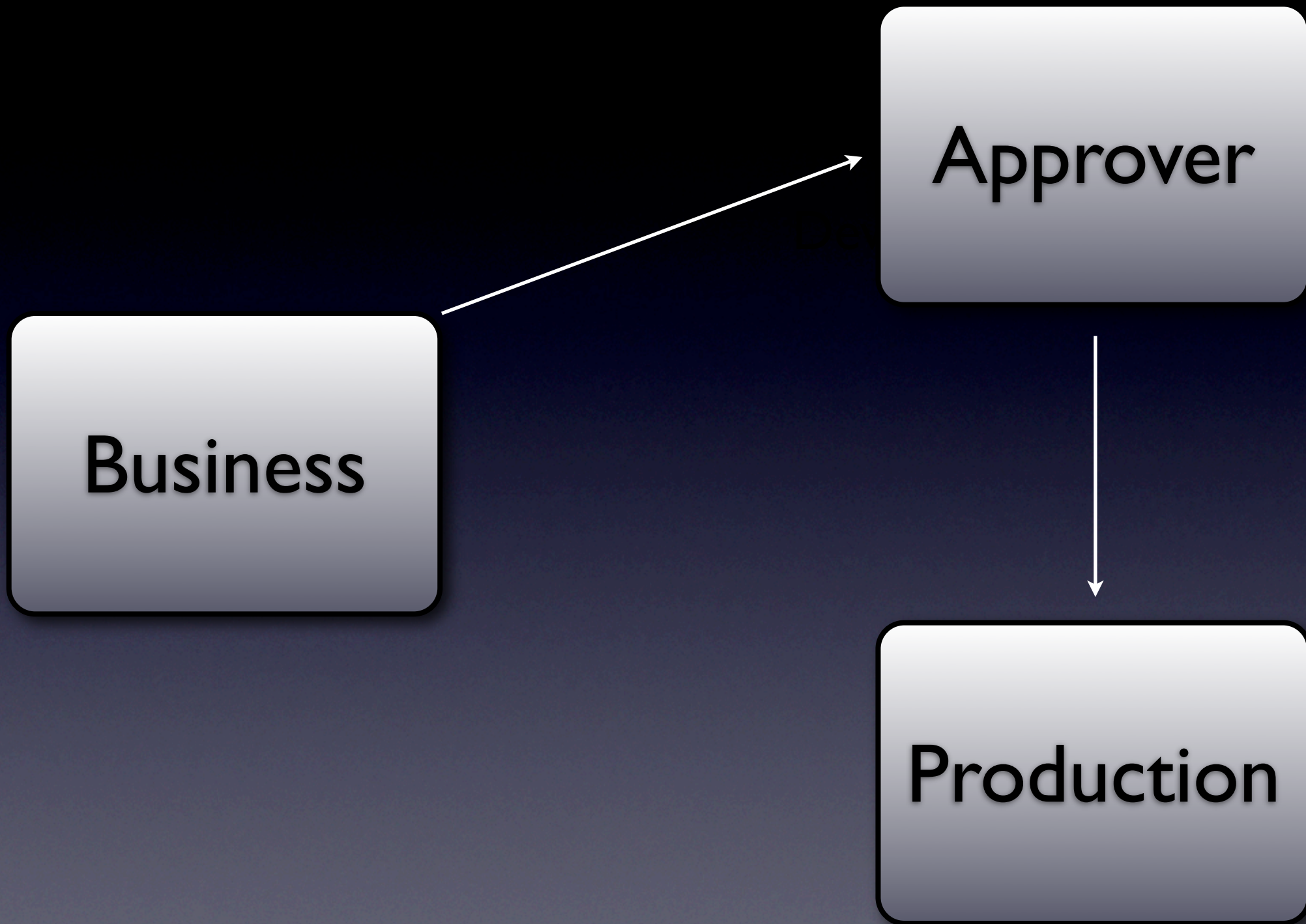
Developer

Business

Developer



Business



Deployment?

Programmers: Are
you out of a job?

Absolutely Not

Absolutely Not

- Language Workbench

Absolutely Not

- Language Workbench
- Syntax Checking

Absolutely Not

- Language Workbench
- Syntax Checking
- Test Environment

Absolutely Not

- Language Workbench
- Syntax Checking
- Test Environment
- Approval Workflow

Syntax Checking

Syntax Checking

When the fare class is A, C,
D, J, R, or Z then award 2
points

Syntax Checking

Syntax Checking

When the far

Did you mean 'fare class'?

Commercial Language Workbenches

Commercial Language Workbenches

MPS - JetBrains
Intentional

Another Example

Employee Compensation

Corporate Datastore

employee	deals_this_month	year_old_deals	gross_profit
jjones	7	2	1400000
jjohnson	12	1	2200000

Example Employees

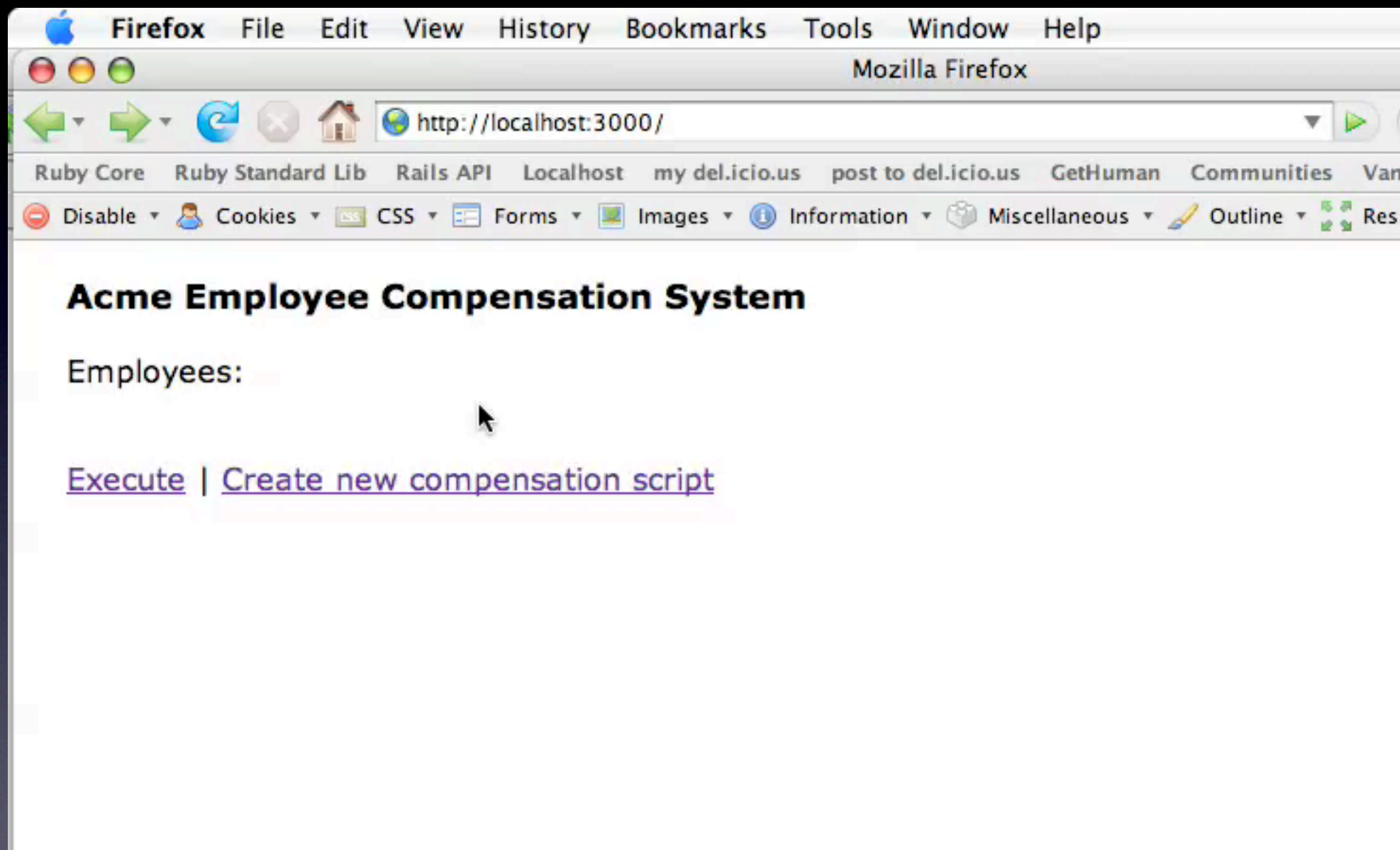
Compensation rules for Jackie Johnson

```
compensate $3000 for each deal closed in the past 30 days
compensate $800 for each active deal that closed more than 365 days ago
compensate 5% of gross profits if gross profits are greater than $1,000,000
compensate 5% of gross profits if gross profits are greater than $2,000,000
```

Compensation rules for John Jones

```
compensate $2500 for each deal closed in the past 30 days
compensate $500 for each active deal that closed more than 365 days ago
compensate 5% of gross profits if gross profits are greater than $1,000,000
compensate 3% of gross profits if gross profits are greater than $2,000,000
compensate 1% of gross profits if gross profits are greater than $3,000,000
```

Demo



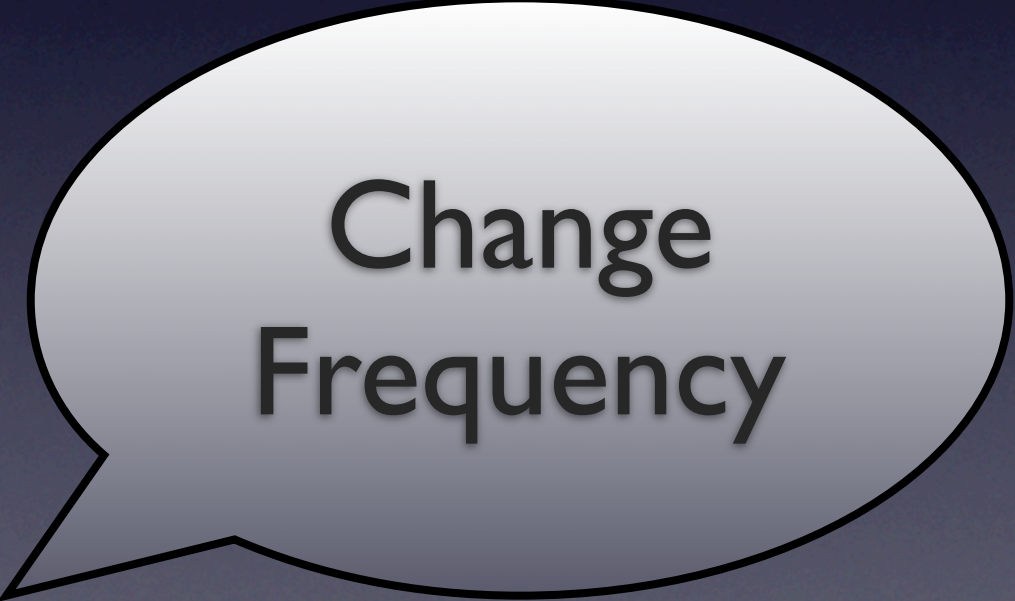
Bad Choice?



Author?



Author?



Change
Frequency

What deserves a
BNL?

Ruby?

BNL vs Rules Engines

More Information

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Questions

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