This is a partial view of the **Brute Force Correctness** slides.

For complete slides, visit https://bfc.bellenger.org/deck

Welcome!

James Bellenger

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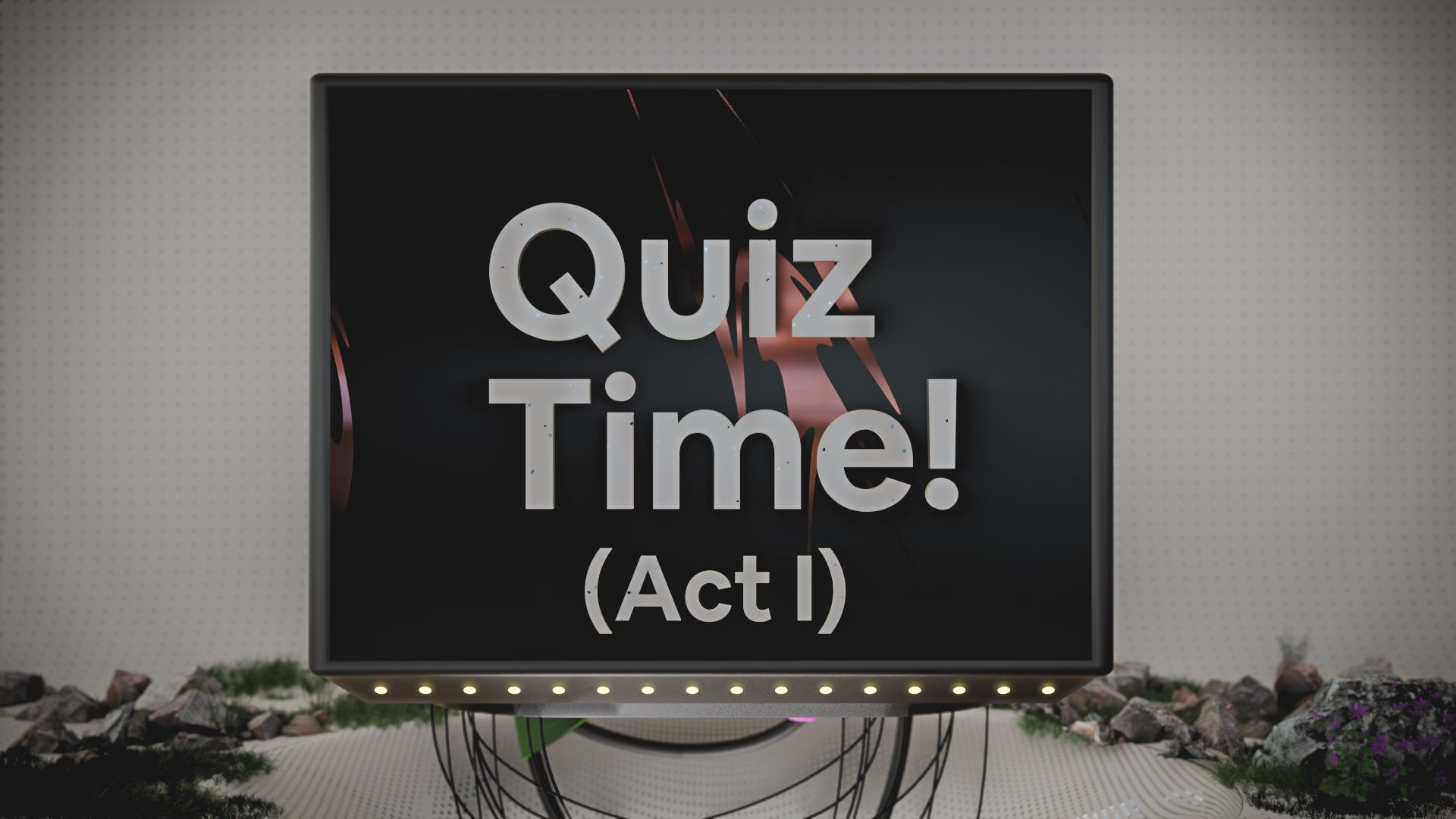
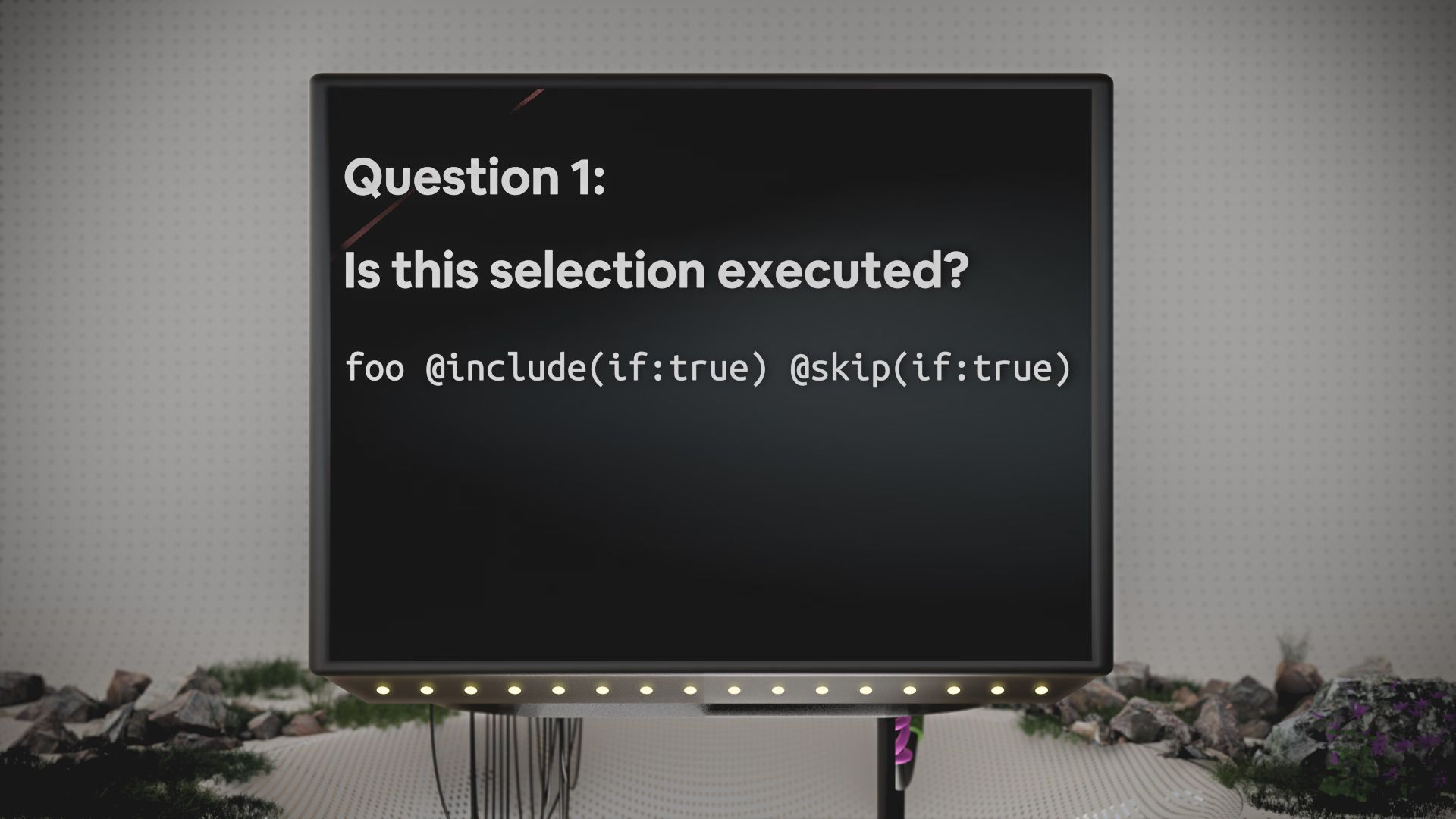
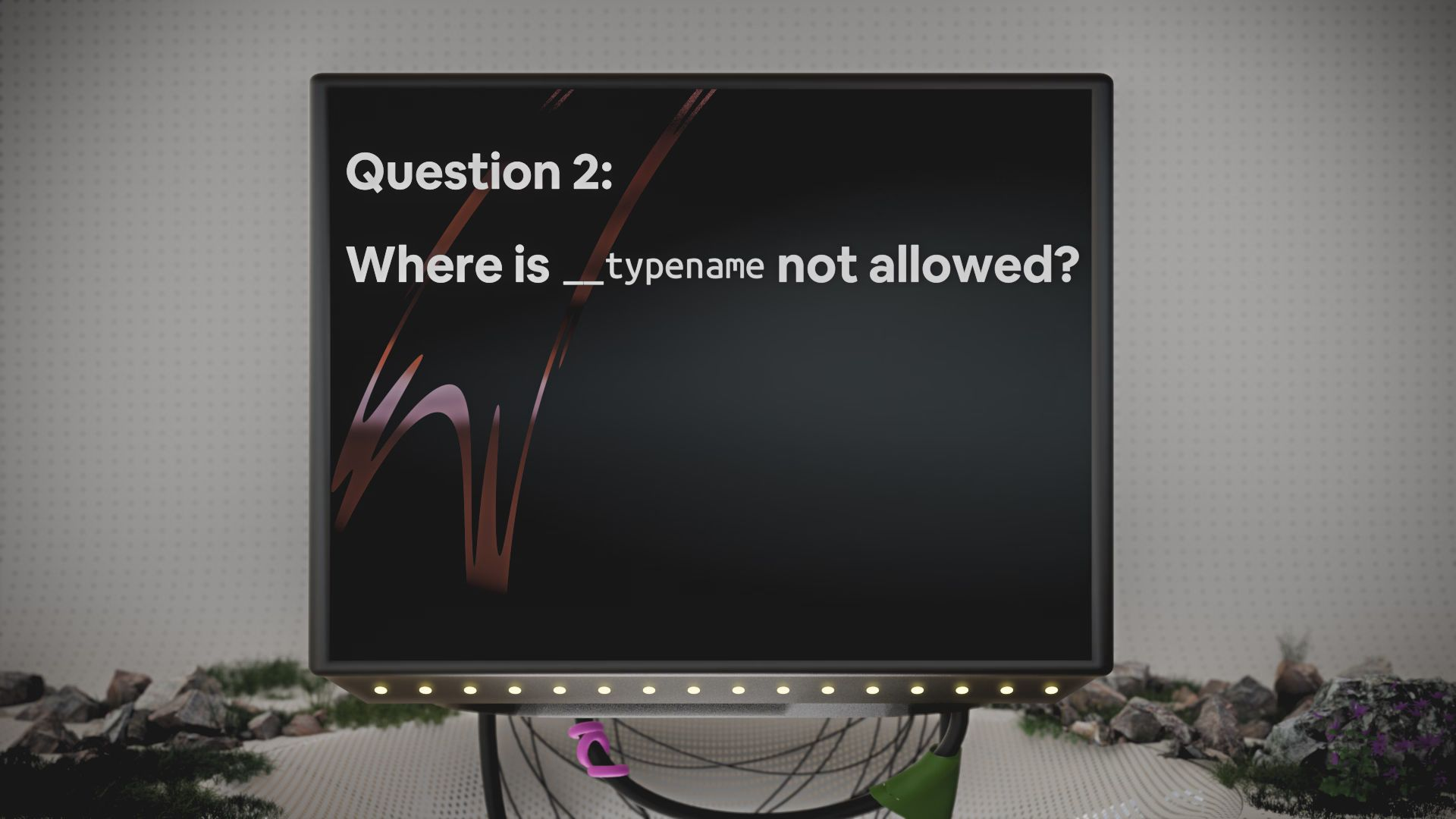
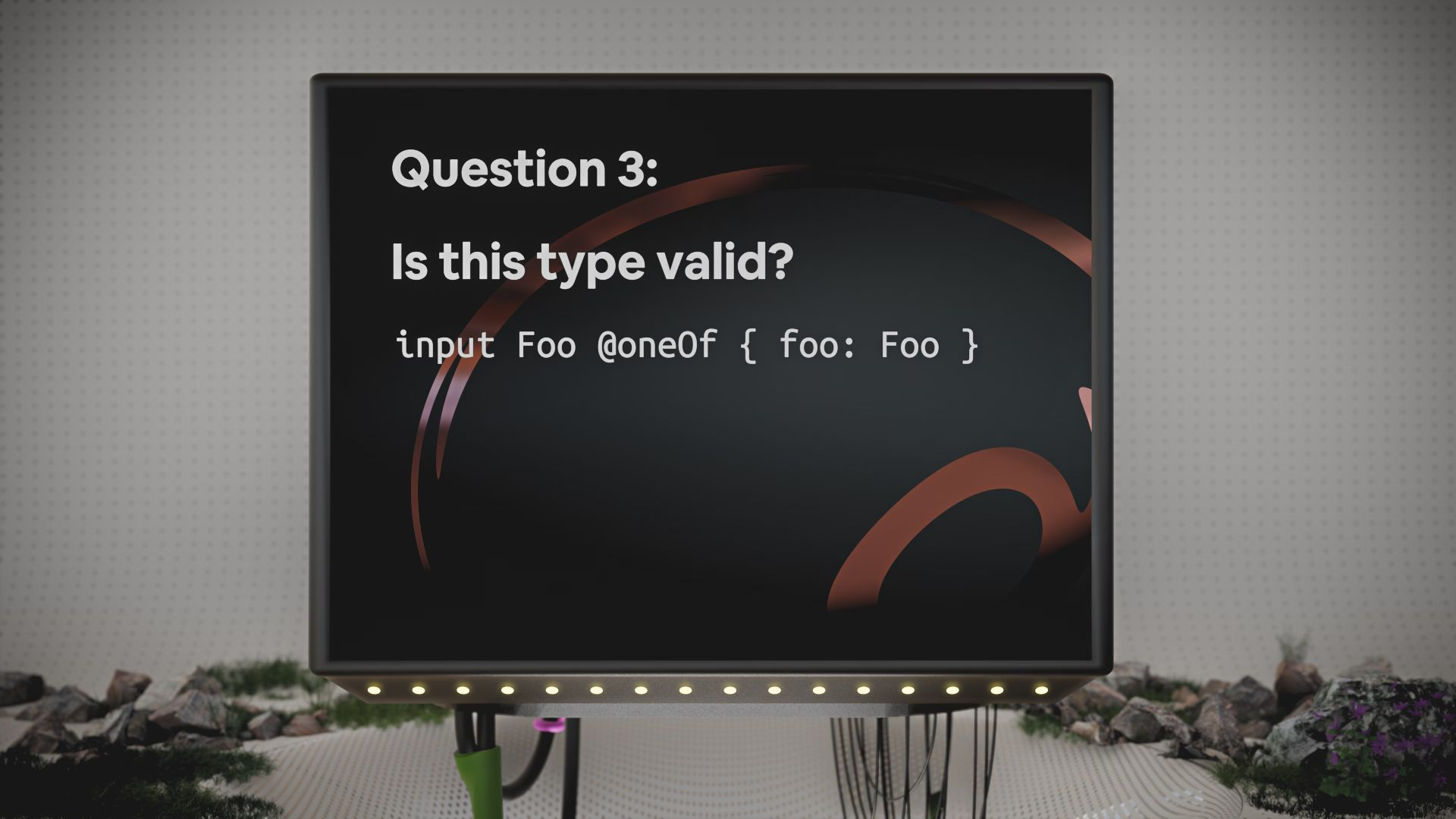
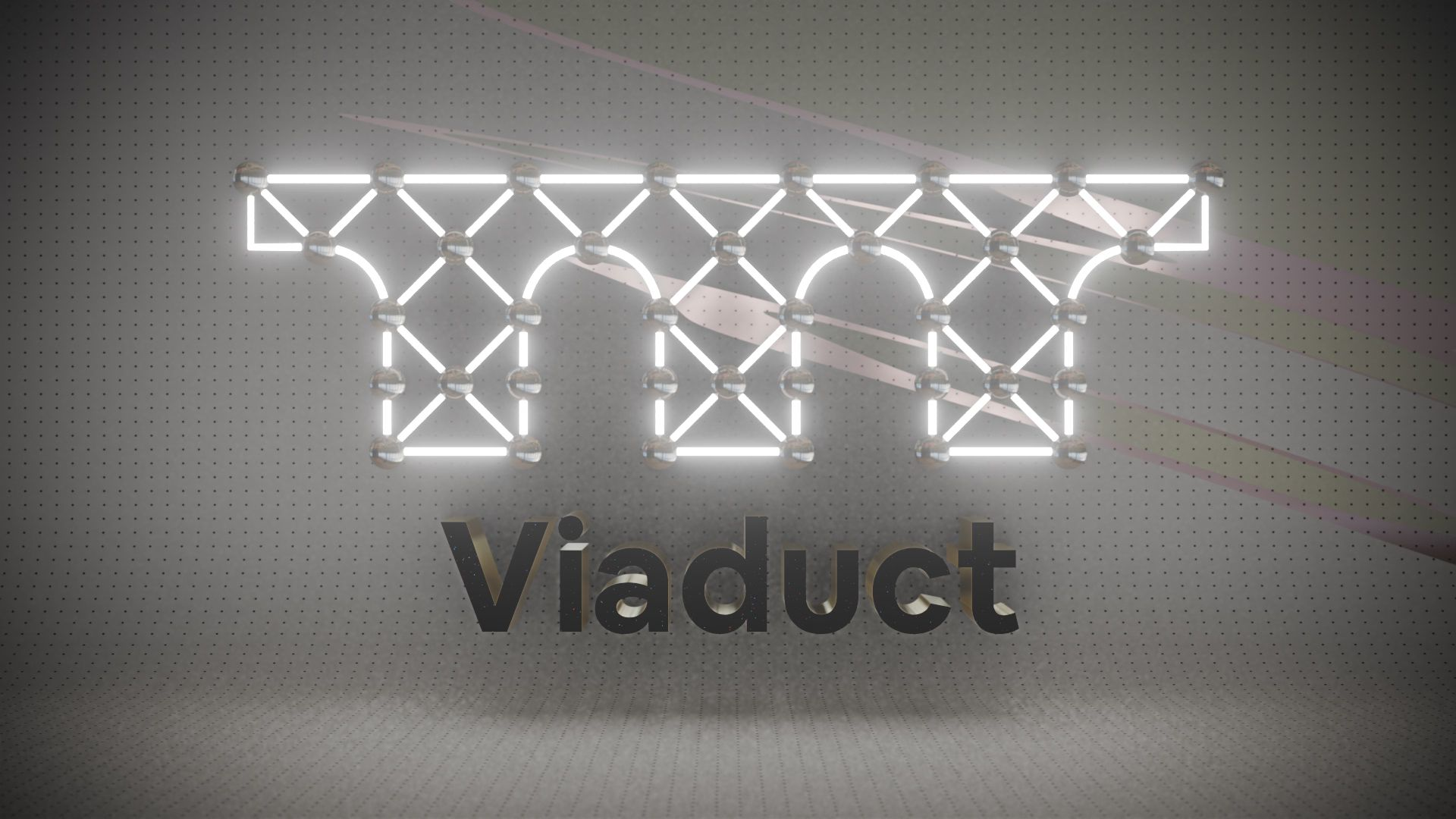

Quiz
Time!
(Act I)


Question 1:
Is this selection executed?
foo @include(if:true) @skip(if:true)


Question 2:
Where is __typename not allowed?


Question 3:
Is this type valid?
input Foo @oneOf { foo: Foo }


Brute
Force
Correctness


Viaduct


fuzzmaster
5000
Hot Fuzz

The Smiths

2011
CSMITH
400+ BUGS

SQLSmith / SQLancer
700 BUGS
SQL Fuzzing
CO-CHAMPIONS

EST. 2007
jsfunfuzz
CHAMPION
thousands smashed
undisputed heavyweight champion of the world

Generator

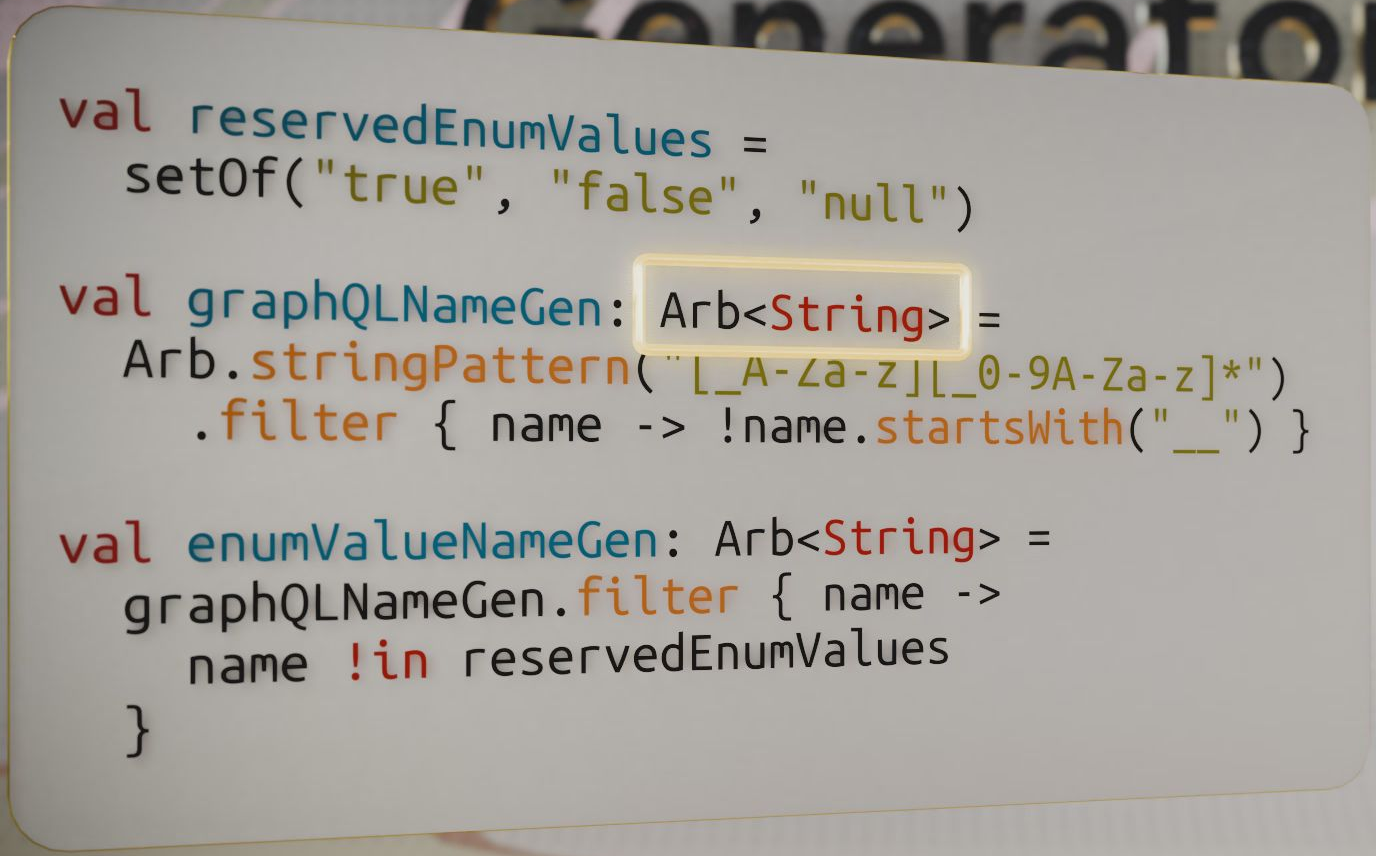
Act II

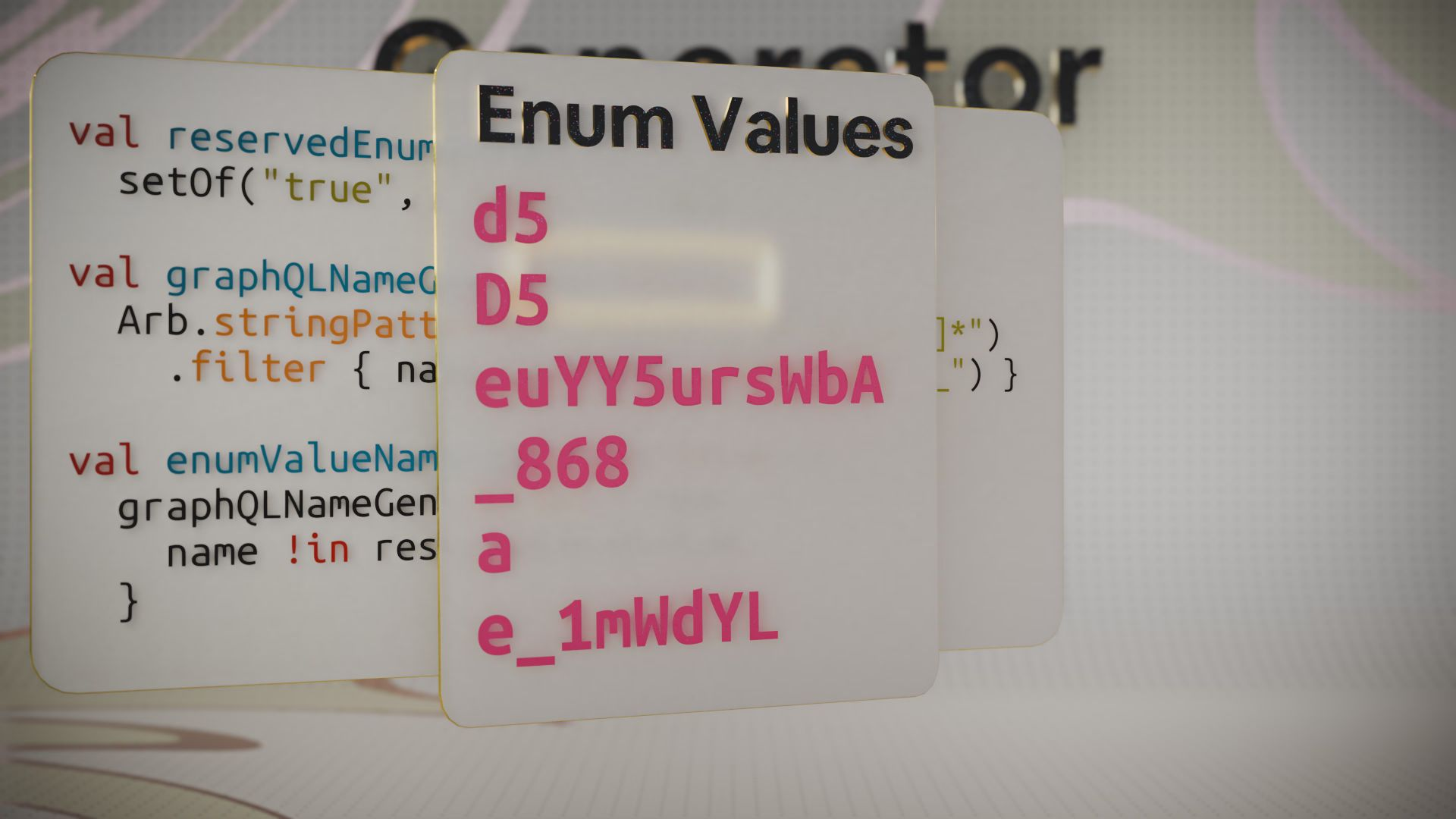
2.10.6 Enum Value

EnumValue :

Name but not `true` or `false` or `null`

Enum values are represented as unquoted names (e.g. `MOBILE_WEB`). It is recommended that Enum values be "all caps". Enum values are only used in contexts where the precise enumeration type is known. Therefore it is not necessary to supply an enumeration type name in the literal.


Generator
val reservedEnumValues =
setOf("true", "false", "null")
val graphQLNameGen: Arb<String> =
Arb.stringPattern("[_A-Za-z][_0-9A-Za-z]*")
.filter { name -> !name.startsWith("__") }
val enumValueNameGen: Arb<String> =
graphQLNameGen.filter { name ->
name !in reservedEnumValues
}


val reservedEnum
setOf("true",
val graphQLNameG
Arb.stringPatt
.filter { na
val enumValueNam
graphQLNameGen
name !in res
}
]*")
_") }
Enum Values
d5
D5
euYY5ursWbA
_868
_
a
e_1mWdYL

Generator

```
val enumTypeGen: Arb<GraphQLEnumType> =
  arbitrary {
    val name = graphQLNameGen.bind()
    val values = Arb.list(enumValueDefinitionGen, 1..10)
      .bind()
      .distinct()
    GraphQLEnumType.newEnum()
      .name("Enum_" + name)
      .values(values.toList())
      .build()
  }
```

Enum Type

```
enum Enum_q4 {
  d5
  D5
  euYY5ursWbA
  _868
  a
  e_1mWdYL
}
```

LovecraphQL

```
query (
  $hjm8: Input_a,
  $n: Boolean! = false @Directive_c(mB: null)
) {
  ... @skip(if: $n) {
    ... on Union_mgmJSEl9 {
      ... on Union_RM5lyfWUvk {
        ...Fragment_QWcrMnSgP @include(if: $n)
      }
    }
  }
}

fragment Fragment_QWcrMnSgP on Union_mgmJSEl9 @Directive_c(mB: $hjm8) {
  __typename
}
```

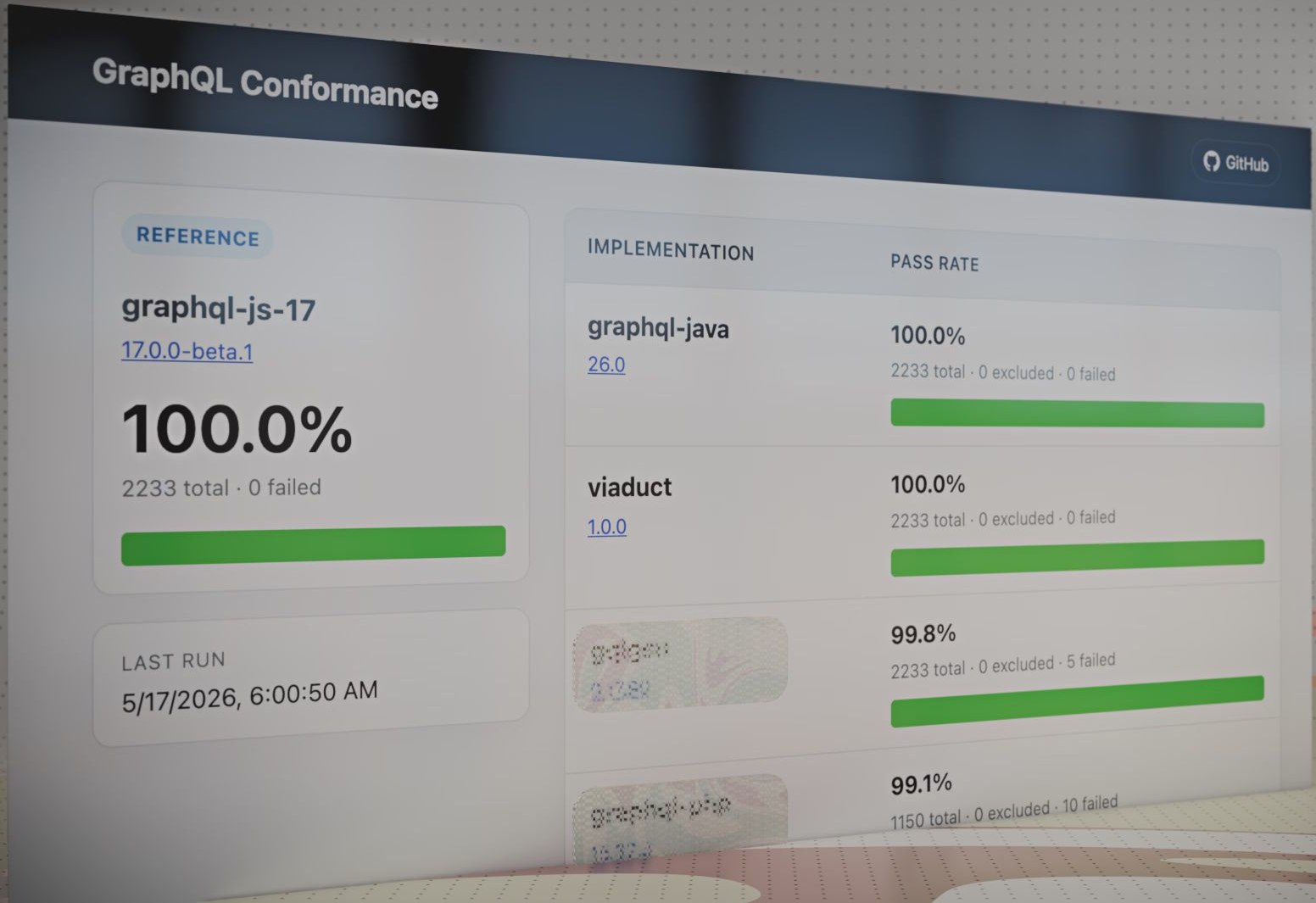
arb arb arb

```
@Test
fun `arb arb arb`() {
   // for arbitrary schemas,
   // with arbitrary wiring
   // execute arbitrary requests

   Arb.graphQLSchema().checkAll { schema ->
      Conformer(schema) {
         Arb.viaductExecutionInput(schema).checkAll()f
      }
   }
}
```

One More Thing


Confo nce++
fuzzmaster
5001
JS
JS


GraphQL Conformance
GitHub
REFERENCE
graphql-js-17
17.0.0-beta.1
100.0%
2233 total · 0 failed
LAST RUN
5/17/2026, 6:00:50 AM
IMPLEMENTATION
PASS RATE
graphql-java
26.0
100.0%
2233 total · 0 excluded · 0 failed
viaduct
1.0.0
100.0%
2233 total · 0 excluded · 0 failed
99.8%
2233 total · 0 excluded · 5 failed
99.1%
1150 total · 0 excluded · 10 failed

Failing Tests

5 failures in this run.

TEST

1a83f1c3/d0cee1b5/69eedd1b

DETAILS

EXPECTED

```
{
  "data": {
    "__typename": "Object_GjrbD",
    "zOSZRbzK": "Object_GjrbD",
    "taKQojG": "Object_GjrbD",

    "xe16FkAgSh": {
      "__typename": "Object_p"
    }
  }
}
```

ACTUAL

```
{
  "data": null,
  "errors": [
    {
      "message": "Variable \"$qQSvVphTF\" is never used.",
      "locations": [
        {
          "line": 1,
          "column": 8
        }
      ],
      "extensions": {
        "code": "GRAPHQL_VALIDATION_FAILED"
      }
    }
  ]
}
```

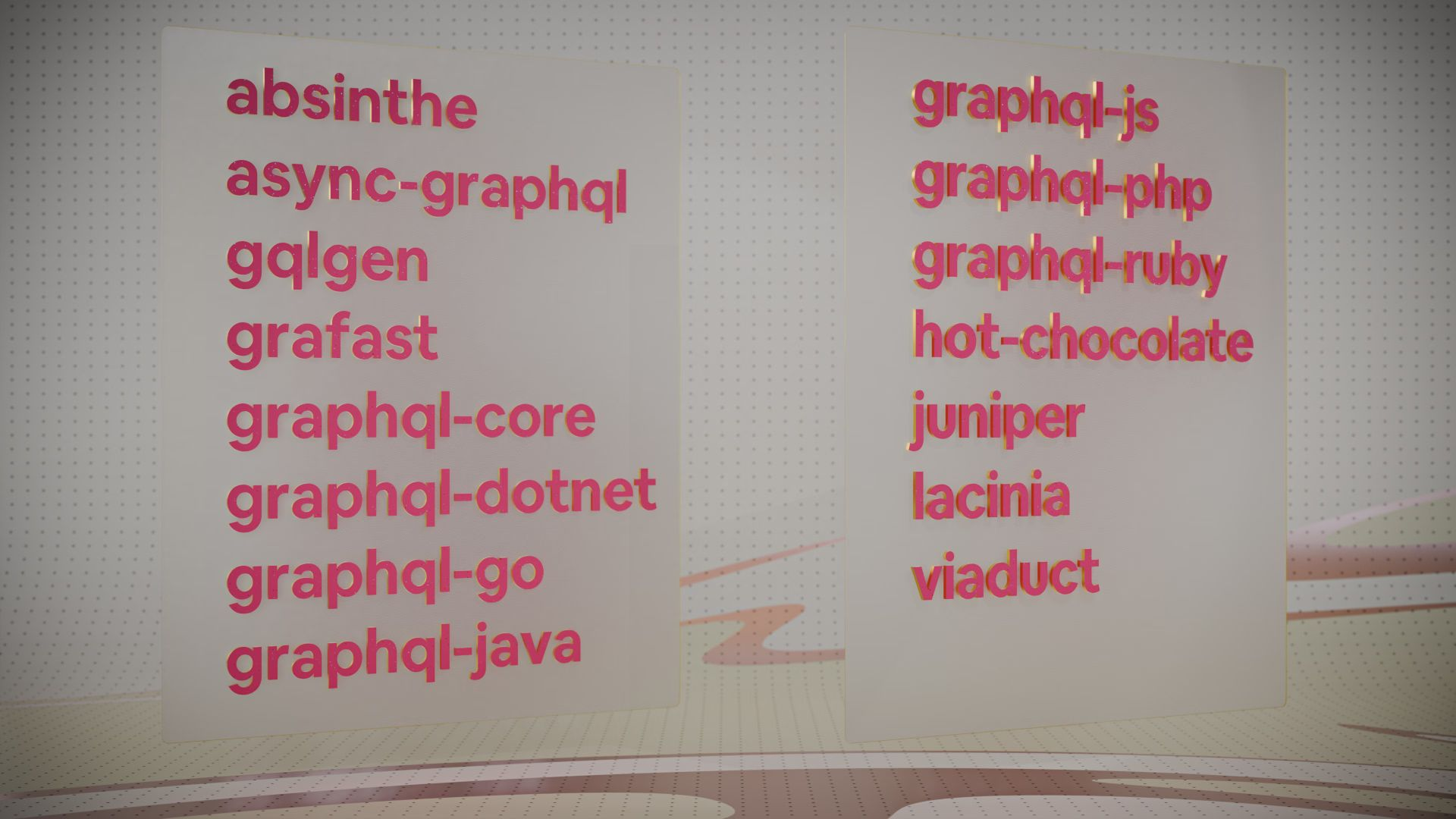
TEST

1a83f1c3/d0cee1b5/7f8046f0

DETAILS

EXPECTED

ACTUAL


absinthe
async-graphql
gqlgen
grafast
graphql-core
graphql-dotnet
graphql-go
graphql-java
graphql-js
graphql-php
graphql-ruby
hot-chocolate
juniper
lacinia
viaduct

Indication Of Value

fix incremental

Merged

yaacovCR

graphql:

2 weeks a

default value fix

Open

jbellenger w

graphql-go

default variable

Merged

LegNeato

graphql-r

2 weeks ag

cycles

mits into

llenger:jbellenger/di…

ive variable

nit into

r:fix-fragment-…

uments with

to

jbellenger:fix/directive…

You found a bug in Grafast! #4

Closed

benjie opened on Apr 10 — Contributor

Gra*fast* wasn't applying the `@skip` / `@include` directives to fragment spreads in abstract positions (now resolved).

This is a strong indication of the value of this project 🎉

Incidentally the list of engines in the README doesn't include Gra*fast*.

Create sub-issue

🎉 1


100%
Conformance


18%
Conformance

Fuzzer's Delight

1. Write your own!
2. viaduct-arbitrary
3. graphql-conformance

Links & Colophon

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