



Dude where's my API?

A short introduction to GraphQL
and its applications for DDI.

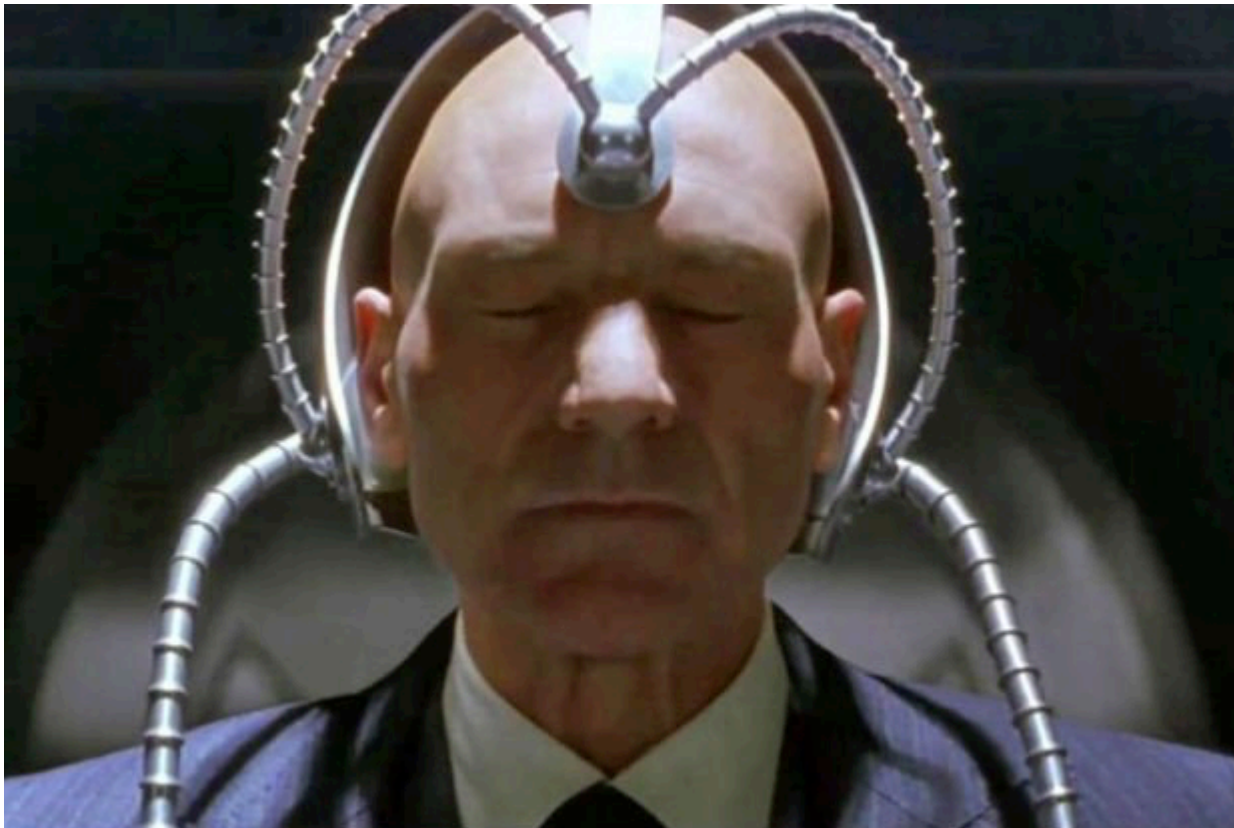
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Designing APIs is hard



~~Designing~~ *Using* APIs is hard



~~Designing Using~~ *APIs is hard*



Example: Designing a DDI API

- `api/v1/represented_variable/`
- `api/v1/conceptual_variable/`
- `api/v1/question_item/`
- `api/v1/dataset/`

Example: Using a DDI API

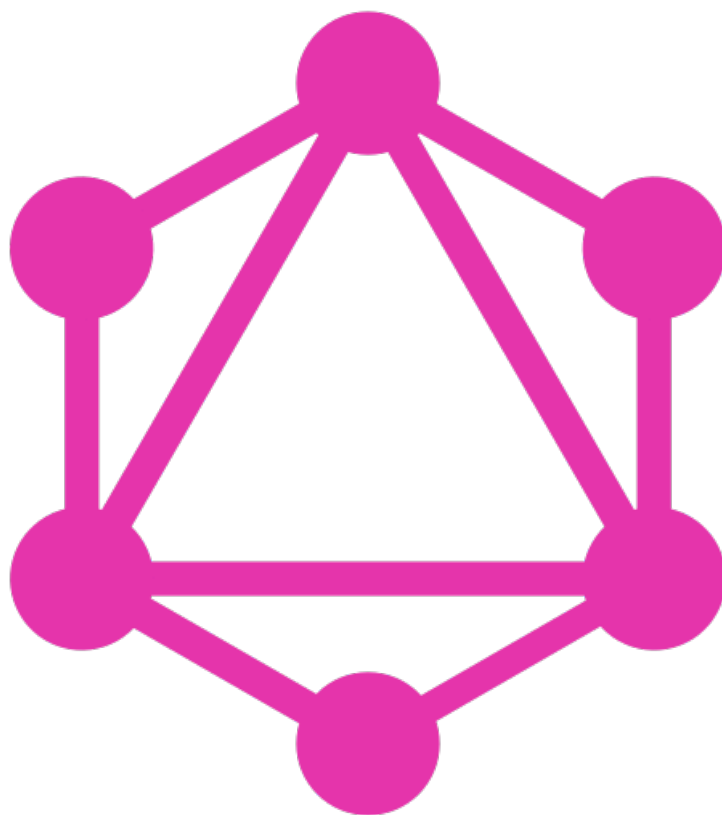
As a consumer, I want to get a list of represented variables, and the questions associated with them

- `api/v1/represented_variable/?id=R1`
`api/v1/question_item/?id=Q1`
- `api/v2/question_item/?rep_var_id=R1`
- `api/v3/represented_variable/?id=R1&with_q=1`

Example: Using a DDI API

As a consumer, I want to get a dataset, and associated represented variables, and the questions associated with them

- `api/v1/dataset/?id=D1`
`api/v1/represented_variable/?id=R1`
`api/v1/question_item/?id=Q1`
- `api/v2/represented_variable/?data_id=R1...Rn`
`api/v2/question_item/?rep_var_id=R1...Rn`
- `api/v3/dataset/?id=D1&with_rep=1&with_q=1`



Example: Using DDI & GraphQL

As a consumer, I want to get a dataset, and associated represented variables, and the questions associated with them

```
{ DDI (type: "dataset") {  
  name  
  representedVariable {  
    name {  
      questionItem {  
        name  
      }  
    }  
  }  
}
```

```
"dataset": [{  
  "name" : "A dataset",  
  "representedVariable": [{  
    "name": "My Var",  
    "questionItem": [{  
      "name": "My Q",  
    }], {  
  }  
}
```

And so on

Example: Using DDI & GraphQL

As a consumer, I want to get a dataset, and associated represented variables, and the questions associated with them... and *paginate* it.

```
{ DDI (type: "dataset") {  
  pageInfo { ... }  
  edges {  
    cursor { ... }  
    nodes {  
      name  
      representedVariable {  
        // as prior slide  
      }  
    }  
  }  
}
```

Example: Using DDI & GraphQL

As a server, I want to write the schema for an endpoint so a user can query my metadata using GraphQL.

```
type RepresentedVariable {  
  label: String  
  QuestionItems: [QuestionItem]  
}
```

Example: Using DDI & GraphQL

As a server, I want to write an endpoint so a user can query my metadata using GraphQL... and add a new field

```
type RepresentedVariable {  
  label: String  
  description: String  
  QuestionItems: [QuestionItem]  
}
```

Example: Using DDI & GraphQL

As a consumer,
I want to get a dataset as I described before,
and associated represented variables,
and the questions associated with them...

from the newly updated endpoint.

What do I do now?

Nothing!

GraphiQL



Prettify

< AristotleQuery

allMetadata



```

1 {
2   allMetadata (type: "datasetSpecification") {
3     edges {
4       node {
5         name
6         datasetSpecification {
7           dssdeinclusionSet {
8             dataElement {
9               name
10              valueDomain {
11                name
12              }
13            }
14          }
15        }
16      }
17    }
18  }
19 }

```

```

{
  "data": {
    "allMetadata": {
      "edges": [
        {
          "node": {
            "name": "My dataset",
            "datasetSpecification": {
              "dssdeinclusionSet": [
                {
                  "dataElement": {
                    "name": "Person--Weight, Kilograms",
                    "valueDomain": {
                      "name": "Kilograms"
                    }
                  }
                }
              ]
            }
          },
          {
            "dataElement": {
              "name": "Types of computer",
              "valueDomain": {
                "name": "Computer type"
              }
            }
          }
        ]
      },
      {
        "node": {
          "name": "other dataset",
          "datasetSpecification": {
            "dssdeinclusionSet": [
              {
                "dataElement": {
                  "name": "Person--Weight, Kilograms",
                  "valueDomain": {
                    "name": "Kilograms"
                  }
                }
              }
            ]
          },
          {
            "dataElement": {
              "name": "Types of computer"
            }
          }
        ]
      }
    ]
  }
}

```

No Description

TYPE

ConceptTypeConnection

ARGUMENTS

before: String

after: String

first: Int

last: Int

uuid: String

created: String

created_Gte: String

created_Lte: String

type: String

Filter by metadata type

name_contains: String

supersededBy: String

Superseded by

identifier: String

Identifier

QUERY VARIABLES

1 null

Who is using GraphQL?



ARISTOTLE

metadata registry

How can I do GraphQL?

Language	GitHub Project
Drupal	Youshido/GraphQL
Java	graphql-java/graphql-java
.Net	graphql-dotnet/graphql-dotnet
NodeJS	graphql/graphql-js
Python	graphql-python/graphene-django

Where can I learn more?

- <http://graphql.org/>
- <https://github.com/chentsulin/awesome-graphql>
- <https://developer.github.com/v4/>