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# Writing GraphQL API's with .NET 5

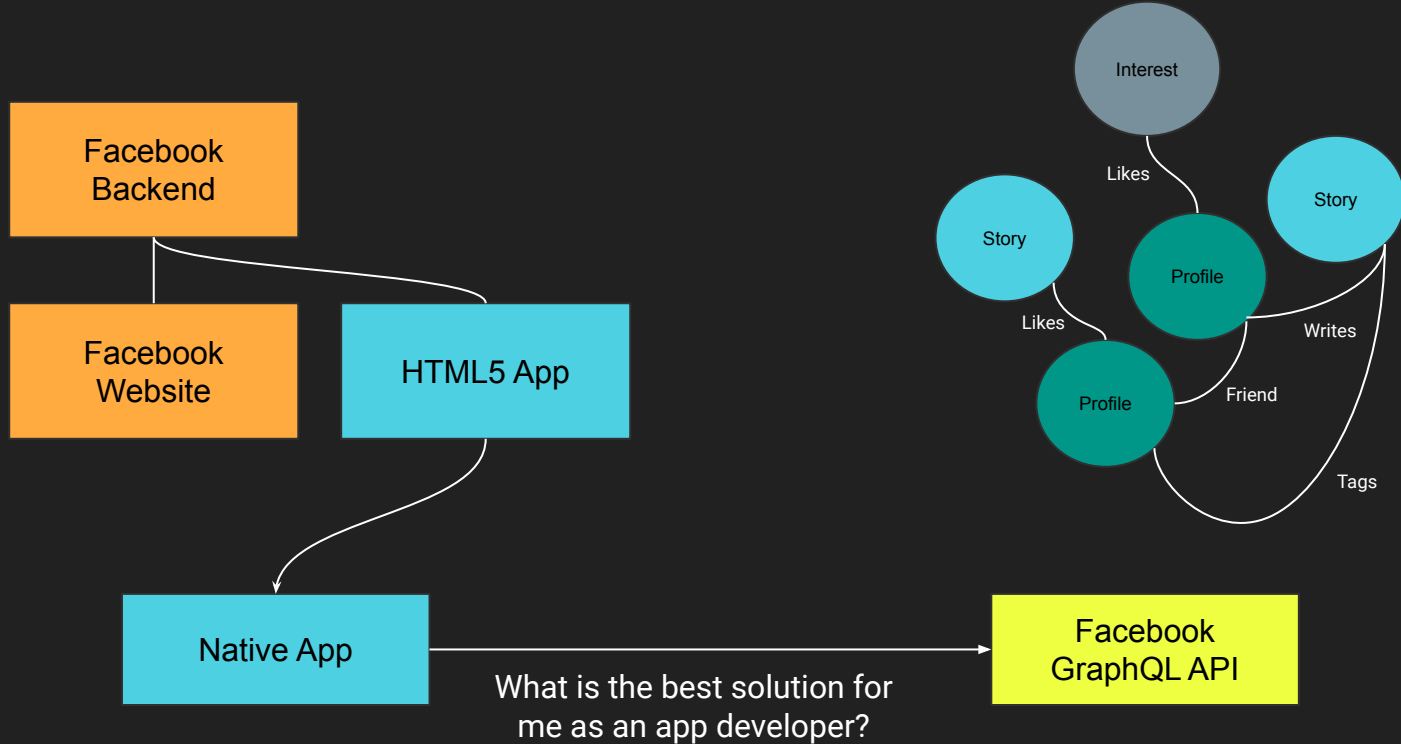
Erik Svensson, .NET Consultant at WebStep

WEBSTEP

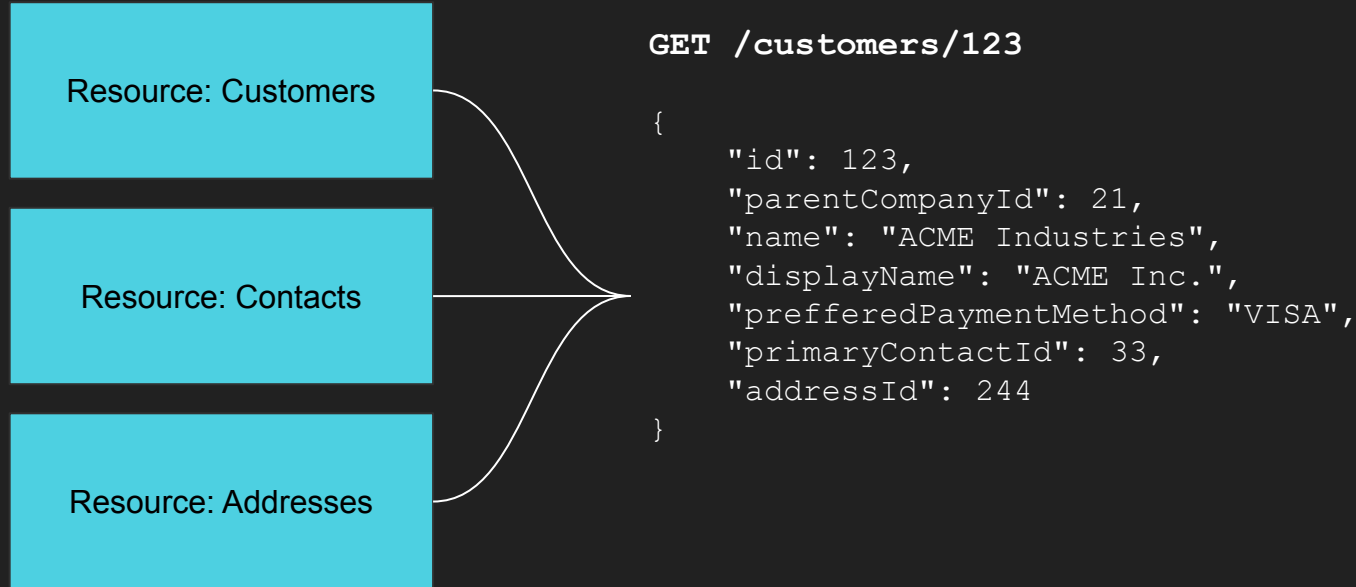
# Agenda

- GraphQL Backstory
- GraphQL vs REST
- GraphQL Syntax
- Demo: GraphQL in .NET / Playground
- Discussion / Questions

# GraphQL Backstory



# GraphQL vs REST



# GraphQL vs REST: Multiple Round Trips

## Multiple API Calls to Render the Page

```
GET /customers/123 -> Customer fields
GET /customers/21  -> Parent company fields
GET /contacts/33   -> Contact fields
GET /addresses/244 -> Address fields
```

## Create App Specific Endpoint?

```
GET /customer-page/123
```

### My Business App

Customers > **ACME Inc.**

Parent Company: **ABC Inc.**

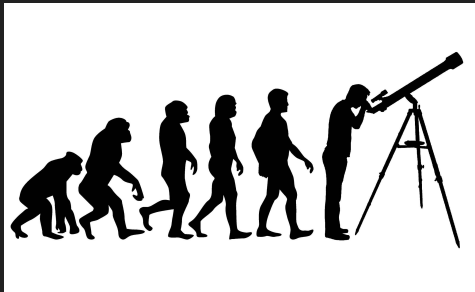
Contact: **Bob Smith**

Located at: 56 7th St, NY

# GraphQL vs REST: Overfetching

## The Product Keeps Growing!

- Customer Requirements
- Architectural Changes
- Legislative Requirements
- New Developers
- New Platforms



GET /customers/123

```
{
  "id": 123,
  "parentCompanyId": 21,
  "name": "ACME Industries",
  "legalName": "ACME Industries Inc.",
  "displayName": "ACME Inc.",
  "preferredPaymentMethod": "VISA",
  "primaryContactId": 33,
  "addressId": 244
  "phoneNumber": "1 (202) 469 0126",
  "emergencyContactId": 35,
  "theThingThatSomeonePayedFor": 55.06,
  "nameInSpanish": "La ACME Industrias",
  ...
}
```

# GraphQL vs REST: Documentation and Versioning

What do I find here? `GET /ogn-signoffs/23/templates`

What does this field contain? `"migratedCustomer": 33`

What endpoints do we even have?

(Swagger and similar options exist)

# GraphQL Syntax

## My Business App

Customers > **ACME Inc.**

Parent Company: **ABC Inc.**

Contact: **Bob Smith**

Located at: 56 7th St, NY

### REST

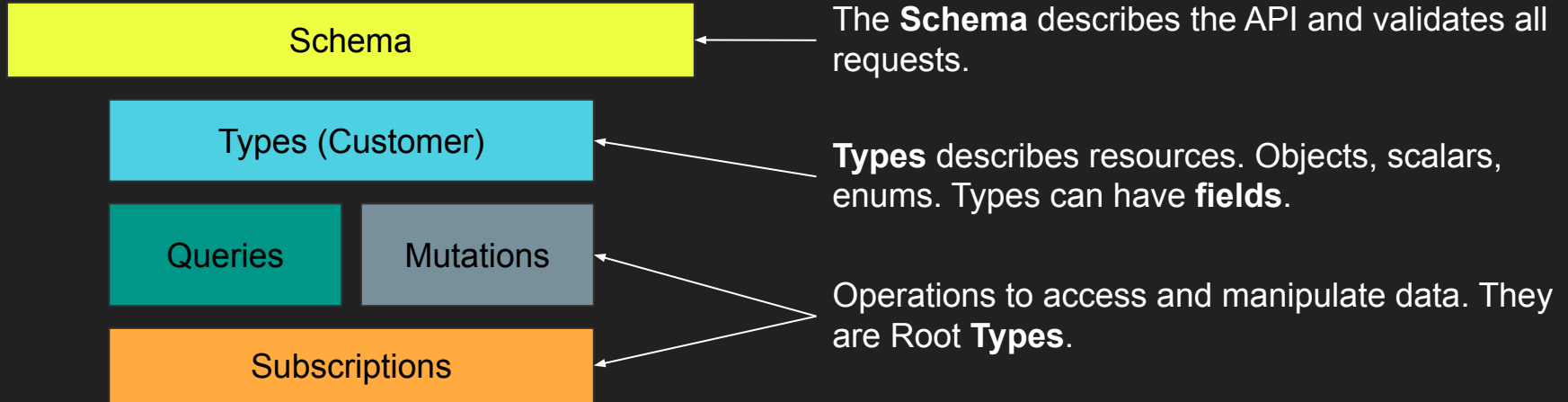
GET /customers/123

### GraphQL

```
getCustomer(id: 123) {  
  name  
  parentCompany {  
    name  
  }  
  contact {  
    name  
  }  
  address {  
    street  
  }  
}
```



# GraphQL Syntax



# GraphQL Syntax

## GraphQL Query

```
{  
  getCustomer(id: 34) {  
    name  
  }  
}
```

POST /graphql -application/json



```
{  
  "query": "{ getCustomer(id: 34) { name } }"  
}
```



## Response

```
{  
  "data": { ... },  
  "errors": [ ... ]  
}
```

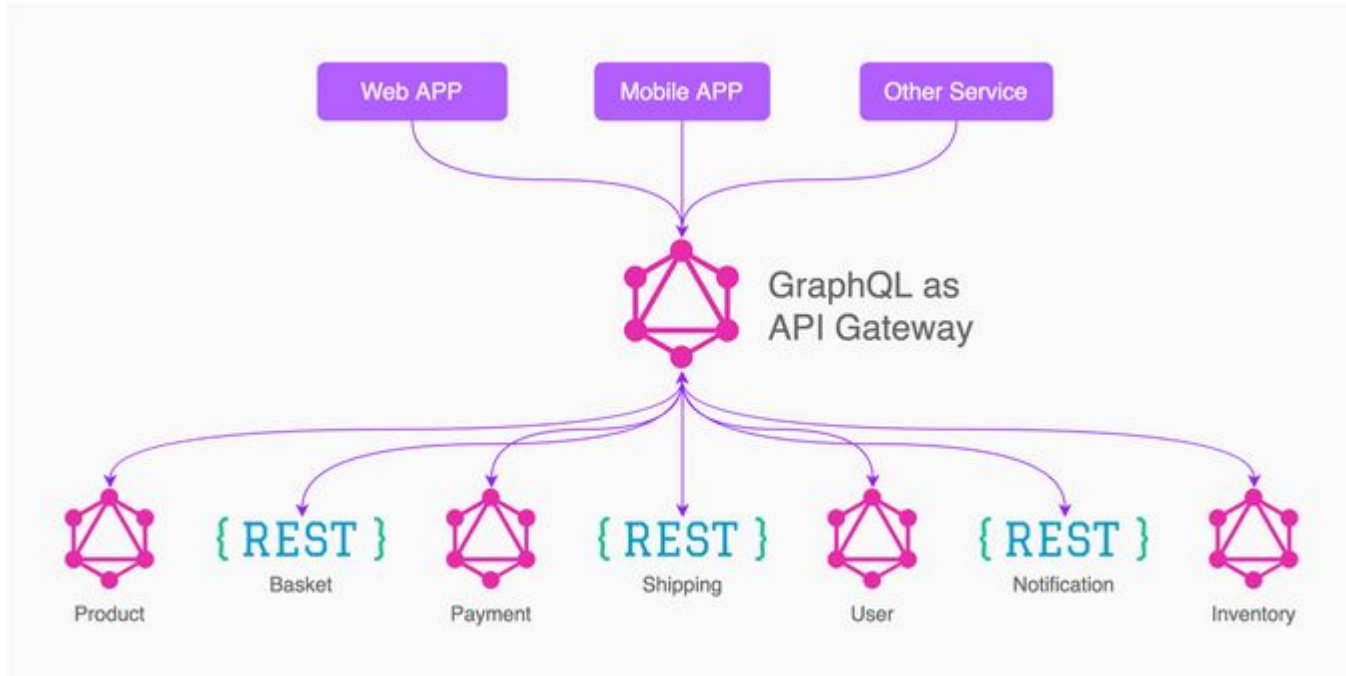
# Demo Time

- Using the GraphQL Playground
- .NET 5 implementation
- Queries / Mutations / Subscriptions

[https://github.com/svan-jansson/graphql\\_demo](https://github.com/svan-jansson/graphql_demo)

# Discussion

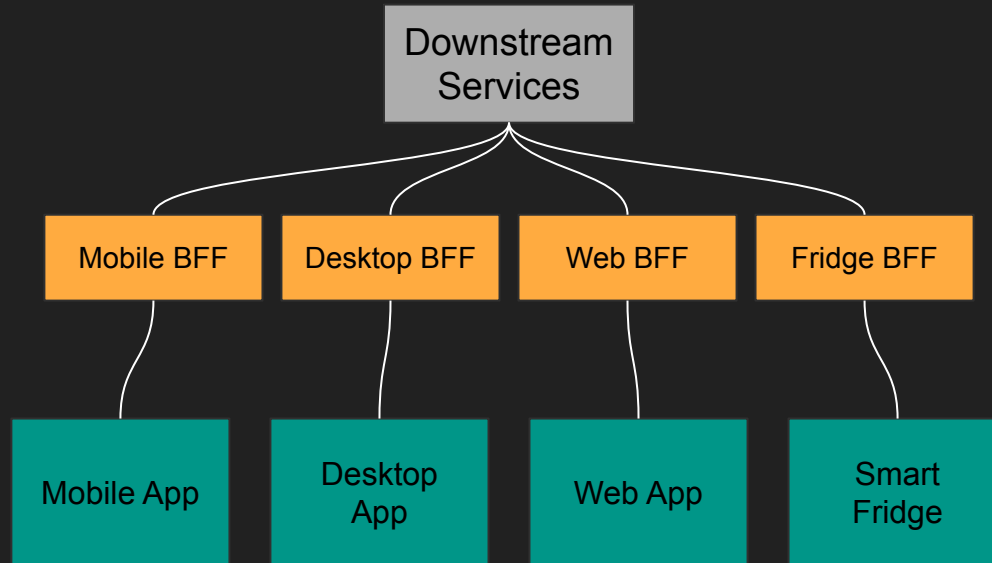
- GraphQL and Microservices / API Gateway / Migration Strategies
- Federal University of Minas Gerais, Brazil
- What is *your* opinion on GraphQL?



[opensource.com](https://opensource.com)

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# GraphQL vs REST: Backend-for-Frontend (BFF)





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