

# Intro to GraphQL

The Future Language of the Web



Ian Tracey



David Bresnick

## Tom



":-)"

Male  
32 years old  
Santa Monica,  
CALIFORNIA  
United States

Last Login:  
12/11/2007

Mood: busy 😊  
View My: [Pics](#) | [Videos](#)

### Contacting Tom

- |                                 |                                   |
|---------------------------------|-----------------------------------|
| <a href="#">Send Message</a>    | <a href="#">Forward to Friend</a> |
| <a href="#">Add to Friends</a>  | <a href="#">Add to Favorites</a>  |
| <a href="#">Instant Message</a> | <a href="#">Block User</a>        |
| <a href="#">Add to Group</a>    | <a href="#">Rank User</a>         |

MySpace URL:  
<http://www.myspace.com/tom>



### Tom's Interests

General	Internet, Movies, Reading, Karaoke, Language, Culture, History of Communism, Philosophy, Singing/Writing Music, Running, Finding New Food, Hiking, Travel, Building alternate communities
Music	<b>Bands:</b> Beatles, Superdrag, Jackson 5, Weezer, Sex Pistols, The Carpenters, Vain, Radiohead, Teenage Fanclub,

## Tom testing out the new status

### Tom's Latest Blog Entry [[Subscribe to this Blog](#)]

myspace updates! ([view more](#))

new homepage look ([view more](#))

what's going on with friend counts? ([view more](#))

extended network ([view more](#))

am i online? ([view more](#))

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### Tom's Blurbs

#### About me:

I'm Tom and I'm here to help you. Send me a message if you're confused by anything. **Before asking me a question, please check the FAQ to see if your question has already been answered.**

I may have been on your friend list when you signed up. If you don't want me to be, click "Edit Friends" and remove me!

**Also, feel free to tell me what features you want to see on MySpace and if I think it's cool, we'll do it!**

#### Who I'd like to meet:

I'd like to meet people who educate, inspire or entertain me... I have a few close friends I've known all my life. I'd like to make more.

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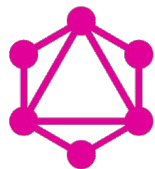
Frontend development has gotten easier  
But expectations are much higher

Modern front ends = **data fetching** + **state**

API design is being challenged



2015



GraphQL





So, what the heck is GraphQL?

# What GraphQL is **not**

A graph database

# What GraphQL is **not**

A graph database

A silver bullet for your crappy app

# What GraphQL is **not**

A graph database

A silver bullet for your crappy app

A frontend framework

# What GraphQL is **not**

A graph database

A silver bullet for your crappy app

A frontend framework

A programming language



“GraphQL is a **declarative query language** for your APIs and a **runtime** for fulfilling those queries with your existing data”





# In a REST world

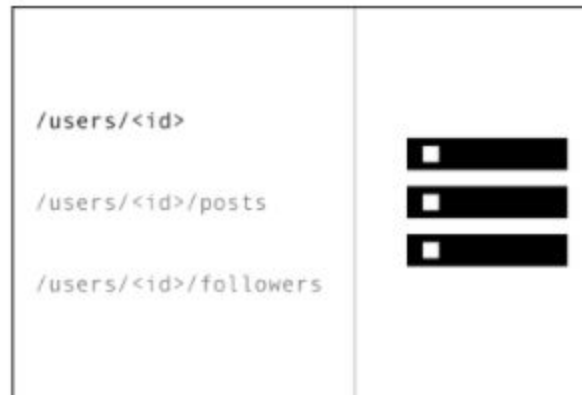
```
/users/<id>
```

```
/users/<id>/posts
```

```
/users/<id>/followers
```

# In a REST world

1



# In a REST world

2



HTTP GET

```
{  
  "posts": [{  
    "id": "ncwon3ce89hs"  
    "title": "Learn GraphQL today",  
    "content": "Lorem ipsum ...",  
    "comments": [ ... ],  
  }]  
}
```

/users/<id>

/users/<id>/posts

/users/<id>/followers

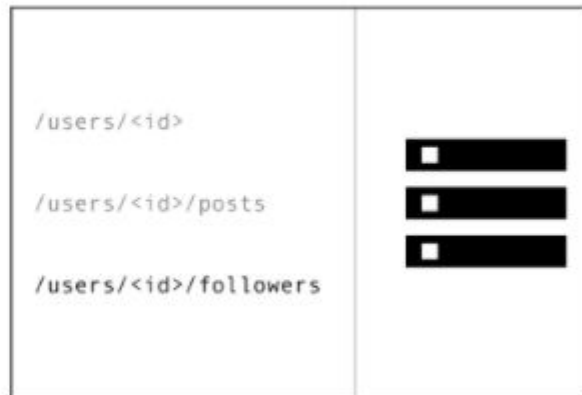


# In a REST world

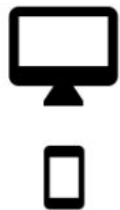
3



```
{  
  "followers": [{  
    "id": "leo83h2dojsu"  
    "name": "John",  
    "address": { ... },  
    "birthday": "July 26, 1982"  
  },  
  ...]  
}
```



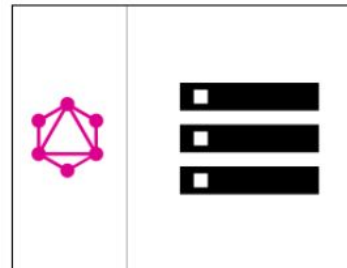
# In a GraphQL world



```
query {  
  User(id: "er3tg439frjw") {  
    name  
    posts {  
      title  
    }  
    followers(last: 3) {  
      name  
    }  
  }  
}
```

HTTP POST

```
{  
  "data": {  
    "User": {  
      "name": "Mary",  
      "posts": [  
        { title: "Learn GraphQL today" }  
      ],  
      "followers": [  
        { name: "John" },  
        { name: "Alice" },  
        { name: "Sarah" },  
      ]  
    }  
  }  
}
```





“Think in graphs,  
not endpoints.”

**Lee Byron**, GraphQL Co-inventor

# GraphQL Core Concepts



# Schema Definition Language

```
type Person {  
  name: String!  
  age: Int!  
  posts: [Post!]!  
}
```

```
type Post {  
  title: String!  
  author: Person!  
}
```

# Queries

```
{  
  allPersons {  
    name  
  }  
}
```

```
{  
  "allPersons": [  
    { "name": "Johnny" },  
    { "name": "Sarah" },  
    { "name": "Alice" }  
  ]  
}
```

# Mutations

Playground

Data

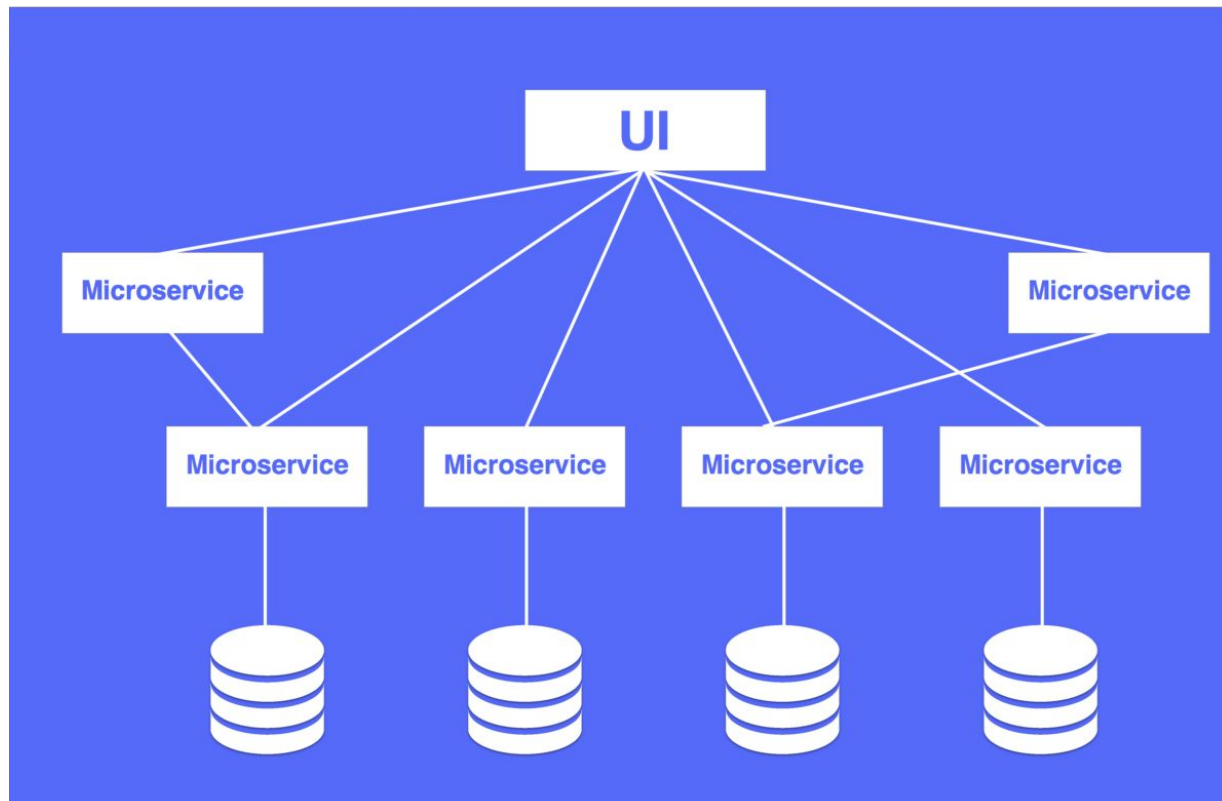
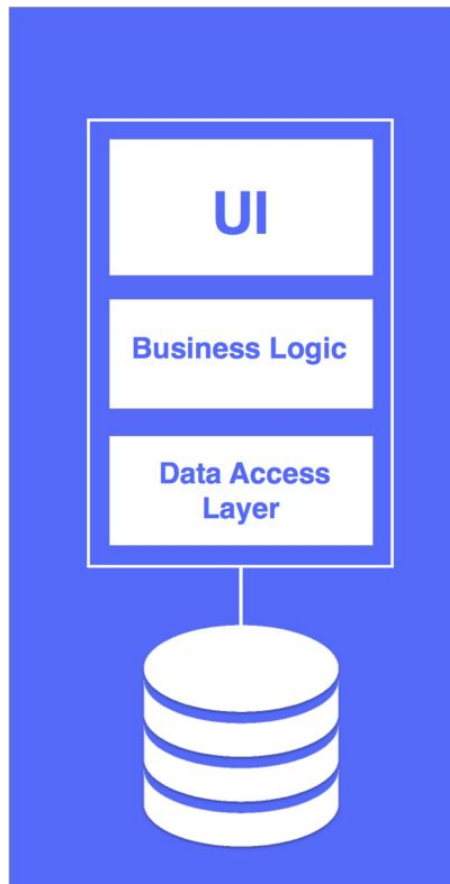
```
mutation {  
  createPerson(name: "Alice", age: 36) {  
    id  
  }  
}
```

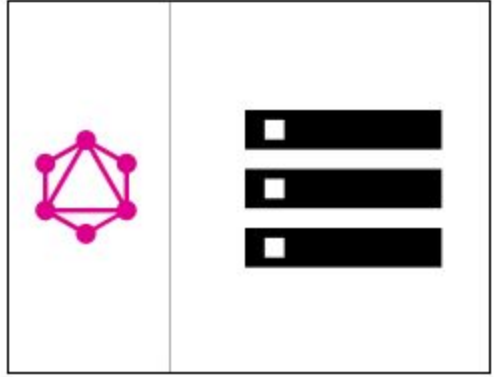


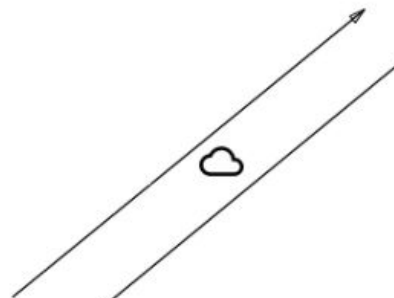
```
{  
  "data": {  
    "createPerson": {  
      "id": "cjemcefoq7sjd01950owwyncx"  
    }  
  }  
}
```

FULL PLAYGROUND

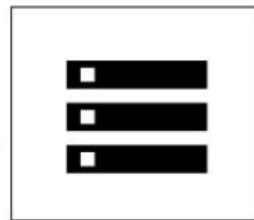
# Some GraphQL Architectures



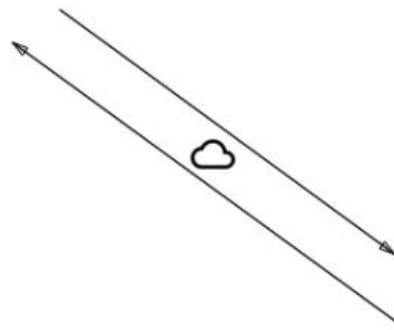
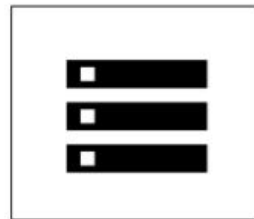




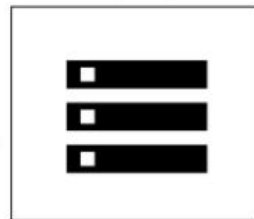
Legacy System



Microservice

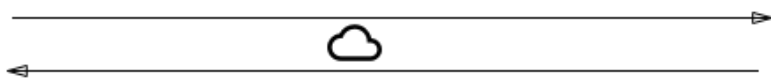


Third-party API





```
query {  
  User(id: "er3tg4sa9frj") {  
    name  
    followers(first: 5) {  
      name  
      age  
    }  
  }  
}
```



## Resolvers



```
User(id: String!): User  
name(user: User!): String  
age(user: User!): Int  
friends(first: Int, user: User!): [User!]!  
...
```



**Build features**

don't worry about API  
architecture

# GraphQL Core Concepts

## Schema Definition Language

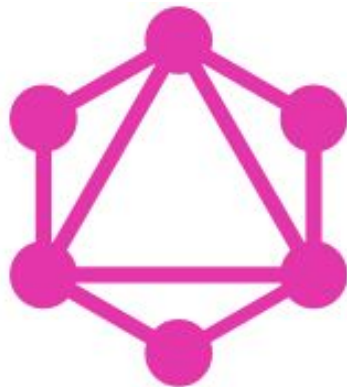
### Queries

### Mutations

### Resolvers (Server)



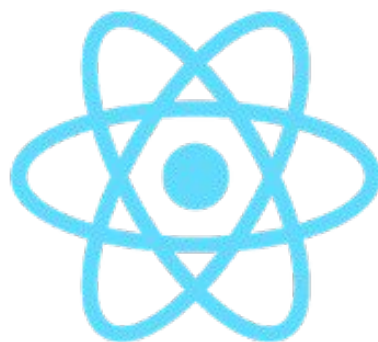
GRAPHCOOL



GRAPHQL



APOLLO CLIENT



React

**Build features**

don't worry about API  
architecture

**<http://bit.ly/sxsw-graphql>**