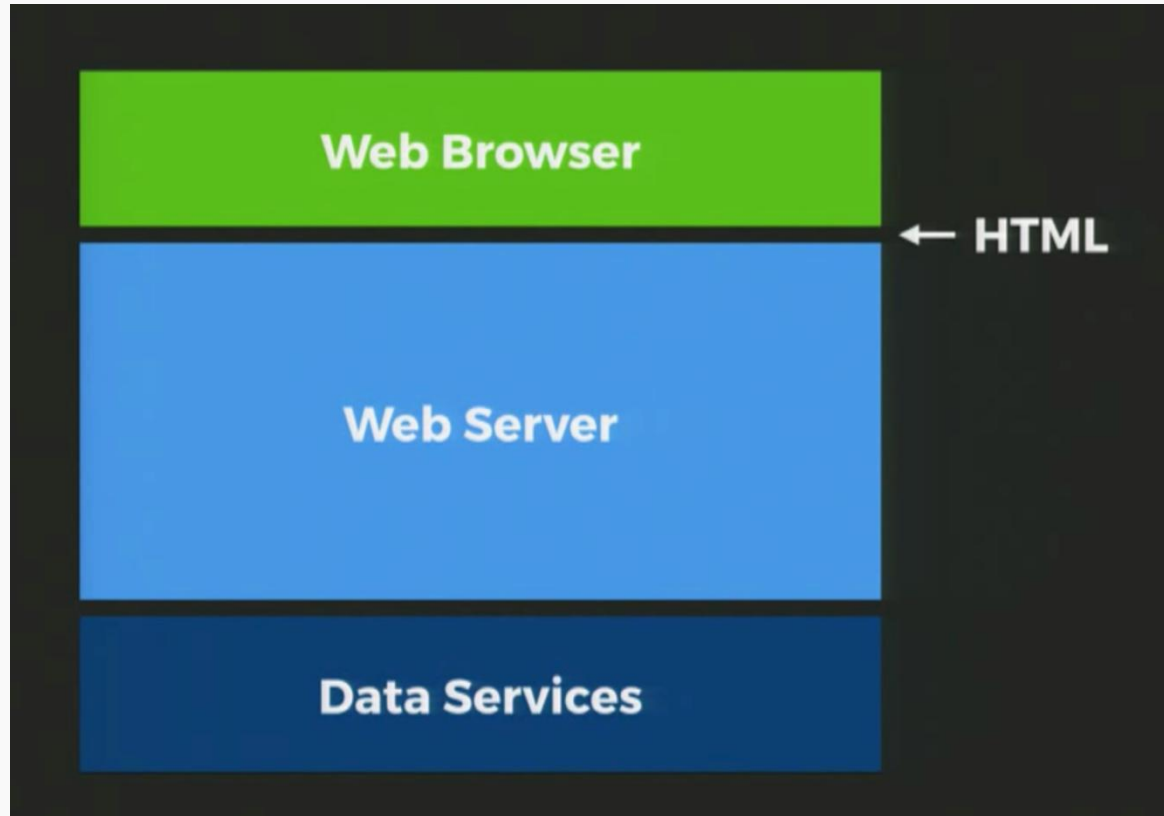


Introduction to GraphQL

Agenda

- Introduction to GraphQL
- History of GraphQL
- Queries & Mutations
- Schemas & Types
- Validations & Executions
- Compared to REST
- Demo Examples
- Q&A

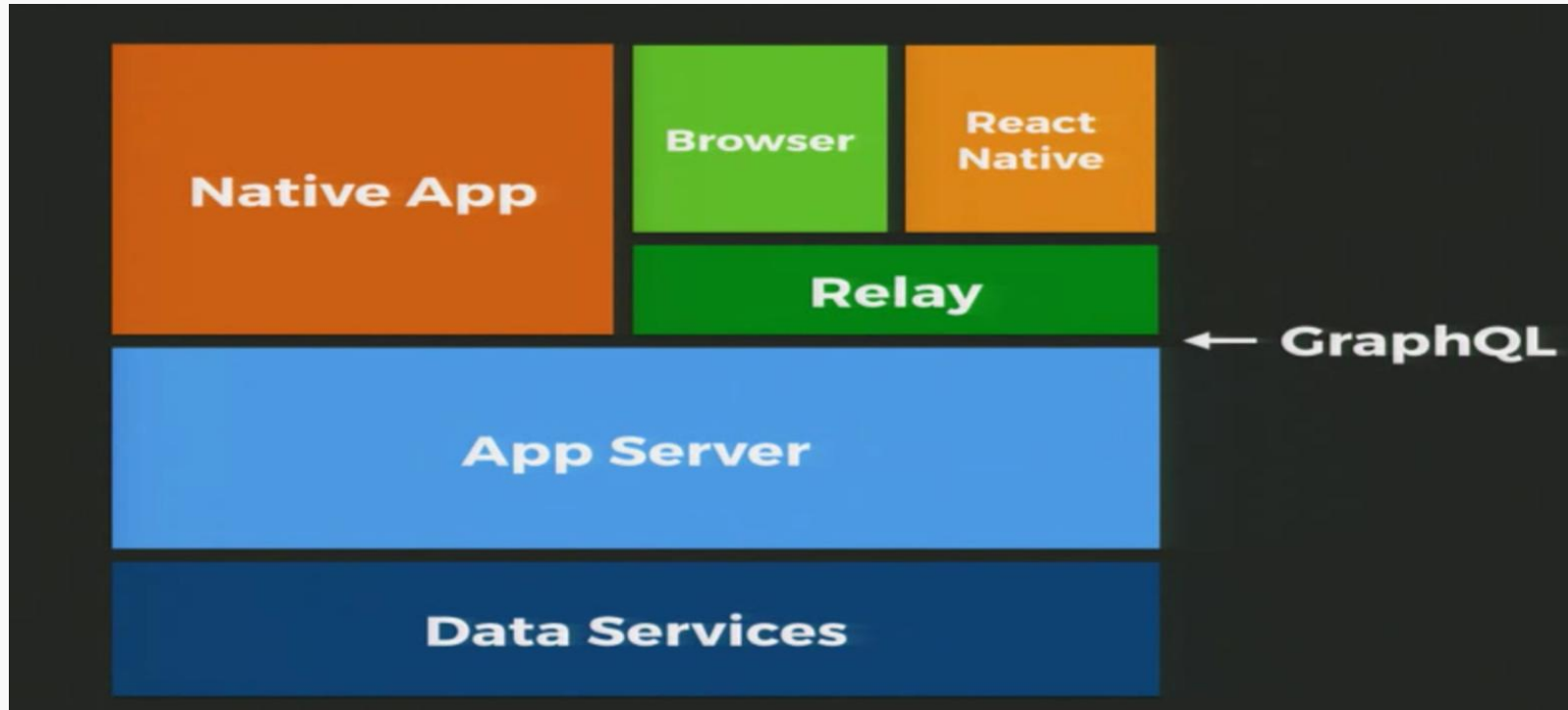
History of GraphQL



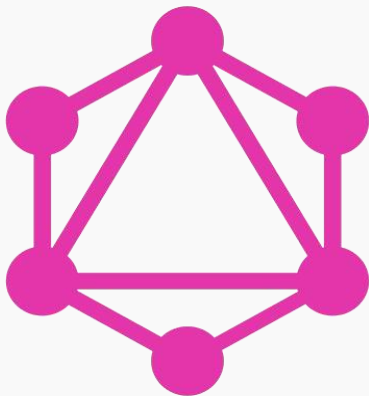
- Facebook use to have web framework for mobile apps.

Facebook Current Native App :

Today, Facebook gets more than 260 billion requests/day



What is GraphQL?



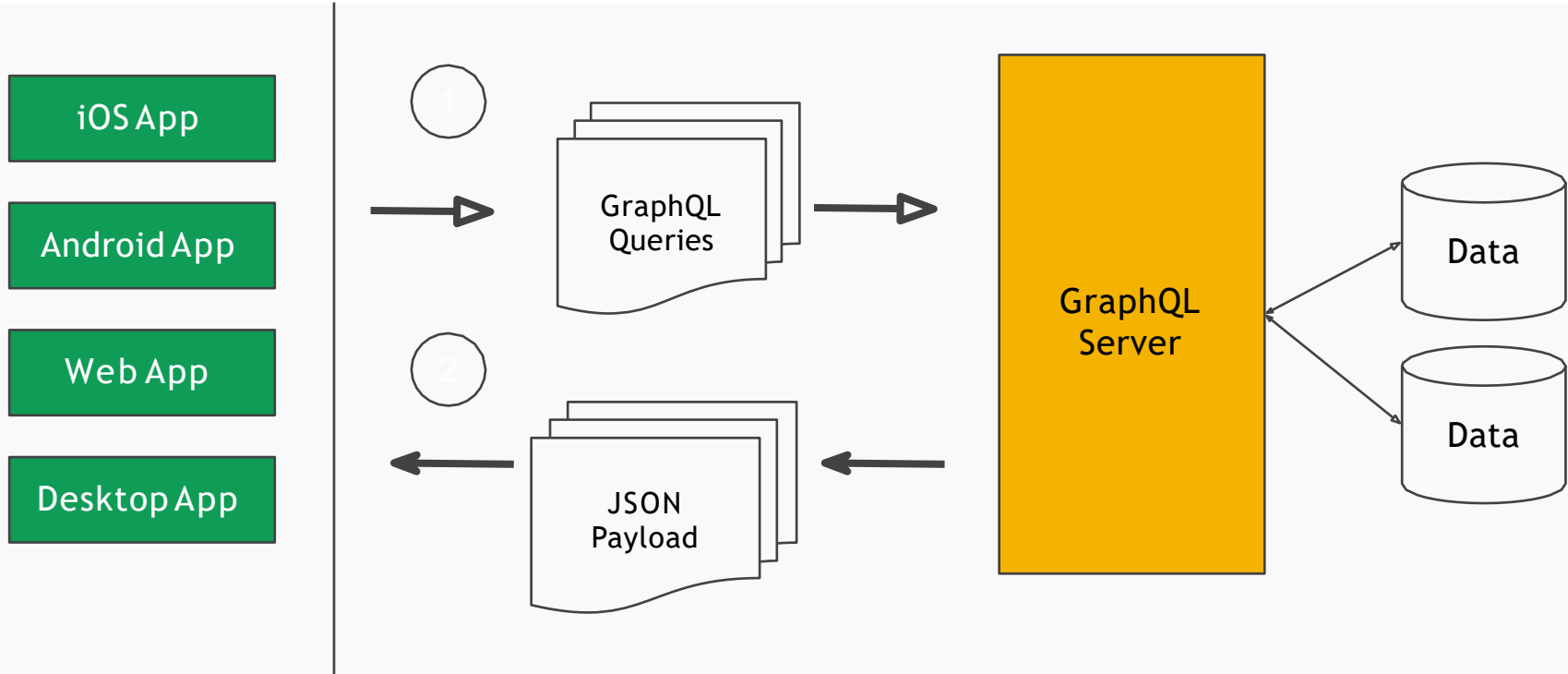
What is GraphQL ?

- GraphQL is a query language
- Specification for a server to execute queries

What Graph is NOT !

- Its not a database
- Not a library
- Not a storage engine
- Not language specific

How GraphQL works?



GraphQL Query Example

```
{  
  hello(name: "Sangeeta")  
}
```

```
{  
  "data": {  
    "hello": "Hello, Sangeeta!!"  
  }  
}
```

GraphiQL



Prettify

```
1 {  
2   hello(name: "Sangeeta")  
3   |  
4 }  
5
```

luckyNumber
hello
Int A lucky number

```
{  
  "data": {  
    "hello": "Hello, Sangeeta!!"  
  }  
}
```

< Schema

Query

🔍 Search Query...

First graphql example!! Yay!!

FIELDS

hello(name: String!): String

luckyNumber: Int

Schemas & Types

- Type System
- Type Language
- Enumerations, Lists, Interface creation
- Aliases
- Fragments

Schemas & Types Explanation

```
{
  me {
    name,
    profilePicture(size: 300) {
      width,
      height,
      url
    },
    friends(orderby: IMPORTANCE, first: 1) {
      name,
      events(first: 1) {
        name
      }
    }
  }
}
```

Type System:

```
type User {
  name: String!
  profilePicture(size: Int = 50): ProfilePicture
  friends(first: Int, orderBy: FriendOrderEnum): [User]
  events(first: Int): [Event]
}

enum FriendOrderEnum {
  FIRST_NAME,
  LAST_NAME,
  IMPORTANCE
}
```

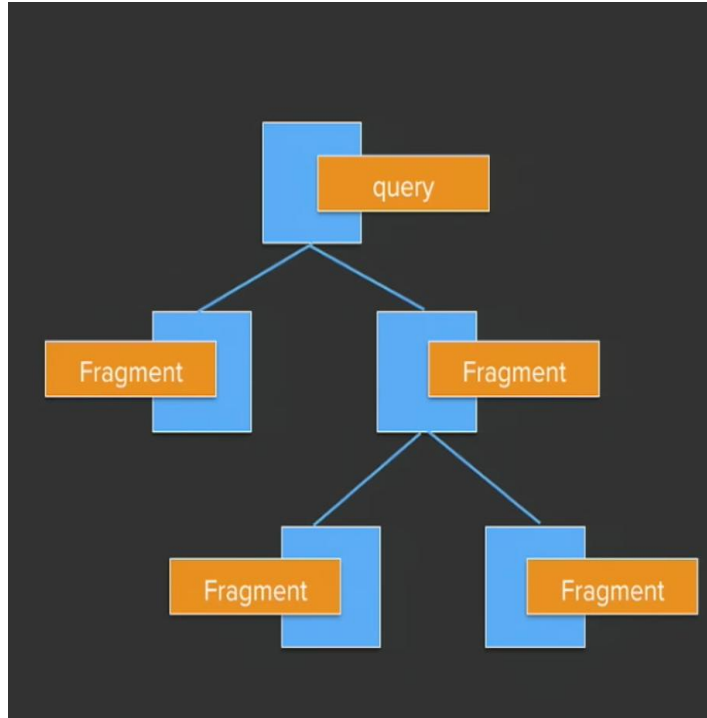
Schemas & Types Explanation

Aliases:

```
{
  me {
    name,
    lilPic: profilePicture(size: 50) {
      width,
      height,
      url
    },
    bigPic: profilePicture(size: 300) {
      width,
      height,
      url
    }
  }
}
```

Schemas & Types Explanation

Fragments:



```
fragment profilePic on User {  
  profilePicture {  
    width,  
    height,  
    url  
  }  
}
```



```
class ProfilePic extends React.Component {  
  render() {  
    var pic = this.props.data.profilePic;  
    return <img width={pic.width} height={pic.height} src={pic.url} />  
  }  
}
```

Schemas & Types Explanation

Fragments:

```
fragment personRow on User {  
  ...profilePic,  
  name,  
  isFriend  
}
```



Grace

Add Friend

```
class PersonRow extends React.Component {  
  render() {  
    var data = this.props.data;  
    return (  
      <div>  
        <ProfilePic data={data} />  
        {data.name}  
        {data.isFriend ? null : <AddFriendButton />}  
      </div>  
    );  
  }  
}
```

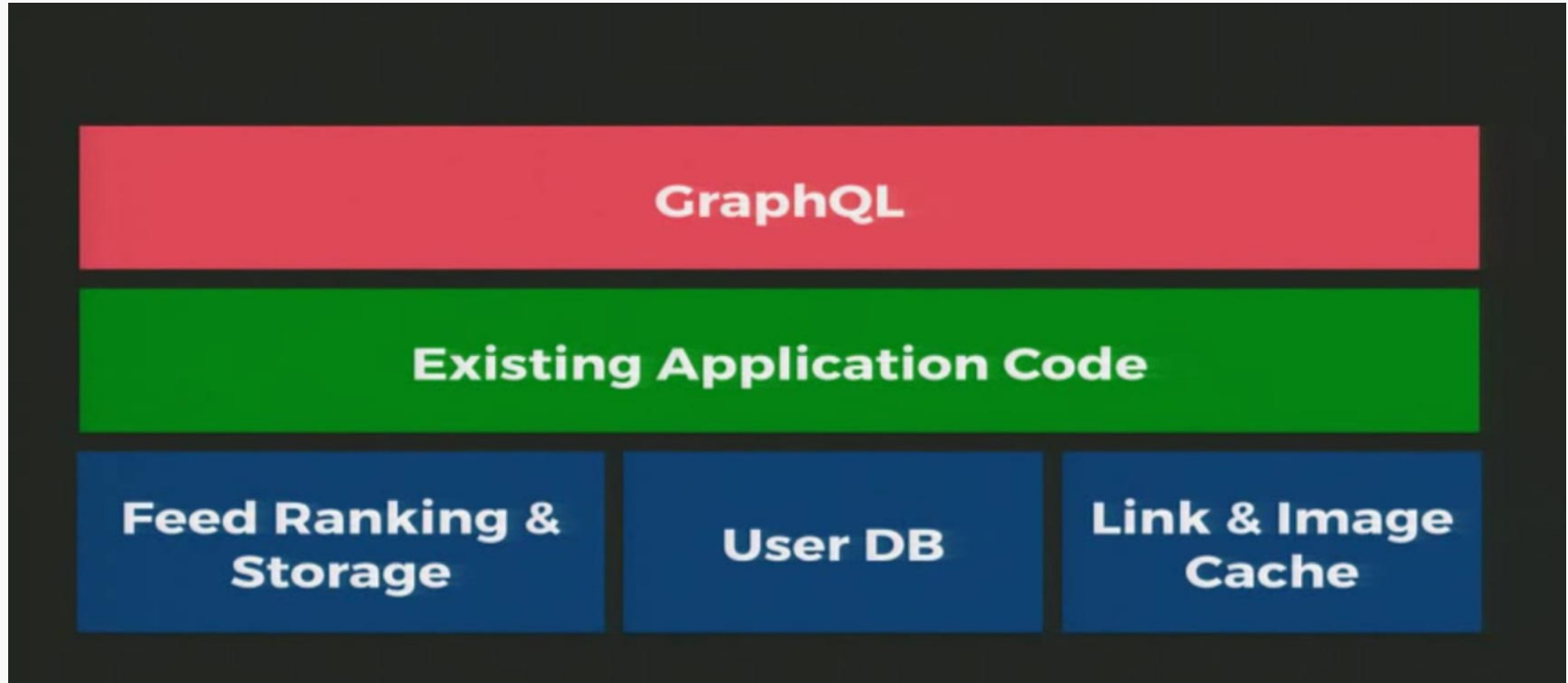
Validations

```
{  
  me {  
    name,  
    superPower  
  }  
}
```

**Unknown field "superPower"
on type "User"**

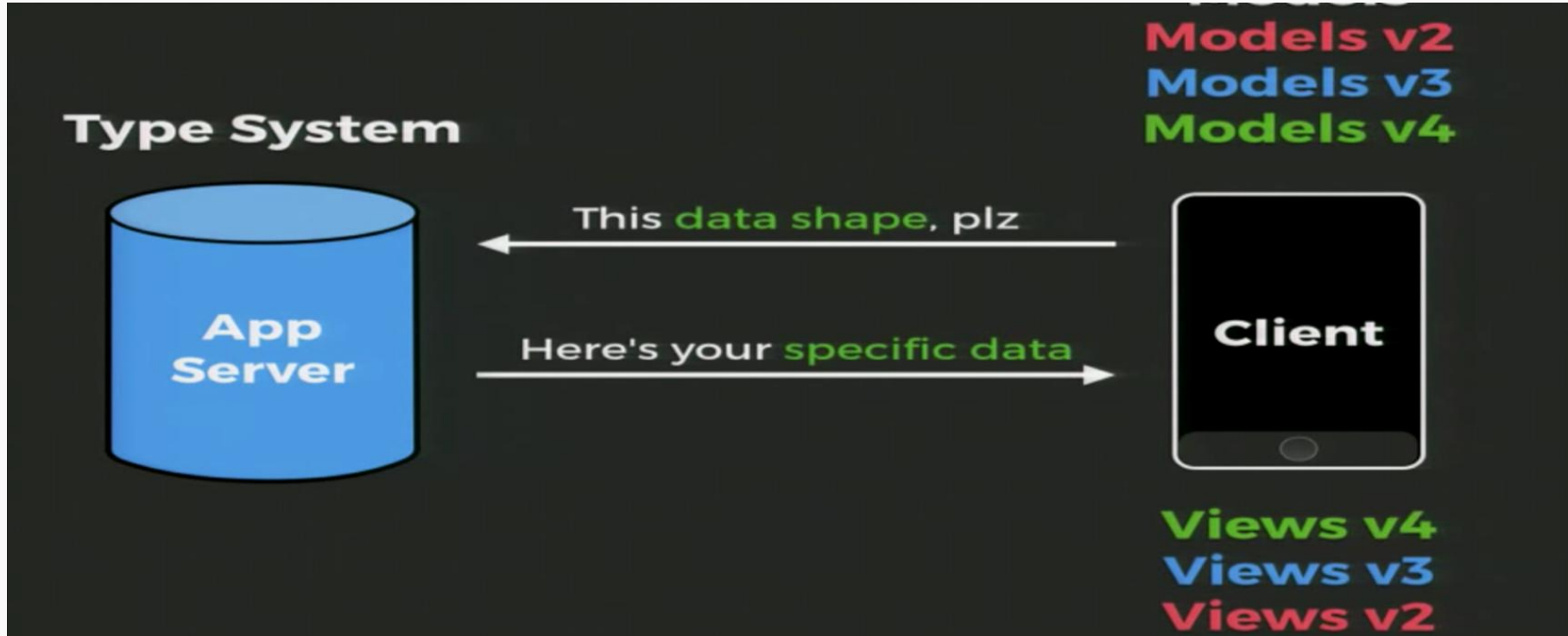
Other Benefits of GraphQL

1.Minimal code changes to adapt

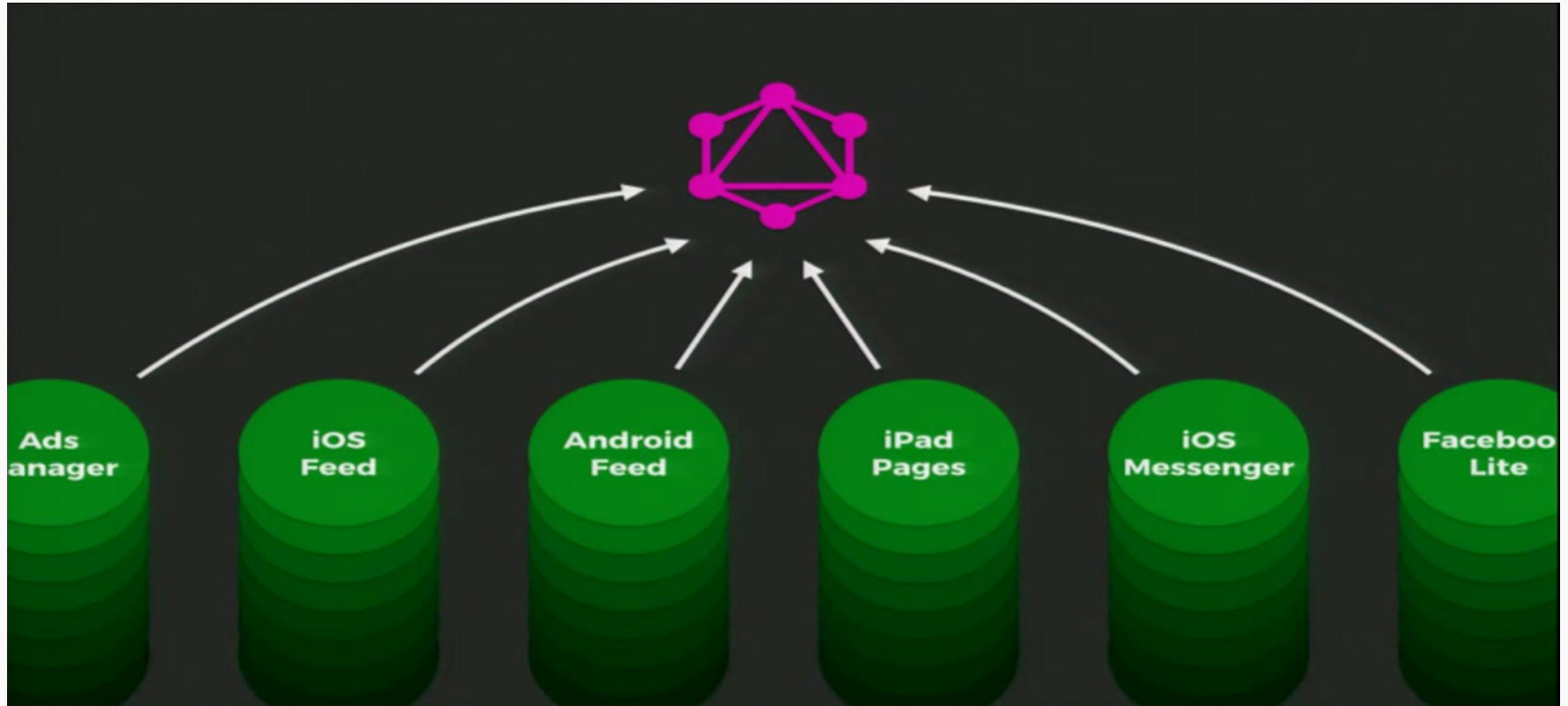


Other Benefits of GraphQL

2.No need to maintain versioning informations



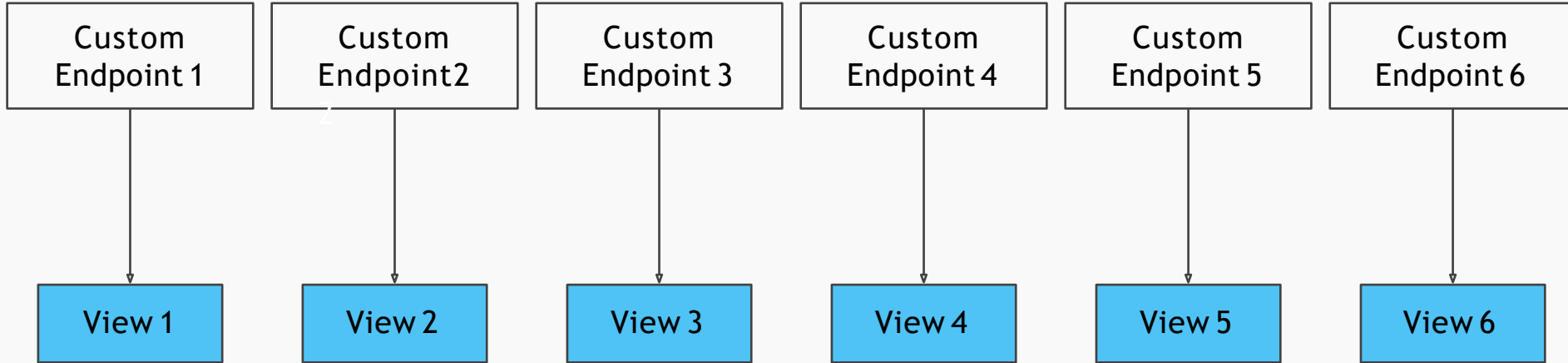
Other Benefits of GraphQL

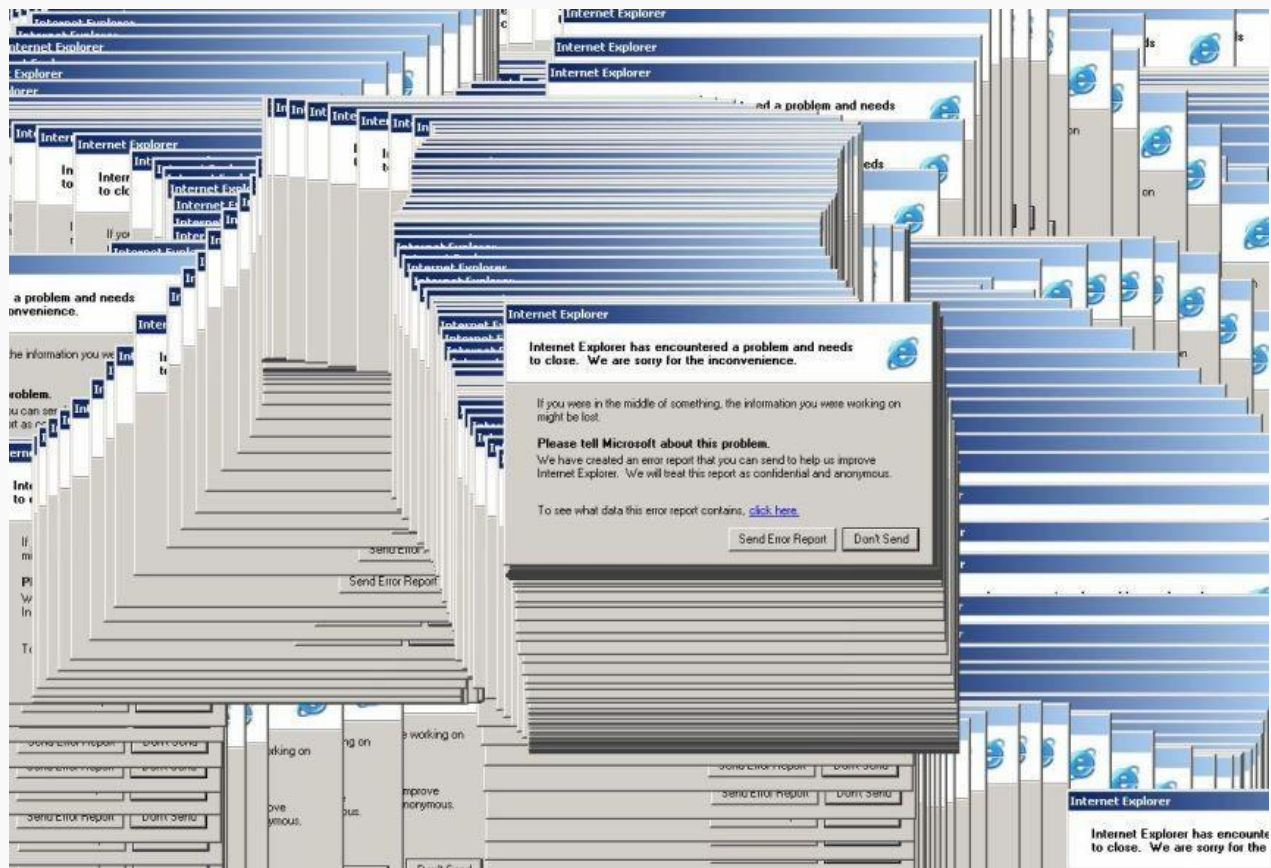


REST Vs GraphQL

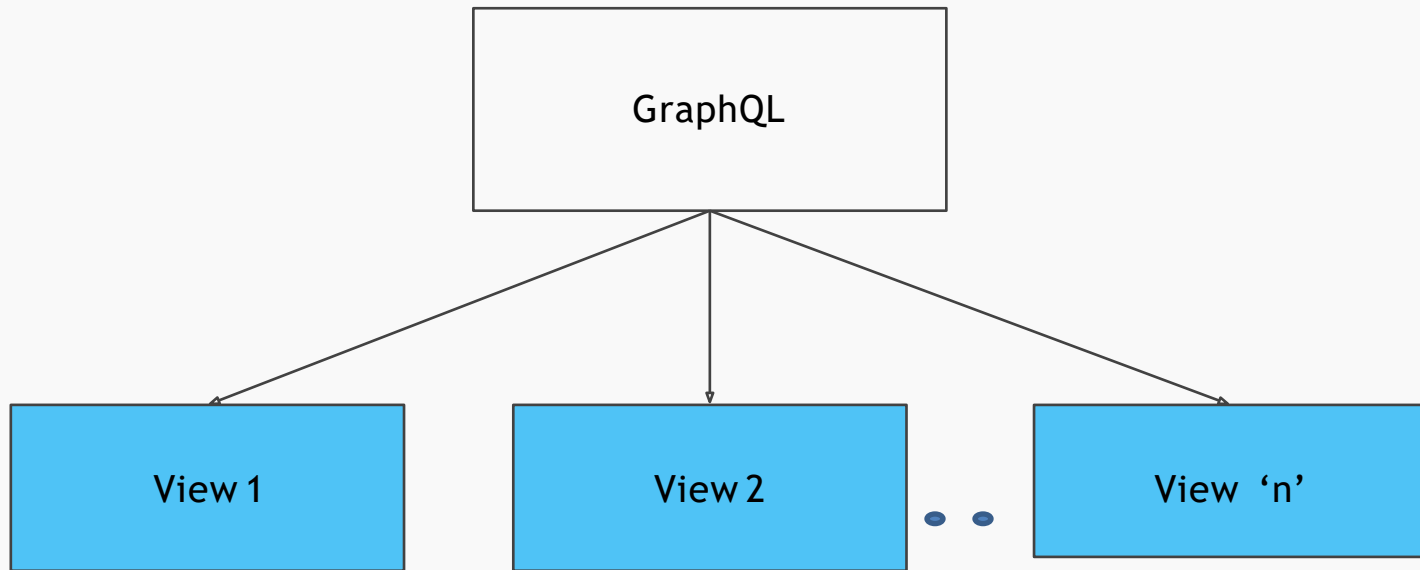
- Shopify claims : As application grows larger, REST architecture often becomes unmanageable
- Using REST, over fetching/under fetching of data becomes part of the application development.
- Handling custom endpoints, multiple end points can be time consuming/costly effort.

REST: Custom End Points





GraphQL:



Advantages

- What you see is what you get
- Client specific data
- Application layer protocol
- Strong typed
- Self documenting
- Existing backend APIs
- RFC - <http://facebook.github.io/graphql>
- Extra powers with Relay and React
- Introspection
- Active community

Disadvantages

- No select *
- Args can become enormous
- Boilerplate

Who's Using GraphQL:



METE  **R**

intuit®

coursera

credit karma™

startups.co

References:

- <http://graphql.org/graphql-js/>
- <https://facebook.github.io/graphql/>
- <http://graphql.org/graphql-js/running-an-express-graphql-server/>
- <https://www.youtube.com/watch?v=WQLzZf34FJ8>

Thank you!
Questions?

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