

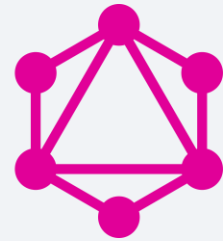
Building a GraphQL API in .NET 6

and consume it with Playground





Building a GraphQL API in .NET 6 and consume it with Playground



GraphQL



Visual
Studio



Heliberto Arias

.NET SENIOR DEVELOPER

www.linkedin.com/in/helibertoarias

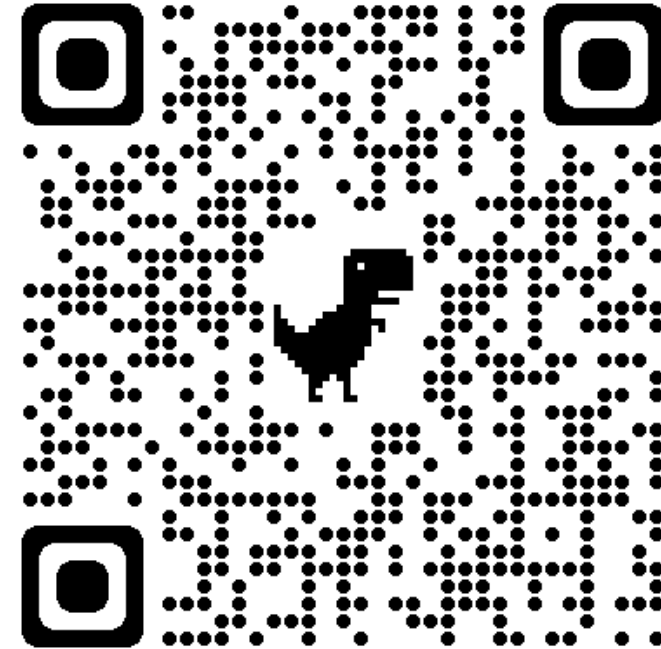
www.helibertoarias.com

Content Overview

- What is GraphQL?
- Who is using GraphQL?
- REST vs GraphQL
- Starting with GraphQL
- Creating a GraphQL API
- Consuming a GraphQL API

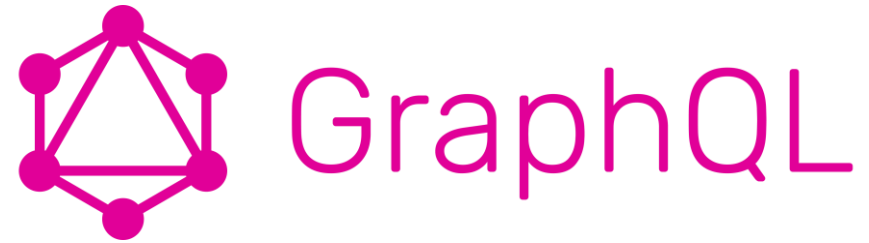


Where is the code?



<https://bit.ly/RoccoGraphQL>





Was created by
Facebook in 2012

Open-sourced in
2015.

Is a query language
for your API.

Provides flexibility and
efficiency in client-server
communications.

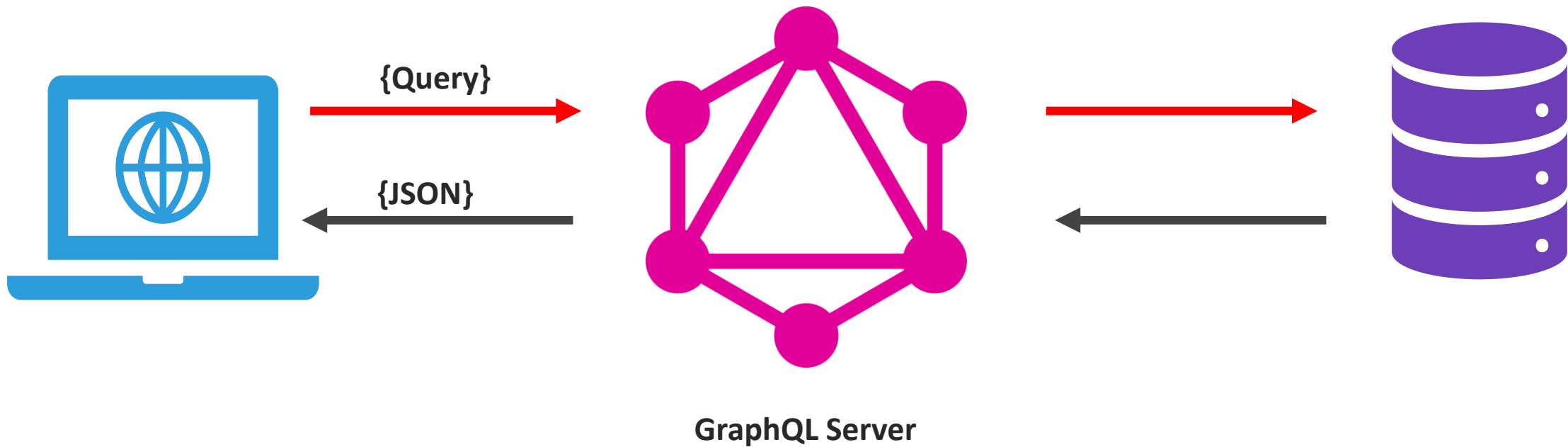
Huge community
involvement



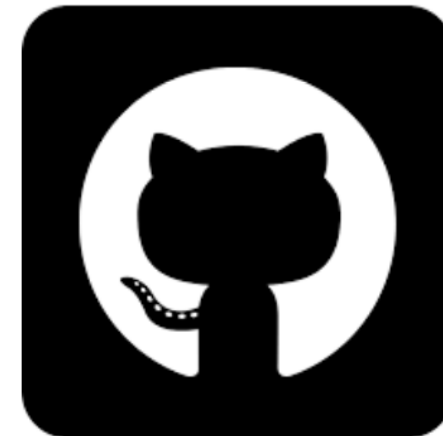
Before GraphQL



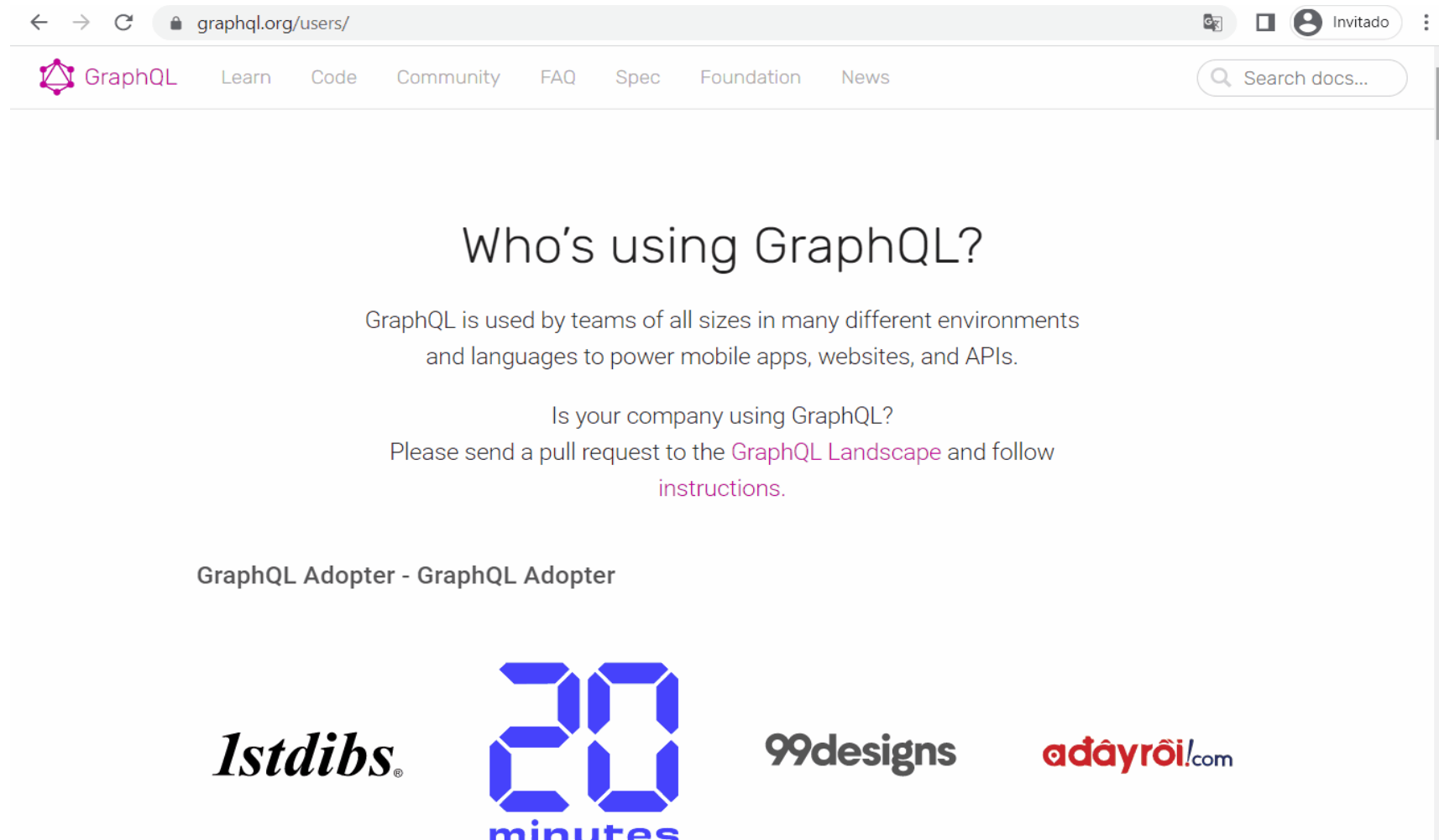
Using GraphQL



Who is using GraphQL?

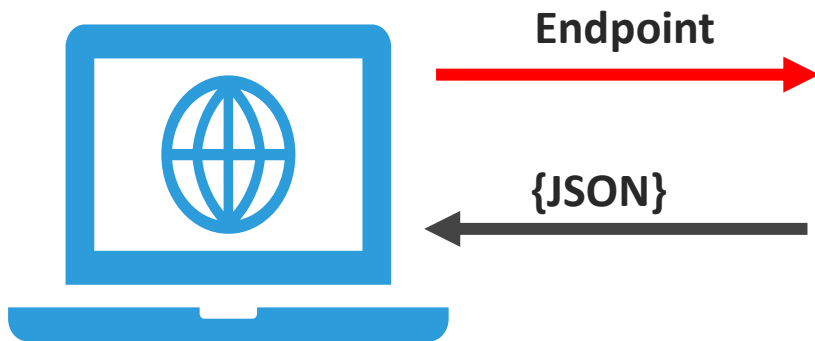


Who is using GraphQL?



<https://graphql.org/users>

REST



Requirements

Display

- Company
 - Name
- Employees
 - Name

REST: Get Companies



/api/companies



{JSON}



Web API

```
[  
  {  
    "id": "c9d4c053-49b6-410c-bc78-2d54a9991870",  
    "name": "IT_Solutions Ltd",  
    "address": "583 Wall Dr. Gwynn Oak, MD 21207",  
    "country": "USA"  
  },  
  ...  
]
```



REST: Get Employees



/api/companies/<id>/employees



{JSON}



Web API

```
[
  {
    "id": "80abbca8-664d-4b20-b5de-024705497d4a",
    "name": "Sam Raiden",
    "position": "Software developer",
    "age": 26
  },
  ...
]
```



GraphQL



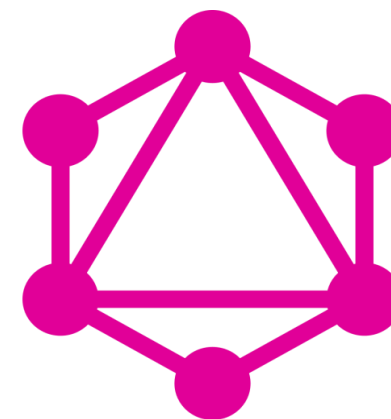
```
{  
  companies {  
    name  
    employees {  
      name  
    }  
  }  
}
```

{ Query }



{JSON}

```
[  
  {  
    "name": "IT_Solutions Ltd",  
    "employees": [ { "name": "Sam Raiden" },  
      ...  
    ]  
  }  
  ...  
]
```



GraphQL Server

REST vs GraphQL





REST

Multiple round trips

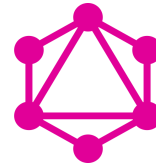
Over fetching / under fetching data

Frontend teams rely heavily on backend

Caching is built into HTTP spec

Large community

Learning curve: Moderate



GraphQL

One single request to collect the data

You get only what you ask for

Frontend and backend teams can work independently

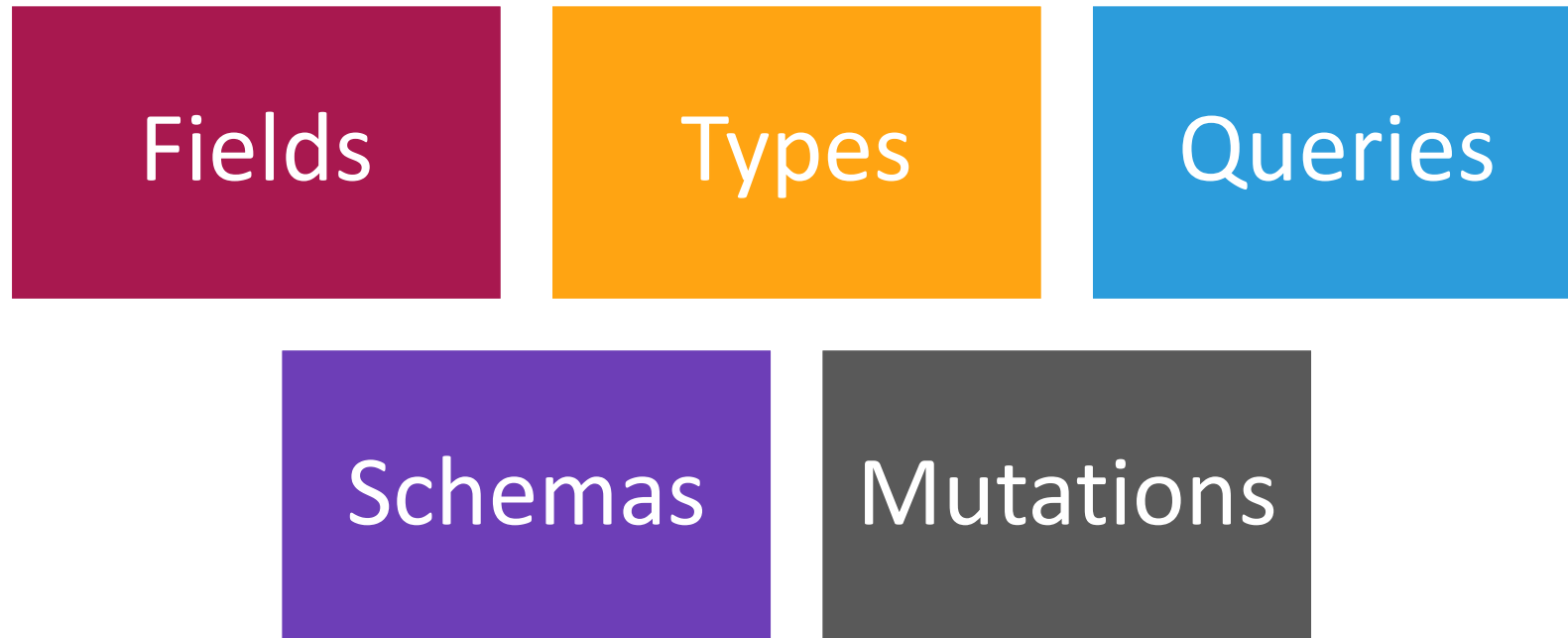
Requires additional libraries (Apollo)

Growing community

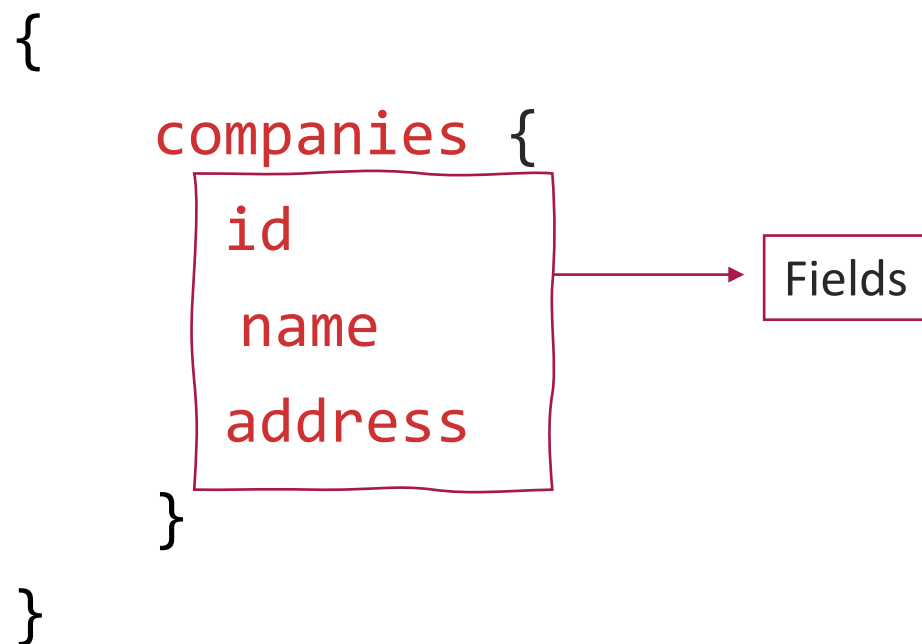
Learning curve: Difficult



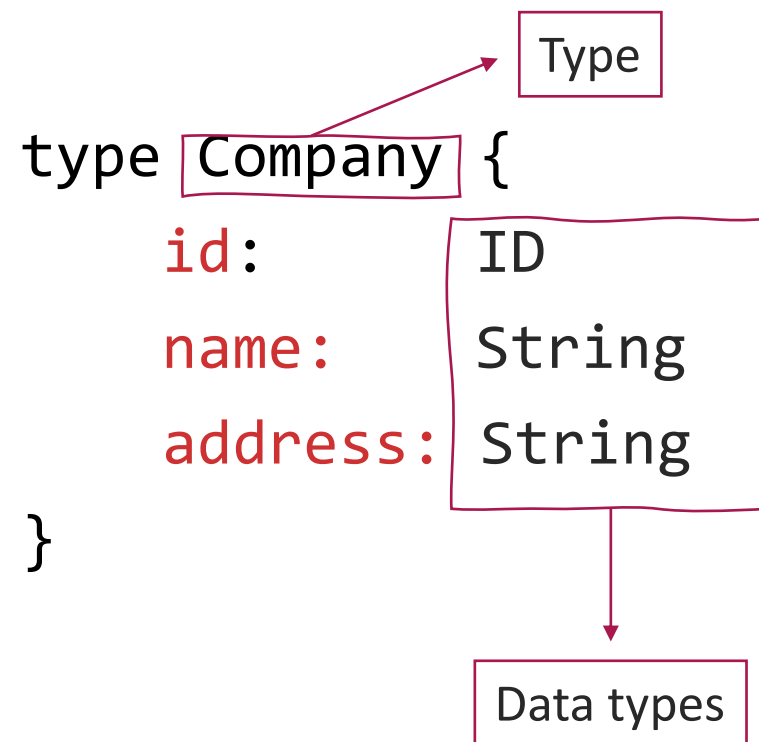
GraphQL: Core Concepts



GraphQL: Fields



GraphQL: Types



GraphQL: Schema

GraphQL: Query

```
schema {  
  query: CompanyQuery  
  mutation: CompanyMutation  
}
```

```
type CompanyQuery {  
  companies: [Company]  
  company(id: ID!): Company  
}
```

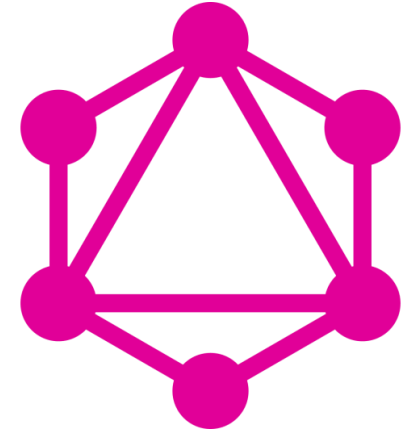
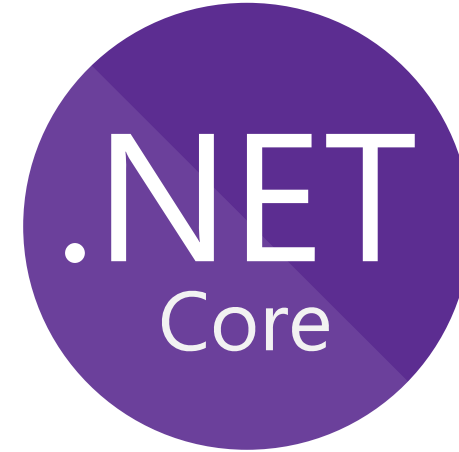
GraphQL: Mutations

```
type CompanyMutation {  
  createCompany(company: companyInput!): Company  
}
```

GraphQL SDK for .NET

Popular Libraries

- GraphQL-DotNet
 - Open Source (100+ Contributors)
 - 1.5M NuGet Downloads
- Hot Chocolate
 - Open Source (25+ Contributors)
 - 95k NuGet Downloads





Demo: GraphQL + Playground + .NET 6

Summary

- A GraphQL API uses queries.
- Returns specified data structure.
- Provides flexibility and efficiency in client-server communications.
- Schemas help to define what can be queried.
- Playground is a client for a GraphQL

More information

- [GraphQL Official documentation](#)
- [GraphQL Playground Repository](#)
- [GraphQL for .NET](#)
- [Demo repository](#)

Questions ?



JalaSoft®