



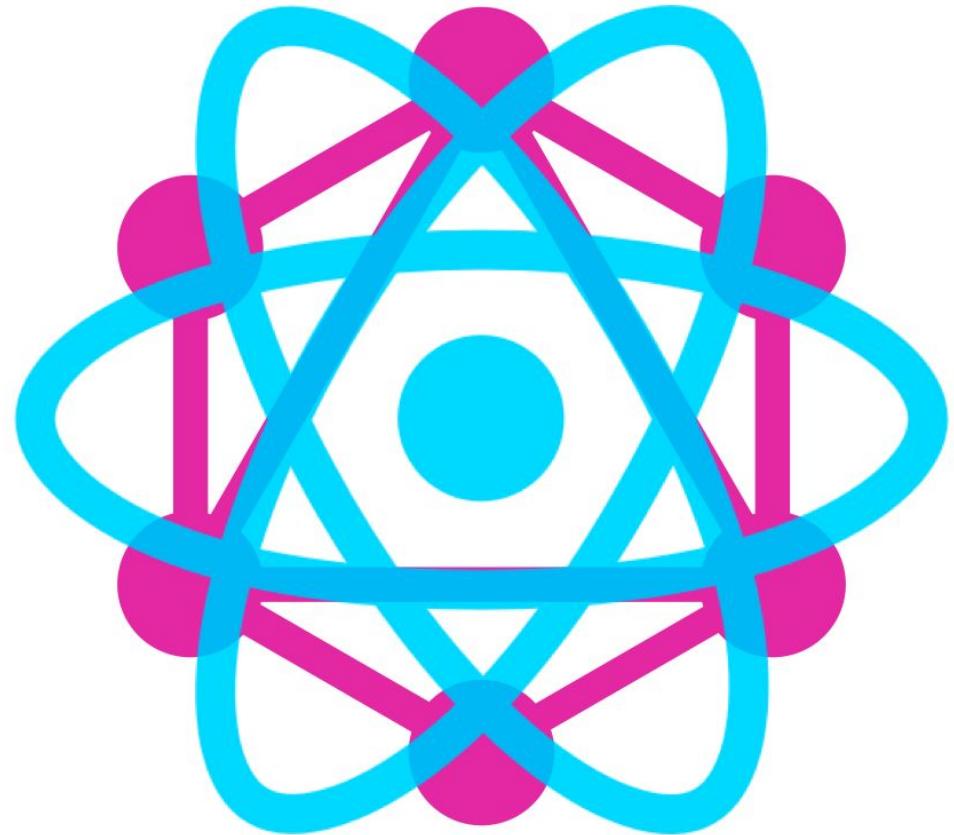
Moving Faster with GraphQL

3 Agustus 2019



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@Tokopedia since 2017

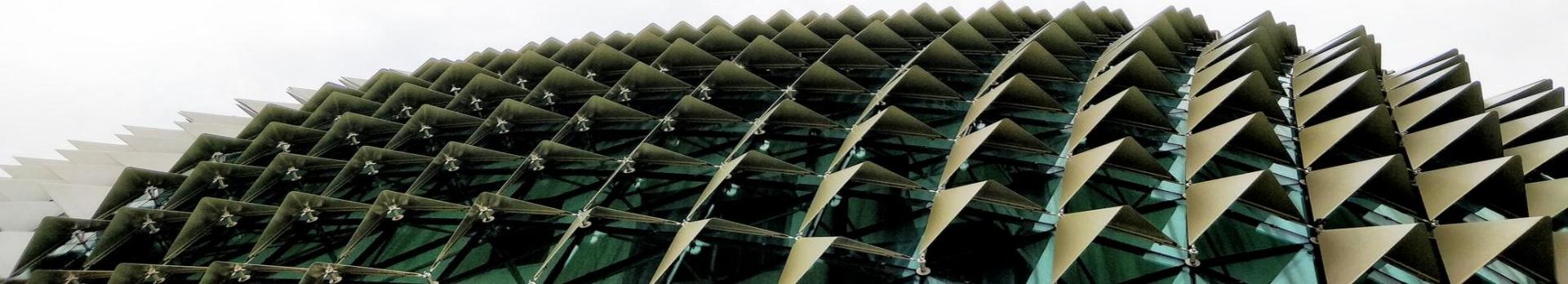
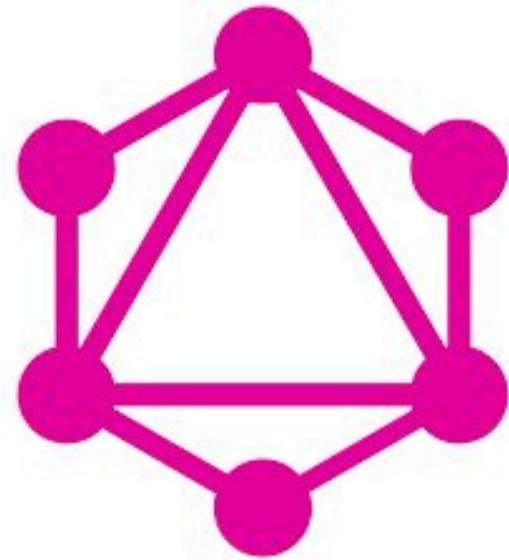


Moving Faster with GraphQL

Transaction Module Tokopedia



GraphQL



Restful API

Get

<https://xxx.tokopedia.com/api/v1/orders>

```
{  
  "data": {  
    "orders": [  
      {  
        "id": 1,  
        "invoice": "INV/123/POP",  
        "products": [  
          {  
            "name": "Botol Minum",  
            "price": "Rp 20.000",  
            "category": "Minuman",  
            "shopName": "Shop A"  
          },  
          {  
            "name": "Topi",  
            "price": "Rp 10.000",  
            "category": "Fashion",  
            "shopName": "Shop A"  
          }  
        ]  
      }  
    ]  
  }  
}
```

GraphQL: Define Schema!

```
{  
  orders {  
    id  
    invoice  
    products {  
      name  
      price  
    }  
  }  
}
```

POST <https://xxx.tokopedia.com/graphq>



```
{  
  "data": {  
    "orders": [  
      {  
        "id": 1,  
        "invoice": "INV/123/POP",  
        "products": [  
          {  
            "name": "Botol Minum",  
            "price": "Rp 20.000"  
          },  
          {  
            "name": "Topi",  
            "price": "Rp 10.000"  
          }  
        ],  
        "id": 2,  
        "invoice": "INV/875/POP",  
        "products": [  
          {  
            "name": "Baygon",  
            "price": "Rp 20.000"  
          },  
          {  
            "name": "Pewangi Ruangan",  
            "price": "Rp 5.000"  
          }  
        ]  
      }  
    ]  
  }  
}
```

GraphQL Schema

Single entrypoint

Query

Type

Read

Mutation

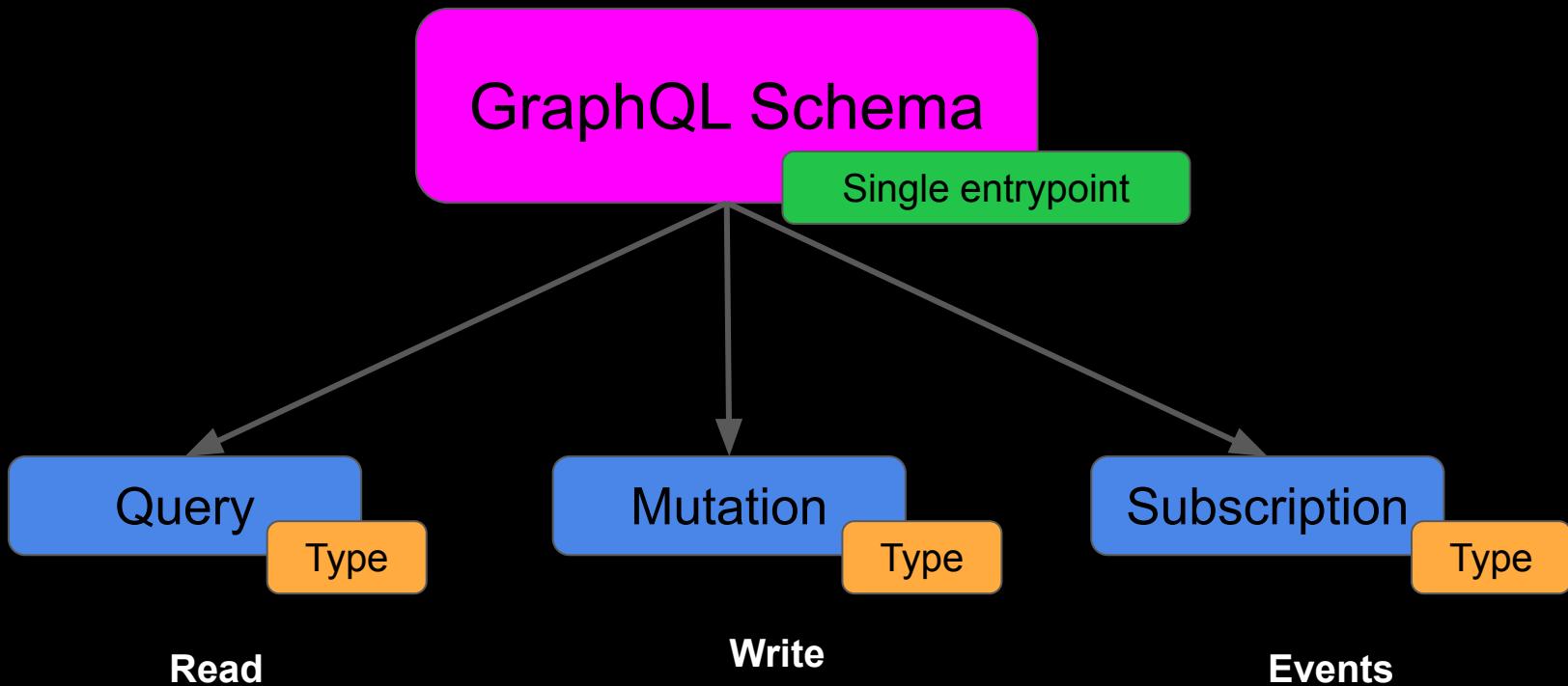
Type

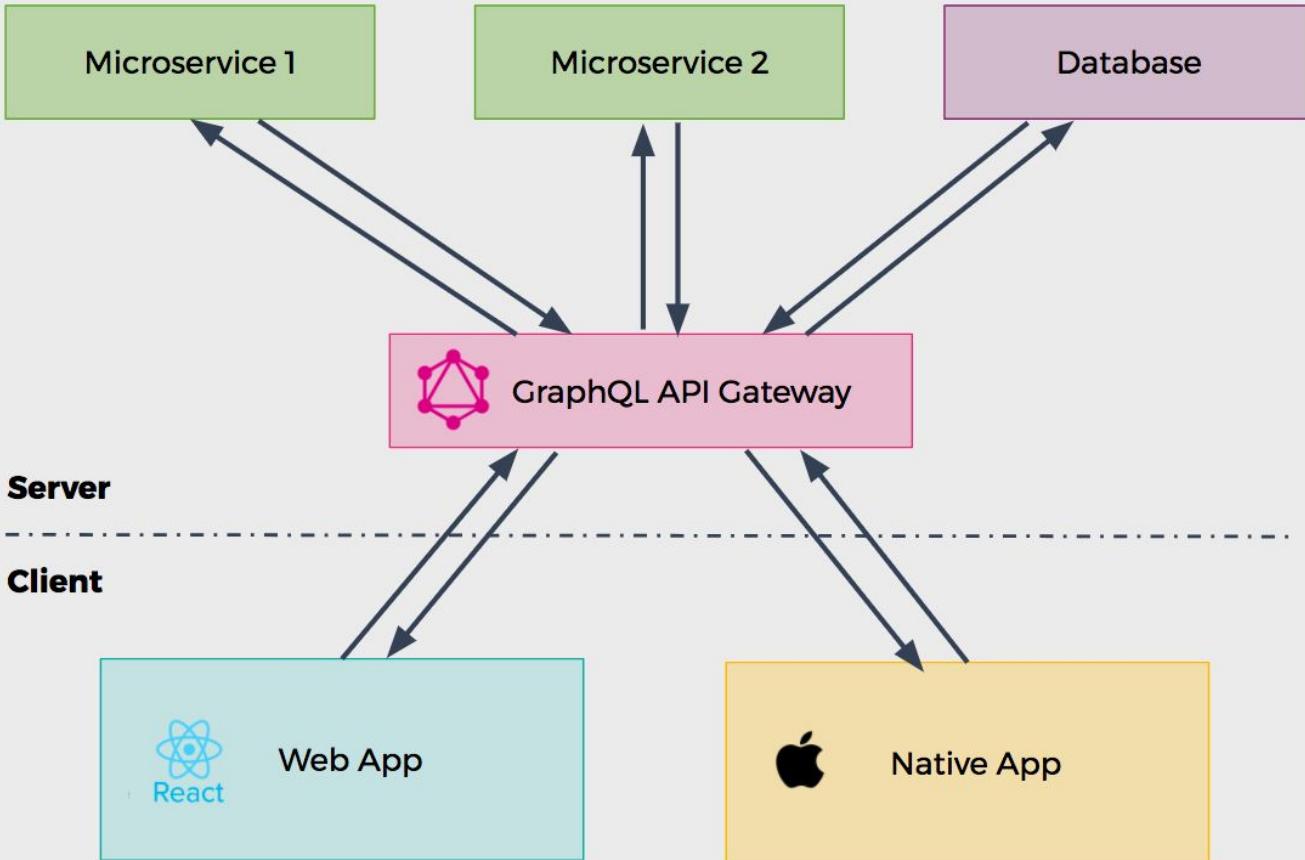
Write

Subscription

Type

Events



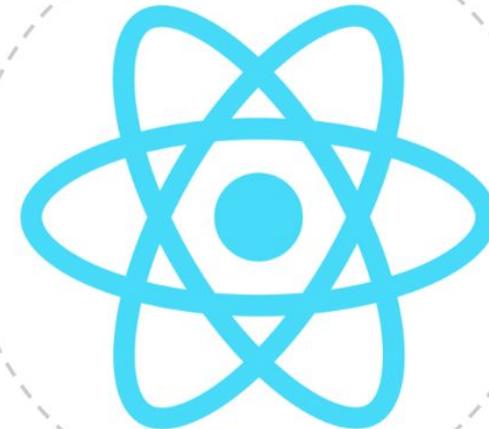
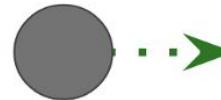


Implementation GraphQL



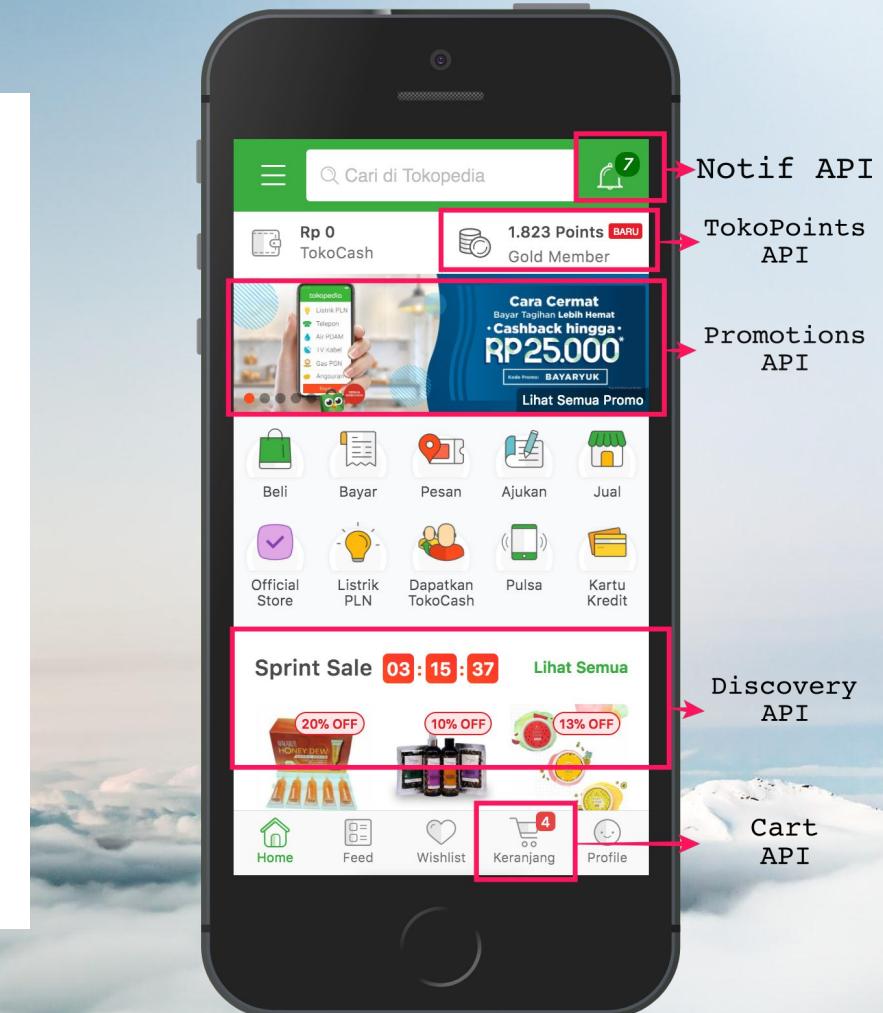
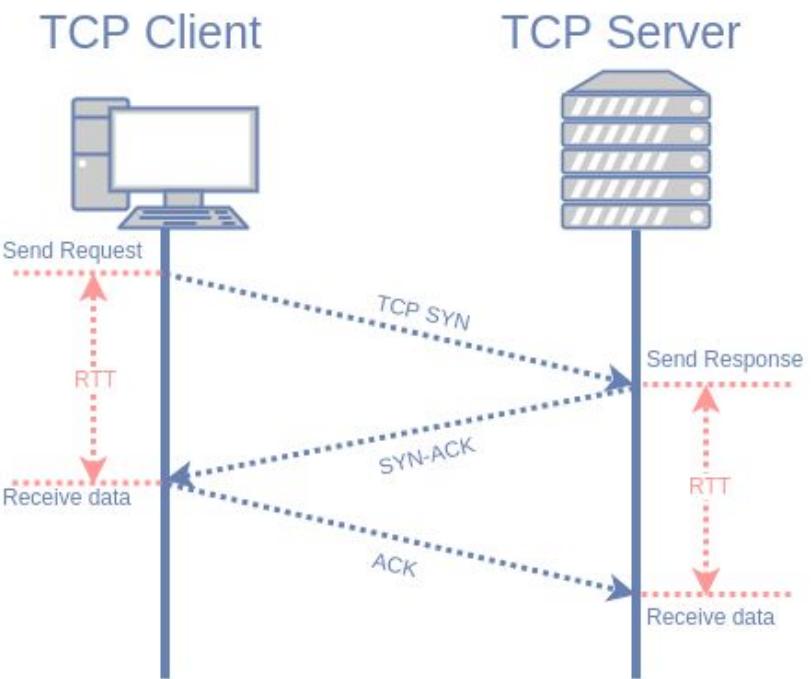


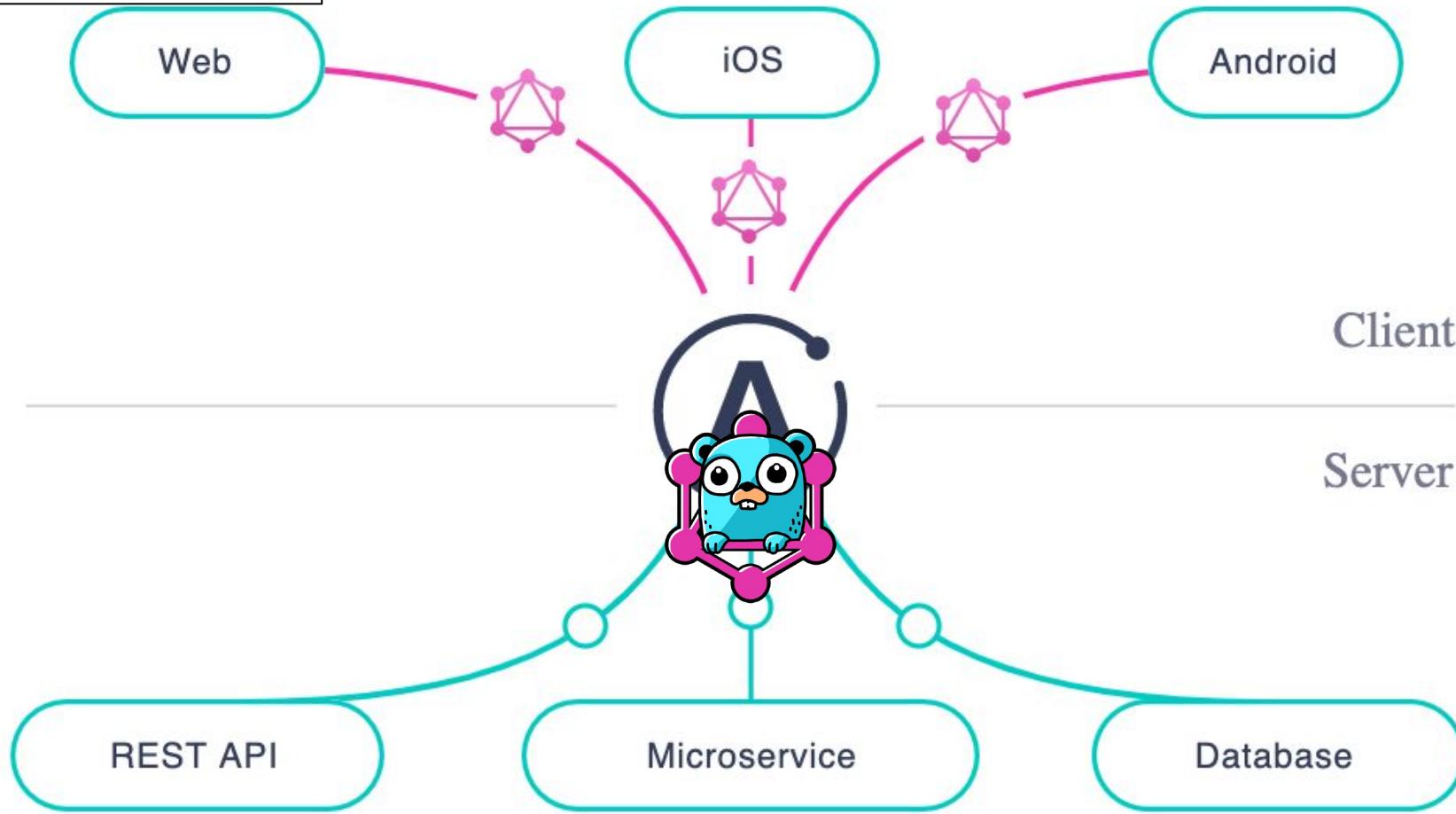
PERL
Old mobile site



REACT
TOKOPEDIA LITE

Start from 2017



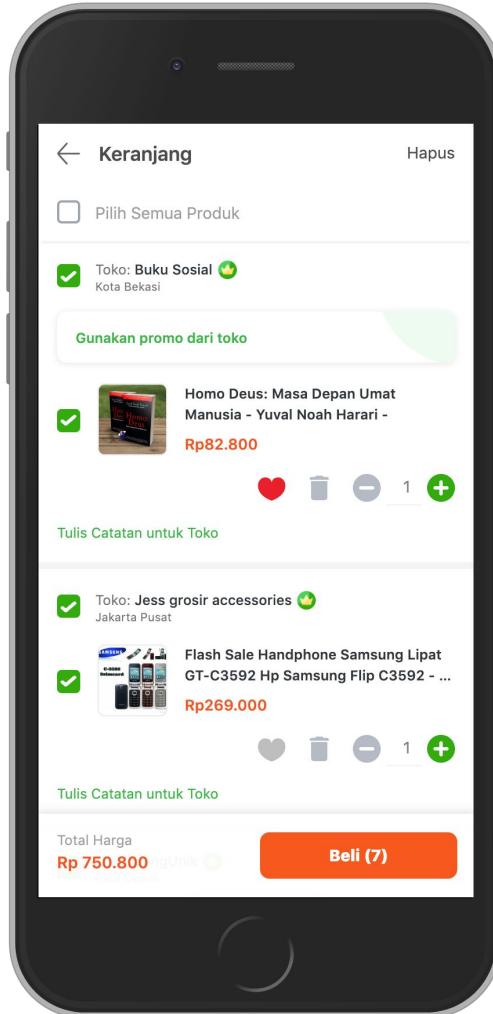


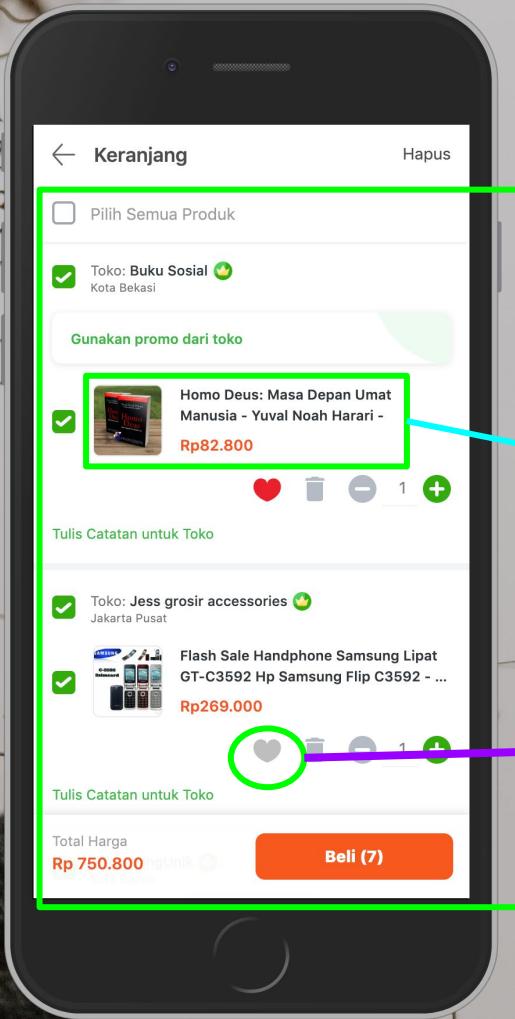
Product Development Case 1

Revamp Cart Checkout



Cart





H1-H2
Design

Cart Squad

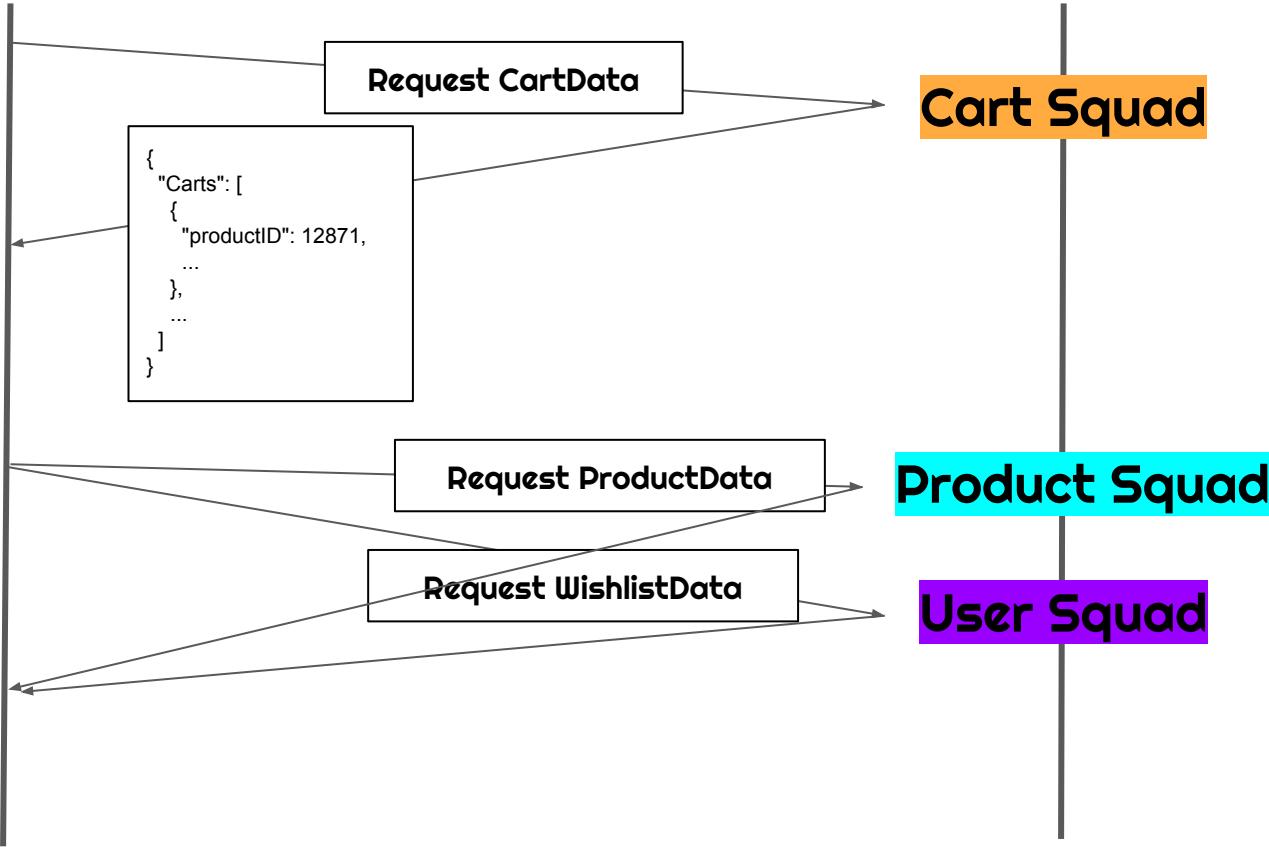
Product Squad

User Squad

Description

Client

Server



GraphQL as Data Aggregator

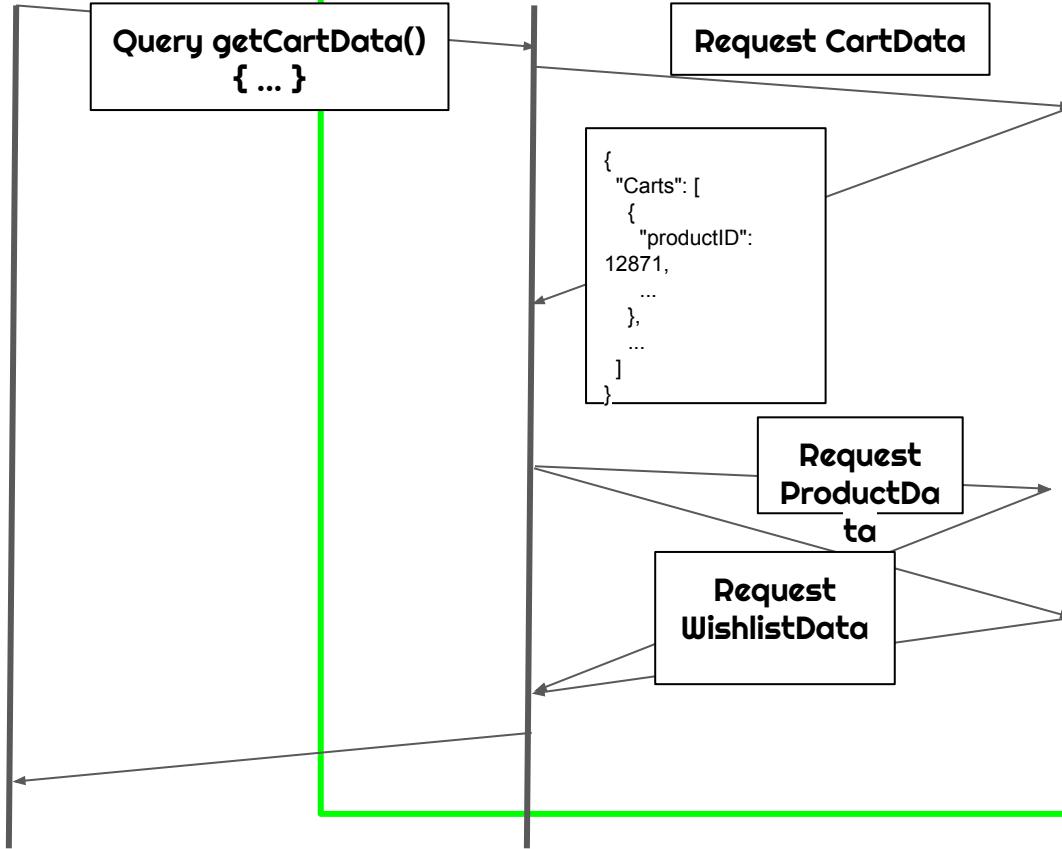


Client

GraphQL

Server to Server

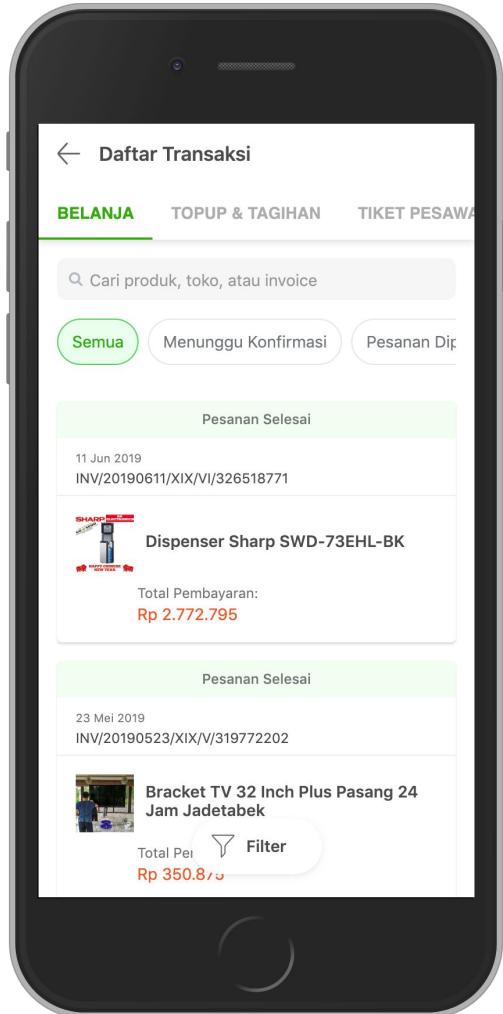
Server



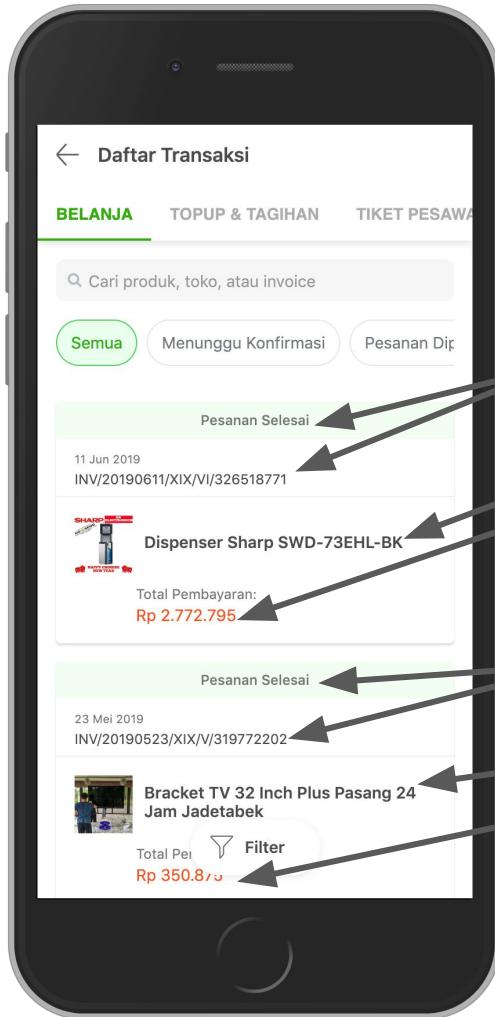


Product Development Case 2

Revamp Order List



Order List



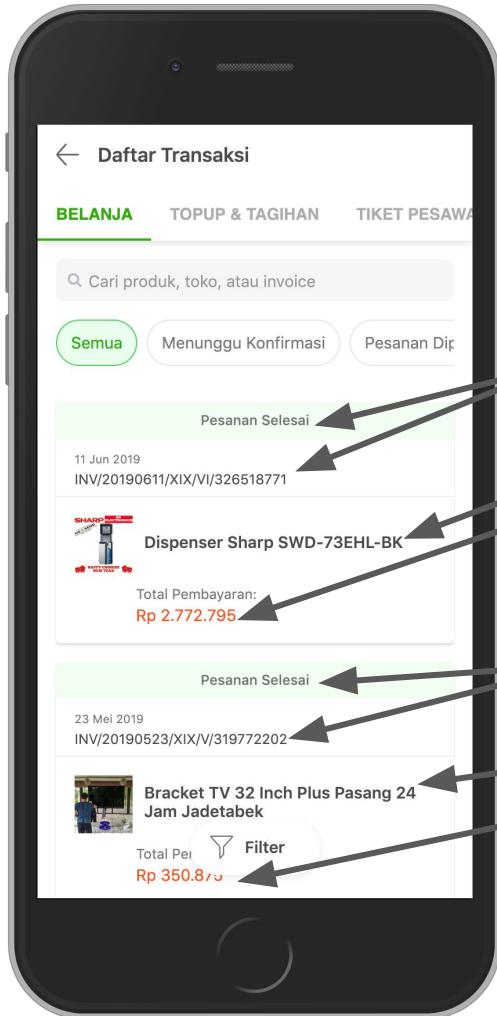
```
orders": [
  {
    "id": 1,
    "invoice": "INV/20190611/XIX/VI/326518771",
    "status": 0,
    "products": [
      {
        "name": "Dispenser sharp SWD-73EHL-BK",
        "price": 2772795,
        "imgSrc": "https://xxx.cdn.custom/image/v1/p/231/product_m_thumbnail/mobile"
      }
    ],
    "id": 2,
    "invoice": "INV/20190523/XIX/V/319772202",
    "status": 2,
    "products": [
      {
        "name": "Bracket TV 32 Inch plus pasang 24 Jam Jadetabek",
        "price": 350875,
        "imgSrc": "https://xxx.cdn.custom/image/v1/p/231/product_m_thumbnail/mobile"
      }
    ]
}
```

A close-up photograph of a monarch butterfly's life cycle stages. In the foreground, a green, oval-shaped egg hangs from a black pipe. Behind it, a small, segmented caterpillar crawls along the pipe. Further back, a brown chrysalis hangs from the pipe. To the right, the wings of an adult monarch butterfly are visible, showing their characteristic orange and black patterns.

GraphQL as Transform Data

```
const OrderQuery = {
  type: OrderType,
  args: {},
  resolve: async (root, args, context) => {
    const data = await fetchOrder()

    return data.map(item => {
      const { status: statusOrder, products: productOrder } = item
      return {
        ...item,
        status: statusOrder > 0 ? 'Transaksi Berhasil' : 'Transaksi Gagal',
        products: productOrder.map(product => {
          const { price: priceProduct } = product
          return {
            ...product,
            price: formatRupiah(priceProduct, 'Rp. ')
          }
        })
      }
    })
  }
}
```



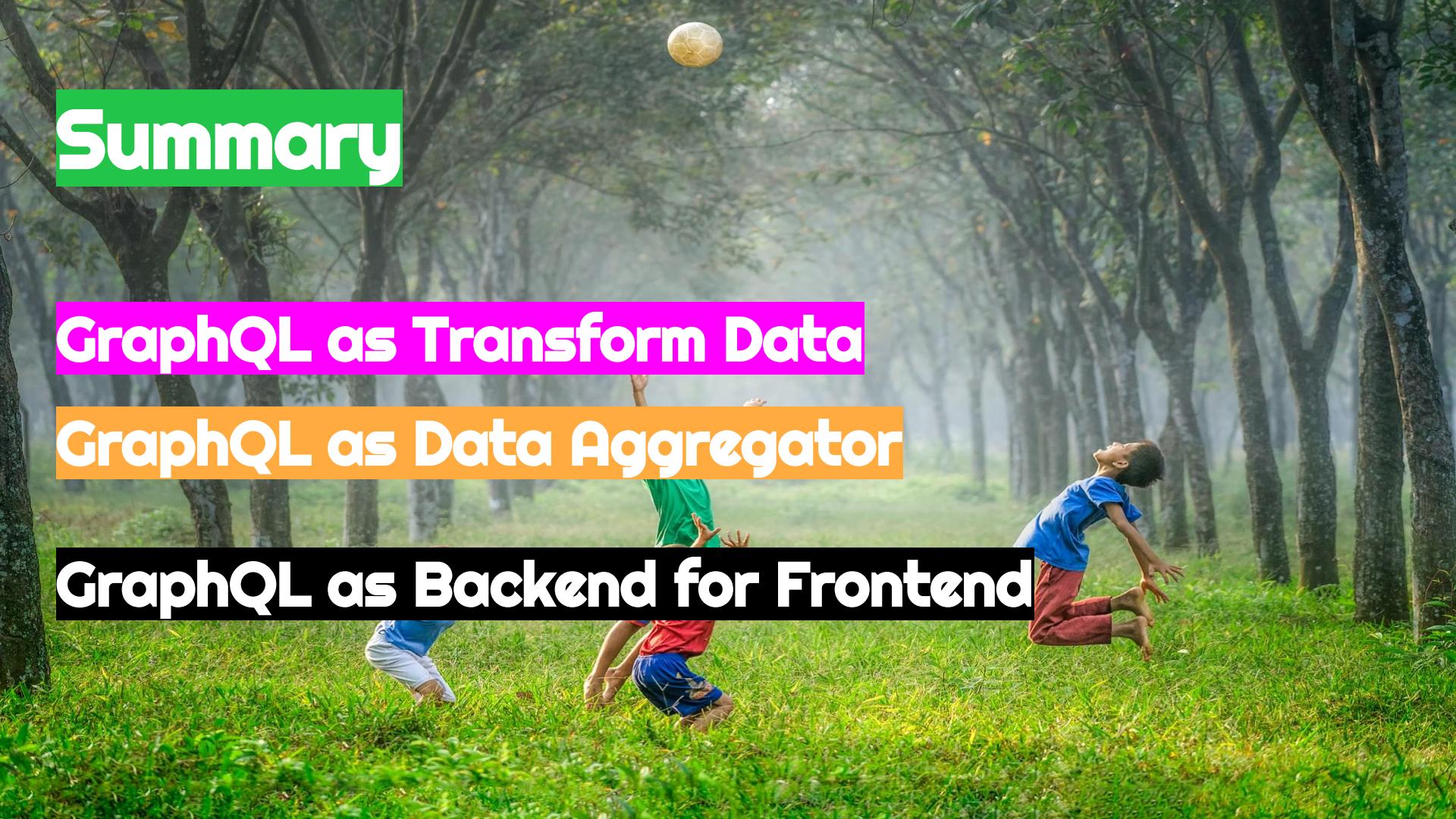
```
{  
    "data": {  
        "orders": [  
            {  
                "id": 1,  
                "invoice": "INV/20190611/XIX/VI/326518771",  
                "status": "Transaksi Gagal",  
                "products": [  
                    {  
                        "name": "Dispenser sharp SWD-73EHL-BK",  
                        "price": "Rp. 2.772.795",  
                        "imgSrc": "https://xxx.cdn.custom/image/v1/p/231/product_m_thumbnail/mobile"  
                    }  
                ],  
                "id": 2,  
                "invoice": "INV/20190523/XIX/V/319772202",  
                "status": "Transaksi Berhasil",  
                "products": [  
                    {  
                        "name": "Bracket TV 32 Inch plus pasang 24 Jam Jadetabek",  
                        "price": "Rp. 350.875",  
                        "imgSrc": "https://xxx.cdn.custom/image/v1/p/231/product_m_thumbnail/mobile"  
                    }  
                ]  
            }  
        ]  
    }  
}
```

Summary

GraphQL as Transform Data

GraphQL as Data Aggregator

GraphQL as Backend for Frontend



Thank you!

