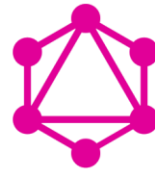


# Period 3 GraphQL



# GraphQL

Note: This description is too big for a single exam-question. It will be divided up into separate questions for the exam

## Explain shortly about GraphQL, its purpose and some of its use cases

GraphQL er udviklet af Facebook. Selve bruge af GraphQL er open-source.

Hvad er smart ved GraphQL?

- Der er kun 1 endpoint.
- Data fetching: Under / Over.
- Brugen af mobiltelefoner blev langt mere omfattende. GraphQL er langt mere effektivt.

## Explain some of the Server Architectures that can be implemented with a GraphQL backend

GraphQL kan man bruge som en ydre facade på en backend. Eller forbinde GraphQL direkte med en database.

## What is meant by the terms over- and under-fetching in GraphQL, compared to REST

- **Over fetching:** Man henter f.eks. alle informationer tilknyttet en konto. Selvom dataen ikke bliver brugt på nuværende side bruger den på.
- **Under fetching:** Man henter kun relevante data som der er behov for.

Hvad er der smart ved dette?

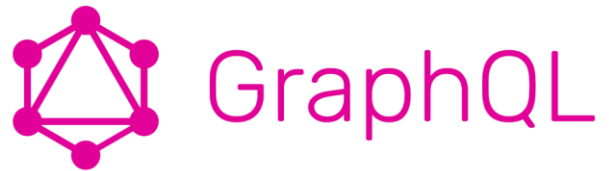
I nogle tilfælde vil over fetching være et problem hvis du henter data som skal tjekkes op mod forskellige andre data. Så du har en kæde af data du egentlig ikke kan gøre noget ved.

I andre tilfælde vil under fetching også være et problem, hvis du har data skal på gentagne gange skal bruges hele eller meget af tiden. Her bruger du altså flere API kald til din endpoint, og her risikerer du at ydeevnen eller performance bliver svækket.

## Explain shortly about GraphQL's type system and some of the benefits we get from this

GraphQL type system er SDL. (Schema Definition Language). Som navnet står for kan det føles som dobbeltarbejde at man skal definere de forskellige typer, dog får man også fuld kontrol og input validering.

**Explain shortly about GraphQL Schema Definition Language, and provide examples of schemas you have defined.**



Som jeg ser det, giver det en form for overblik over alle "endpoints" i vores api. Da man kan åbne og se præcise queries og mutations.

- Link til schema: [https://github.com/Erayous/Fullstack-Javascript/blob/main/P3-Handin%20\(period%203\)/Dag%201%20\(GraphQL%20Backend\)/startcode-main/src/graphql/schema.ts](https://github.com/Erayous/Fullstack-Javascript/blob/main/P3-Handin%20(period%203)/Dag%201%20(GraphQL%20Backend)/startcode-main/src/graphql/schema.ts)

**Provide examples demonstrating data fetching with GraphQL. You should provide examples both running in a Sandbox/playground and examples executed in an Apollo Client**

- Link til backend: [https://github.com/Erayous/Fullstack-Javascript/tree/main/P3-Handin%20\(period%203\)/Dag%201%20\(GraphQL%20Backend\)/startcode-main](https://github.com/Erayous/Fullstack-Javascript/tree/main/P3-Handin%20(period%203)/Dag%201%20(GraphQL%20Backend)/startcode-main)
- Link til frontend: [https://github.com/Erayous/Fullstack-Javascript/tree/main/P3-Handin%20\(period%203\)/Dag%202%2B3%20\(GraphQL%20Backend-Frontend\)/apolloClientWithLogin-main](https://github.com/Erayous/Fullstack-Javascript/tree/main/P3-Handin%20(period%203)/Dag%202%2B3%20(GraphQL%20Backend-Frontend)/apolloClientWithLogin-main)

**Provide a number of examples demonstrating; creating, updating and deleting with Mutations. You should provide examples both running in a Sandbox/playground and examples executed in an Apollo Client.**

- Link til backend: [https://github.com/Erayous/Fullstack-Javascript/tree/main/P3-Handin%20\(period%203\)/Dag%201%20\(GraphQL%20Backend\)/startcode-main](https://github.com/Erayous/Fullstack-Javascript/tree/main/P3-Handin%20(period%203)/Dag%201%20(GraphQL%20Backend)/startcode-main)
- Link til frontend: [https://github.com/Erayous/Fullstack-Javascript/tree/main/P3-Handin%20\(period%203\)/Dag%202%2B3%20\(GraphQL%20Backend-Frontend\)/apolloClientWithLogin-main](https://github.com/Erayous/Fullstack-Javascript/tree/main/P3-Handin%20(period%203)/Dag%202%2B3%20(GraphQL%20Backend-Frontend)/apolloClientWithLogin-main)

**Explain the Concept of a Resolver function, and provide a number of simple examples of resolvers you have implemented in a GraphQL Server.**

- Link til resolver: [https://github.com/Erayous/Fullstack-Javascript/blob/main/P3-Handin%20\(period%203\)/Dag%201%20\(GraphQL%20Backend\)/startcode-main/src/graphql/resolvers.ts](https://github.com/Erayous/Fullstack-Javascript/blob/main/P3-Handin%20(period%203)/Dag%201%20(GraphQL%20Backend)/startcode-main/src/graphql/resolvers.ts)

Resolverens job er at bruge vores definerede queries eller mutations, til at lave vores database kald, til vores apier.

**Explain the benefits we get from using a library like Apollo-client, compared to using the plain fetch-API**

- **Funktionen GQL:** Brug af vores queries/mutations.
- **Apollo-client:** Caching.

In an Apollo-based React Component, demonstrate how to perform GraphQL Queries, including:


- **Explain the purpose of ApolloClient and the ApolloProvider component**  
Apolloprovideren er den som giver os adgang til vores client gennem hele vores kode.

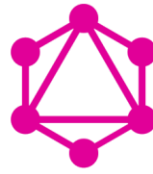
- Explain the purpose of the gql-function (imported from graphql-tag)

QGL er den som indeholder vores queries/mutation.

- Explain Custom Hooks used by your Client Code

useQuery & useMutation

-  Explain and demonstrate the caching features built into Apollo Client



# GraphQL

**In an Apollo-based React Component, demonstrate how to perform GraphQL Mutations?**

Link til components(findFriend): [https://github.com/Erayous/Fullstack-Javascript/blob/main/P3-Handin%20\(period%203\)/Dag%202%2B3%20\(GraphQL%20Backend-Frontend\)/apolloClientWithLogin-main/src/components/FindFriend.tsx](https://github.com/Erayous/Fullstack-Javascript/blob/main/P3-Handin%20(period%203)/Dag%202%2B3%20(GraphQL%20Backend-Frontend)/apolloClientWithLogin-main/src/components/FindFriend.tsx)

**Demonstrate and highlight important parts of a “complete” GraphQL-app using Express and MongoDB on the server-side, and Apollo-Client on the client.**

- Link til backend: [https://github.com/Erayous/Fullstack-Javascript/tree/main/P3-Handin%20\(period%203\)/Dag%201%20\(GraphQL%20Backend\)/startcode-main](https://github.com/Erayous/Fullstack-Javascript/tree/main/P3-Handin%20(period%203)/Dag%201%20(GraphQL%20Backend)/startcode-main)
- Link til frontend: [https://github.com/Erayous/Fullstack-Javascript/tree/main/P3-Handin%20\(period%203\)/Dag%202%2B3%20\(GraphQL%20Backend-Frontend\)/apolloClientWithLogin-main](https://github.com/Erayous/Fullstack-Javascript/tree/main/P3-Handin%20(period%203)/Dag%202%2B3%20(GraphQL%20Backend-Frontend)/apolloClientWithLogin-main)