

# Rails API + GraphQL

# 前提

## 以下のモデル、対応するテーブルが存在すること

- `Post` (id: integer, title: string, body: string)
- `Comment` (id: integer, content: string)

```
$ rails g model Post title:string body:string; rails g model Comment content:string post:references; rails db:migrate
```

- `Post:Comment`が 1:Nの関係であること

Post モデルに `has_many :comments, dependent: :destroy` を定義しましょう

# gem graphqlを追加

以下を追加

```
# Gemfile  
gem 'graphql'
```

```
$ bundle install
```

# graphqlのテンプレートを生成

graphql-rubyのboilerplateを追加

```
$ rails g graphql:install
```

## object typeを宣言

app/graphql/types/ 配下に作られます

```
$ rails g graphql:object Post; rails g graphql:object Comment
```

```
# app/graphql/types/post_type.rb
module Types
  class PostType < Types::BaseObject
    field :id, ID, null: false
    field :title, String, null: true
    field :body, String, null: true
    field :created_at, GraphQL::Types::ISO8601DateTime, null: false
    field :updated_at, GraphQL::Types::ISO8601DateTime, null: false

    field :comments, [Types::CommentType], null: false, description: 'post has many comments'
  end
end

# app/graphql/types/comment_type.rb
module Types
  class CommentType < Types::BaseObject
    field :id, ID, null: false
    field :content, String, null: true
    field :post_id, Integer, null: false
    field :created_at, GraphQL::Types::ISO8601DateTime, null: false
    field :updated_at, GraphQL::Types::ISO8601DateTime, null: false

    field :post, PostType, null: false
  end
end
```

# Queryを定義

```
module Types
  class QueryType < Types::BaseObject
    field :post, PostType, null: false do
      description 'find a post by id'
      argument :id, ID, required: true
    end

    field :posts, [PostType], null: true do
      description 'fetch all posts'
    end

    field :comment, CommentType, null: false do
      description 'find a comment by id'
      argument :id, ID, required: true
    end

    def post(id:)
      Post.find(id)
    end

    def posts
      Post.all.includes(:comments)
    end

    def comment(id:)
      Comment.find(id)
    end
  end
end
```

# fakerを利用してダミーデータを作成する

group :development, :test の中にfakerを書いてbundle install

```
# Gemfile
gem 'faker'
```

```
# db/seed.rb
10.times do
  post = Post.create!(title: Faker::Lorem.characters(number: 5), body: Faker::Lorem.characters(number: 10))
  10.times { post.comments.create!(content: Faker::Lorem.characters(number: 5)) }
end
```

実際にデータを作成する

```
$ rails db:seed
```



# GUIアプリでクエリを確認する

POSTリクエストでエンドポイントは `http://localhost:3000/graphql` でGraphQLのクエリを書きます。

今回はPostmanで検証してみました

POST http://localhost:3000/graphql

Send

Save

Params

Authorization

Headers (9)

Body

Pre-request Script

Tests

Settings

Cookies Code

none

form-data

x-www-form-urlencoded

raw

binary

GraphQL

No schema

QUERY

```
1 query {  
2   posts {  
3     id  
4     title  
5   }  
6 }  
7
```

GRAPHQL VARIABLES ⓘ

1

Body

Cookies

Headers (12)

Test Results



Status: 200 OK

Time: 518 ms

Size: 768 B

Save Response

Pretty

Raw

Preview

Visualize

JSON



```
1 {  
2   "data": {  
3     "posts": [  
4       {  
5         "id": "1",  
6         "title": "e187q"  
7       },  
8       {  
9         "id": "2",  
10        "title": "akfjz"  
11      },  
12      {  
13        "id": "3",  
14        "title": "0k3xq"  
15      },  
16    ]  
17   }  
18 }
```

**定義したQueryを試してみる**

- id 1 の post を検索

```
query {  
  post(id: 1) {  
    title  
  }  
}
```

```
{  
  "data": {  
    "post": {  
      "title": "e187q"  
    }  
  }  
}
```

- 全ての posts の title を検索

```
query {  
  posts {  
    title  
  }  
}
```

```
{
  "data": {
    "posts": [
      {
        "title": "e187q"
      },
      {
        "title": "akfjz"
      },
      {
        "title": "0k3xq"
      },
      {
        "title": "eym08"
      },
      {
        "title": "aja25"
      },
      {
        "title": "3bpjn"
      },
      {
        "title": "akjhs"
      },
      {
        "title": "ypydy"
      },
      {
        "title": "rwc1c"
      },
      {
        "title": "6cb08"
      }
    ]
  }
}
```

- id 1 の post に紐づく comment の id と content を全て取得

```
query {  
  post(id: 1) {  
    comments {  
      id  
      content  
    }  
  }  
}
```

```
, {
  "data": {
    "post": {
      "comments": [
        {
          "id": "1",
          "content": "b9pi8"
        },
        {
          "id": "2",
          "content": "oacut"
        },
        {
          "id": "3",
          "content": "twxs1"
        },
        {
          "id": "4",
          "content": "mkx8p"
        },
        {
          "id": "5",
          "content": "r1qtg"
        },
        {
          "id": "6",
          "content": "4d802"
        },
        {
          "id": "7",
          "content": "3g9c8"
        },
        {
          "id": "8",
          "content": "jl27h"
        },
        {
          "id": "9",
          "content": "2k5uw"
        },
        {
          "id": "10",
          "content": "bbdua"
        }
      ]
    }
  }
}
```



# Mutation

データを投稿する、更新、削除する

# データを作成する

# まず最初に...

\*継承先 `GraphQL::Schema::RelayClassicMutation` から、  
`::RelayClassicMutation` を削除しないとデータ投稿できませでした。

公式APIより引用

This class is part of a private API. You should avoid using this class if possible, as it may be removed or be changed in the future.

```
module Mutations
  # class BaseMutation < GraphQL::Schema::RelayClassicMutation
  class BaseMutation < GraphQL::Schema::Mutation
    null false
  end
end
```

## Post作成します

```
$ rails g graphql:mutation create_post
```

```
# app/graphql/mutations/create_post.rb
module Mutation
  class CreatePost < BsseMutation
    argument :title, String, required: true
    argument :body, String, required: true

    type Types::PostType

    def resolve(title: nil, body: nil)
      Post.create!(description: description, body: body)
    end
  end
end
```

```
# app/graphql/types/mutation_type.rb
module Types
  class MutationType < Types::BaseObject
    field :create_post, mutation: Mutations::CreatePost
  end
end
```

# 実際にデータを作成

```
mutation {  
  createPost(  
    title: "GraphQL",  
    body: "A query language for your API"  
  ) {  
    id  
    title  
    body  
  }  
}
```

```
{  
  "data": {  
    "createPost": {  
      "id": "11",  
      "title": "GraphQL",  
      "body": "A query language for your API"  
    }  
  }  
}
```

## Commentを作成します

```
$ rails g graphql:mutation create_comment
```

```
# app/graphql/mutations/create_comment.rb
module Mutations
  class CreateComment < BaseMutation
    argument :content, String, required: true
    argument :post_id, Integer, required: true

    type Types::CommentType

    def resolve(content: nil, post_id: nil)
      Comment.create!(content: content, post_id: post_id)
    end
  end
end
```

```
# app/graphql/types/mutation_type.rb
module Types
  class MutationType < BaseObject
    field :create_post, mutation: Mutations::CreatePost
    field :create_comment, mutation: Mutations::CreateComment
  end
end
```



# 実際にデータを作成

```
mutation {  
  createComment(  
    content: "Rails API モードでGraphQLを勉強中",  
    postId: 1  
  ) {  
    id  
    content  
    postId  
  }  
}
```

```
{  
  "data": {  
    "createComment": {  
      "id": "101",  
      "content": "Rails API モードでGraphQLを勉強中",  
      "postId": 1  
    }  
  }  
}
```

# データを更新する

## Postを更新します

```
$ rails g graphql:mutation update_post
```

```
# app/graphql/mutations/update_post.rb
module Mutations
  class UpdatePost < BaseMutation
    argument :id, Integer, required: true
    argument :title, String, required: false
    argument :body, String, required: false

    type Types::PostType

    def resolve(id:, **attributes)
      Post.find(id).tap { |post| post.update!(attributes) }
    end
  end
end
```

update!ではtrue or errorが戻り値となります。  
インスタンスをリターンしたいのでtapを利用しています。

```
module Types
  class MutationType < BaseObject
    field :create_post, mutation: Mutations::CreatePost
    field :create_comment, mutation: Mutations::CreateComment
    field :update_post, mutation: Mutations::UpdatePost
  end
end
```

以下のクエリで取得できたデータを更新してみます。

```
query { post(id: 1) { title body} }
```

```
{  
  "data": {  
    "post": {  
      "title": "GraphQL",  
      "body": "A query language for your API"  
    }  
  }  
}
```

# 実際にデータを更新

```
mutation {  
  updatePost(  
    id: 1  
    title: "Rails API with GraphQL"  
    body: "study mutation"  
  ) {  
    id  
    title  
    body  
  }  
}
```

```
{  
  "data": {  
    "updatePost": {  
      "id": "1",  
      "title": "Rails API with GraphQL",  
      "body": "study mutation"  
    }  
  }  
}
```

## Commentを更新する

```
$ rails g graphql:mutation update_comment
```



```
# app/graphql/mutations/update_comment.rb
module Mutations
  class UpdateComment < BaseMutation
    argument :id, Integer, required: true
    argument :content, String, required: false

    type Types::CommentType

    def resolve(id:, **attributes)
      Comment.find(id).tap { |comment| comment.update!(attributes) }
    end
  end
end
```

```
module Types
  class MutationType < BaseObject
    field :create_post, mutation: Mutations::CreatePost
    field :update_post, mutation: Mutations::UpdatePost

    field :create_comment, mutation: Mutations::CreateComment
    field :update_comment, mutation: Mutations::UpdateComment
  end
end
```

以下のクエリで取得できたデータを更新してみます。

```
query { comment(id: 101) { content } }
```

```
{
  "data": {
    "comment": {
      "content": "Rails API モードでGraphQLを勉強中"
    }
  }
}
```

## 実際にデータを更新

```
mutation {  
  updateComment(id: 101 content: "please tell me how to update data by mutation") {  
    id  
    content  
  }  
}
```

```
{  
  "data": {  
    "updateComment": {  
      "id": "101",  
      "content": "please tell me how to update data by mutation"  
    }  
  }  
}
```

# データの削除する

**Postを削除します**

## 実際にデータを削除

```
mutation { destroyPost(id: 7) { title } }
```

```
{  
  "data": {  
    "destroyPost": {  
      "title": "ta05v"  
    }  
  }  
}
```

モデルに `dependent: :destroy` の設定があるので、アソシエーションで紐づいている comment10件も削除されました。

## terminal

```
Started POST "/graphql" for ::1 at 2021-01-31 14:47:46 +0900
Processing by GraphQLController#execute as */*
Parameters: {"query"=>"mutation {\n  destroyPost(id: 7) { title }\n}\n", "graphql"=>"{"query"=>"mutation {\n  destroyPost(id: 7) { title }\n}\n"}"}
Post Load (0.3ms) SELECT "posts".* FROM "posts" WHERE "posts"."id" = ? LIMIT ? [["id", 7], ["LIMIT", 1]]
↳ app/graphql/mutations/destroy_post.rb:8:in `resolve'
(0.1ms) begin transaction
↳ app/graphql/mutations/destroy_post.rb:8:in `resolve'
Comment Load (0.3ms) SELECT "comments".* FROM "comments" WHERE "comments"."post_id" = ? [["post_id", 7]]
↳ app/graphql/mutations/destroy_post.rb:8:in `resolve'
Comment Destroy (41.2ms) DELETE FROM "comments" WHERE "comments"."id" = ? [["id", 61]]
↳ app/graphql/mutations/destroy_post.rb:8:in `resolve'
Comment Destroy (0.2ms) DELETE FROM "comments" WHERE "comments"."id" = ? [["id", 62]]
↳ app/graphql/mutations/destroy_post.rb:8:in `resolve'
Comment Destroy (0.1ms) DELETE FROM "comments" WHERE "comments"."id" = ? [["id", 63]]
↳ app/graphql/mutations/destroy_post.rb:8:in `resolve'
Comment Destroy (0.1ms) DELETE FROM "comments" WHERE "comments"."id" = ? [["id", 64]]
↳ app/graphql/mutations/destroy_post.rb:8:in `resolve'
Comment Destroy (0.2ms) DELETE FROM "comments" WHERE "comments"."id" = ? [["id", 65]]
↳ app/graphql/mutations/destroy_post.rb:8:in `resolve'
Comment Destroy (0.1ms) DELETE FROM "comments" WHERE "comments"."id" = ? [["id", 66]]
↳ app/graphql/mutations/destroy_post.rb:8:in `resolve'
Comment Destroy (0.1ms) DELETE FROM "comments" WHERE "comments"."id" = ? [["id", 67]]
↳ app/graphql/mutations/destroy_post.rb:8:in `resolve'
Comment Destroy (0.1ms) DELETE FROM "comments" WHERE "comments"."id" = ? [["id", 68]]
↳ app/graphql/mutations/destroy_post.rb:8:in `resolve'
Comment Destroy (0.1ms) DELETE FROM "comments" WHERE "comments"."id" = ? [["id", 69]]
↳ app/graphql/mutations/destroy_post.rb:8:in `resolve'
Comment Destroy (0.1ms) DELETE FROM "comments" WHERE "comments"."id" = ? [["id", 70]]
↳ app/graphql/mutations/destroy_post.rb:8:in `resolve'
Post Destroy (0.1ms) DELETE FROM "posts" WHERE "posts"."id" = ? [["id", 7]]
↳ app/graphql/mutations/destroy_post.rb:8:in `resolve'
(0.7ms) commit transaction
↳ app/graphql/mutations/destroy_post.rb:8:in `resolve'
Completed 200 OK in 174ms (Views: 0.2ms | ActiveRecord: 43.9ms | Allocations: 14865)
```



**Commentを削除します**

# 実際にデータを削除

```
mutation { destroyComment(id: 5) { title } }
```

```
{  
  "data": {  
    "destroyComment": {  
      "title": "f3lcz"  
    }  
  }  
}
```

## terminal

```
Started POST "/graphql" for ::1 at 2021-01-31 14:51:44 +0900  
Processing by GraphQLController#execute as */*  
Parameters: {"query"=>"mutation {\n  destroyComment(id: 79) { content }\n}\n", "graphql"=>{"query"=>"mutation {\n  destroyComment(id: 79) { content }\n}\n"}}  
Comment Load (0.2ms) SELECT "comments".* FROM "comments" WHERE "comments"."id" = ? LIMIT ? [["id", 79], ["LIMIT", 1]]  
↳ app/graphql/mutations/destroy_comment.rb:8:in `resolve'  
  (0.1ms) begin transaction  
↳ app/graphql/mutations/destroy_comment.rb:8:in `resolve'  
Comment Destroy (0.4ms) DELETE FROM "comments" WHERE "comments"."id" = ? [["id", 79]]  
↳ app/graphql/mutations/destroy_comment.rb:8:in `resolve'  
  (0.7ms) commit transaction  
↳ app/graphql/mutations/destroy_comment.rb:8:in `resolve'  
Completed 200 OK in 22ms (Views: 0.3ms | ActiveRecord: 1.4ms | Allocations: 3386)
```

MutationでCRUD処理に当たる  
CUDをできました！

