**GraphQL**  
  
**Tip:** Creating a sample nodeJS Project Using VSCode  
**Tip**: Querying the data  
Tip: Exposing the GUI for graphiql  
Tip: Fetching MongoDB Data with graphql  
**Tip**: Project MgmtApp – Brad Traversity  
  
Extensions to add to VSCode for GraphQL  
<https://marketplace.visualstudio.com/items?itemName=GraphQL.vscode-graphql>

Youtube Link  
<https://youtu.be/Dr2dDWzThK8>

REST vs GraphQL (In terms of how it handles routes/endpoints)  
  
In traditional REST, your endpoints would look like:  
  
/users  
/travels  
/books   
etc…  
  
In Graphql you only have “**one**” endpoint  
  
/graphql  
  
Sample Data  
To get some fake data to work with, you can go to a website called  
<https://www.mockaroo.com/>

Graphical user interface

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I changed the type to JSON  
  
Add the VSCode Extensions to your VSCODE  
  
Text

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**Tip:** Creating a sample nodeJS Project Using VSCode  
First I create a directory called GraphqlProject  
I download the fake data and add it to my directory  
Then to initialize the project, I open a new terminal, type   
npm init  
  
I just follow the prompts, enter in generic information  
  
Text

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This will create my package.json file for my dependencies  
  
Text

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Next, type the following command to install expressjs  
npm install express

Text

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Next I create an index.js file and add the following lines of code to it  
  
Text

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If you go to browser  
http://localhost:6500/  
You will get a   
Cannot GET /  
This is because we are not creating a traditional REST api, but we still need to have some sort of service running to expose a port.  
  
Next, install the next two packages at the terminal  
npm i graphql  
npm install --save express-graphql --force  
  
Text

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As you can see, as you install packages, it updates your package.json file  
  
Graphql Concepts  
  
Mutations: This is the same as CRUD (Create, Read,Update, Delete)  
Queries: How you fetch the data you need  
  
Object types, before we create our schema, we need import the different object types  
Text

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**Creating the type(s):**  
In Graphql, you interact with your data by first defining your type(s)  
Text

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**Creating the querie(s)**   
As explained above, you create your mutations (queries as coded below)  
  
Text

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**Creating the mutation**Also explained before, you create (CRUD OPERATIONS) via “Mutations”  
Text

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Next, let’s fire up our graphql server  
Enter the command at the terminal  
  
node index.js  
  
Then in the browser type:

Tip: Exposing the GUI for graphiql  
<http://localhost:6500/graphql>

When you do this:

Graphical user interface, text, website

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You get a graphical UI to view your results of your query against  
  
This is surfaced up via this entry:  
A screenshot of a computer

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This is like using a API test like POSTMAN or any other API tester

**Tip**: Querying the data

To fetch some data, just type below

Graphical user interface, application

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As you type your information inside of the query, it will autocomplete the query you defined in your code.  
Then just hit the run button and you will see the results in the right pane  
  
Graphical user interface, application, Word

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To perform a mutation:  
Graphical user interface, text, application, email

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Graphical user interface, text, application

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Run the query:

Graphical user interface, text, application

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And you will see the item added to the array:  
Text

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IMPORTANT: The user was added to an “in-memory” instance of the MOCK\_DATA file, the actual .json file was not modified  
  
To clean up the project structure:  
Graphical user interface, text, application

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Rename index.js on our root to “Server.js”  
  
We place our types inside of the typdefs folder  
We place our mutations and queries in the index.js file under the schema folder  
  
Then we execute  
node server.js  
  
Text

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And everything works:

Graphical user interface, text, application

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Tip: Fetching MongoDB Data with graphql  
It was super easy, I just leveraged my code from my assetmgmt service using mongo express, connected to mongoDB, created my models and schema for graphql, then just did a mongodb call to grab travel records. The resolve function in your RootQuery method where you create your queries takes the data argument as it’s return.  
A screenshot of a computer

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Graphical user interface, text, application

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Graphical user interface, text

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Graphical user interface, text

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AND IT WORKS!!!!

**Tip**: Project MgmtApp – Brad Traversity  
<https://www.youtube.com/watch?v=BcLNfwF04Kw>  
  
This is from the three hour video above that outlines the building of a MERN stack project using reactjs, graphql, mongodb atalas  
  
(the following command creates the package.json file and fills in all of the defaults for you)  
npm init -y   
  
Install the packages below  
npm i express express-graphql graphql mongoose cors colors –force  
  
Nodemon below is so we don’t have keep restarting and want see changes right away  
dotenv is so we can use environment variables  
npm i -D nodemon dotenv --force  
  
Git Repo  
<https://github.com/lionel5116/ProjectMgmtAppGraphql.git>