Testing GraphQL in JavaScript Applications

FOSDEM 2019
03/02/2019

What is this about?

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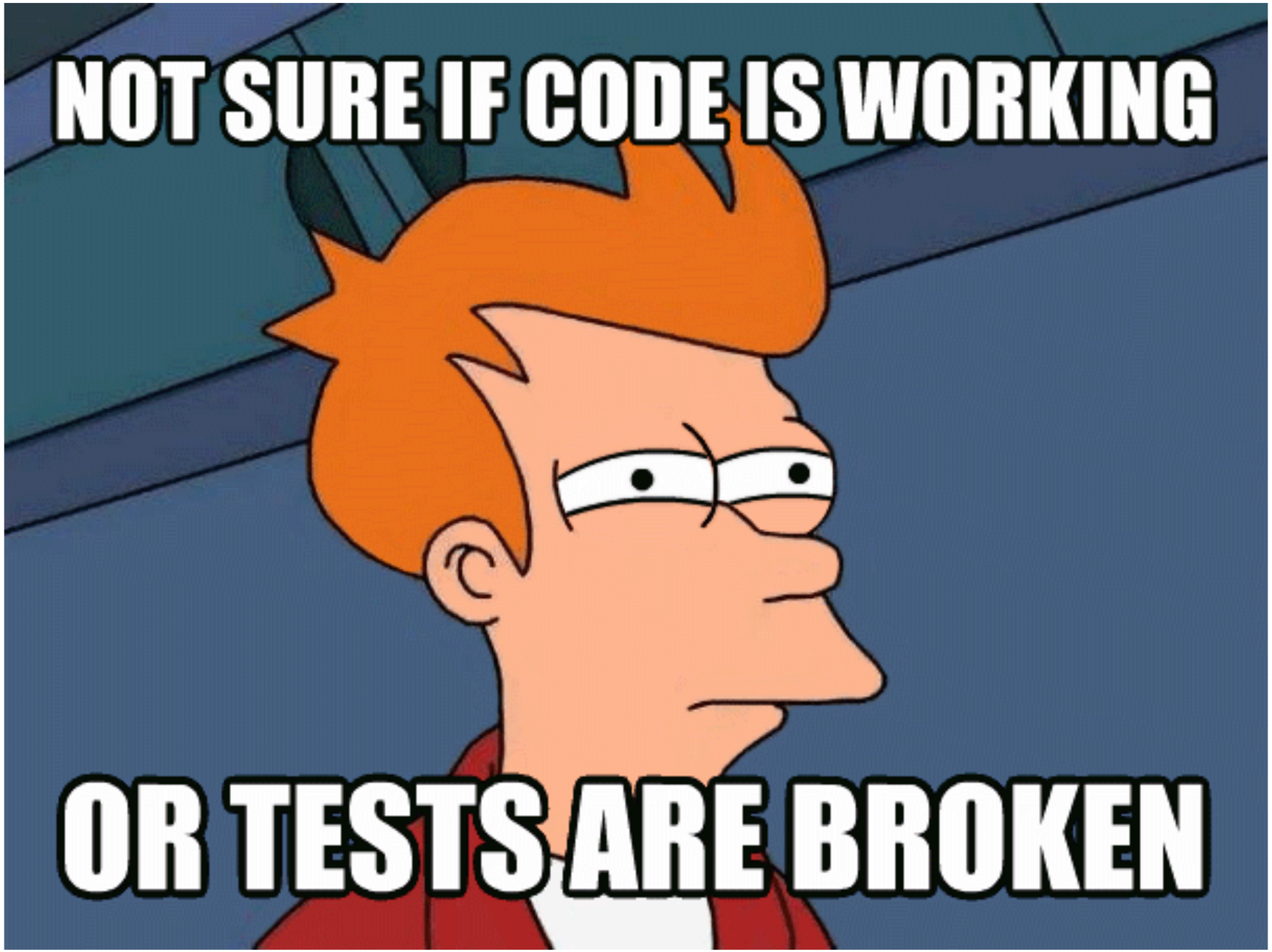
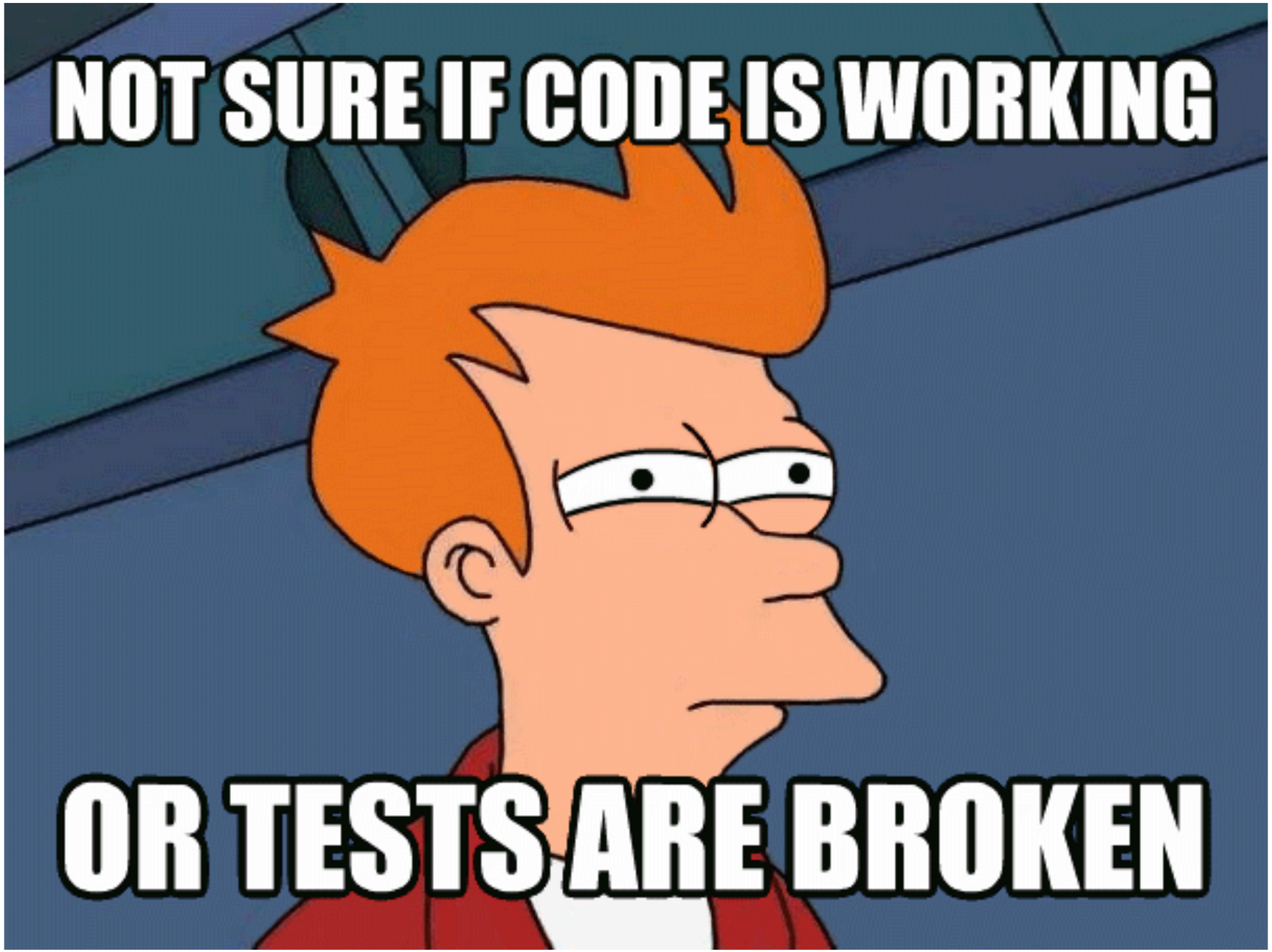

NOT SURE IF CODE IS WORKING
OR TESTS ARE BROKEN


NOT SURE IF CODE IS WORKING
OR TESTS ARE BROKEN

Who Am I?

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Roy Derks

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#javascriptEverywhere

#reactjs #ReactNative #GraphQL

Who is this for?

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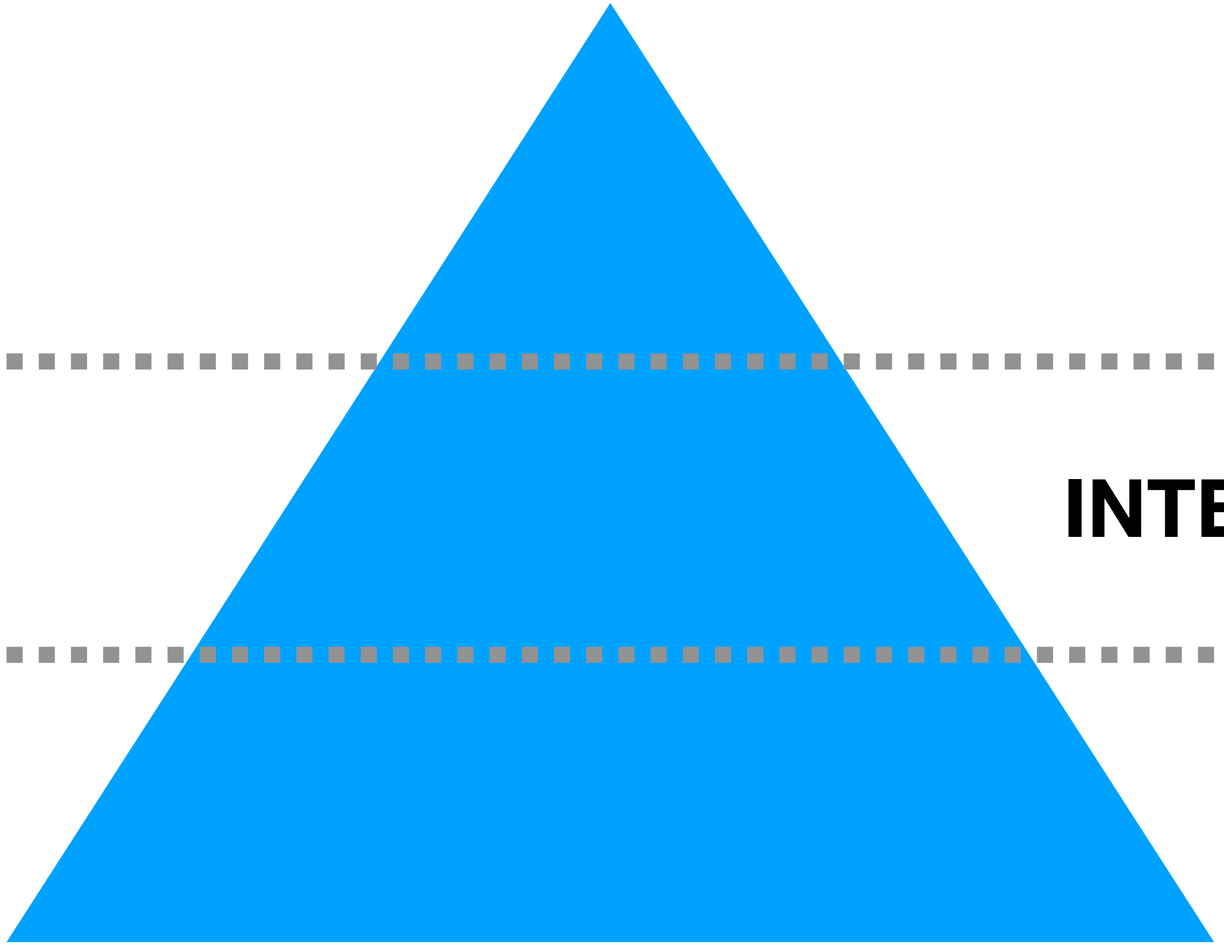
Who is this for?



E2E TESTS

INTEGRATION TESTS

UNIT TESTS

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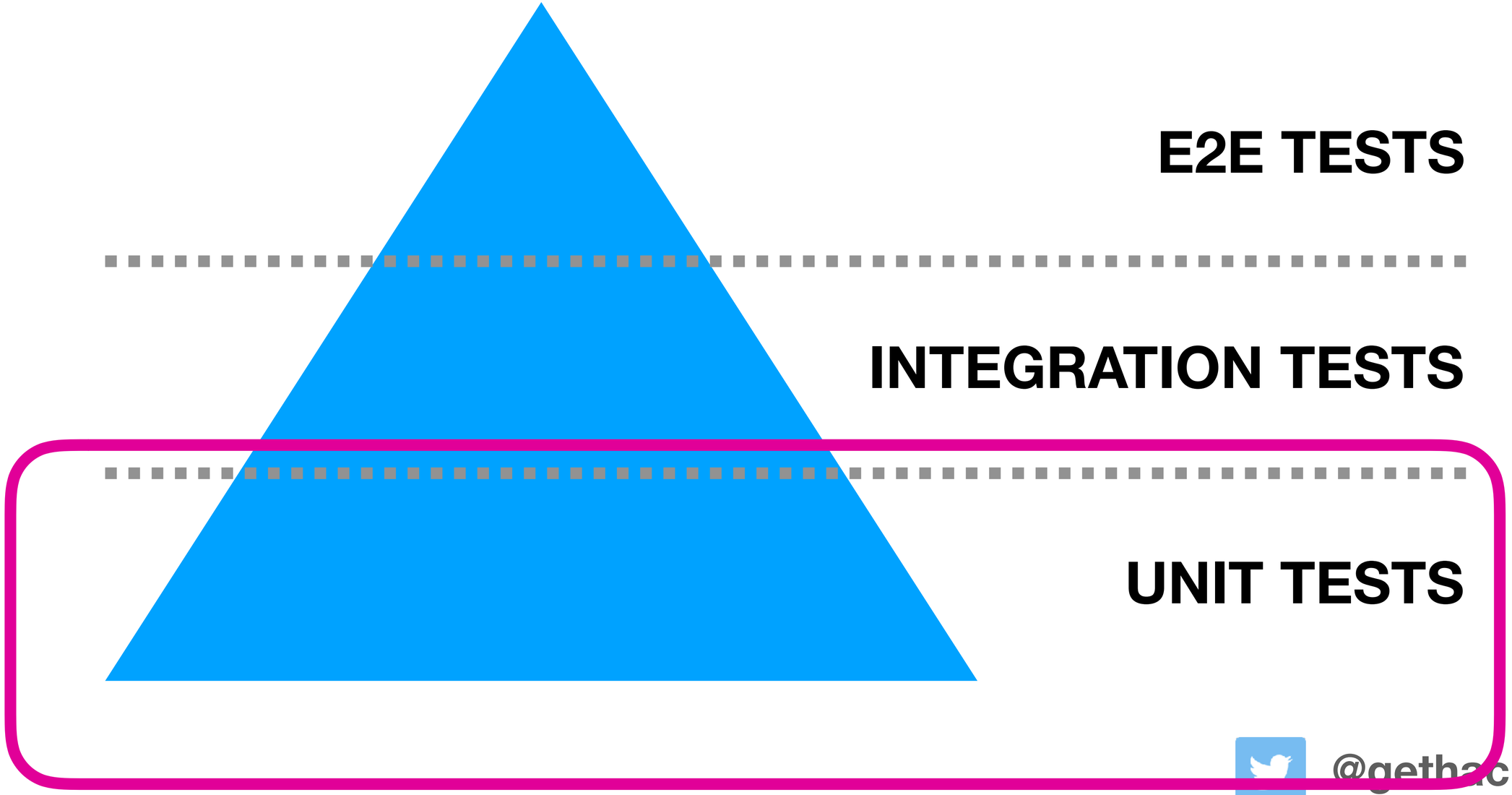
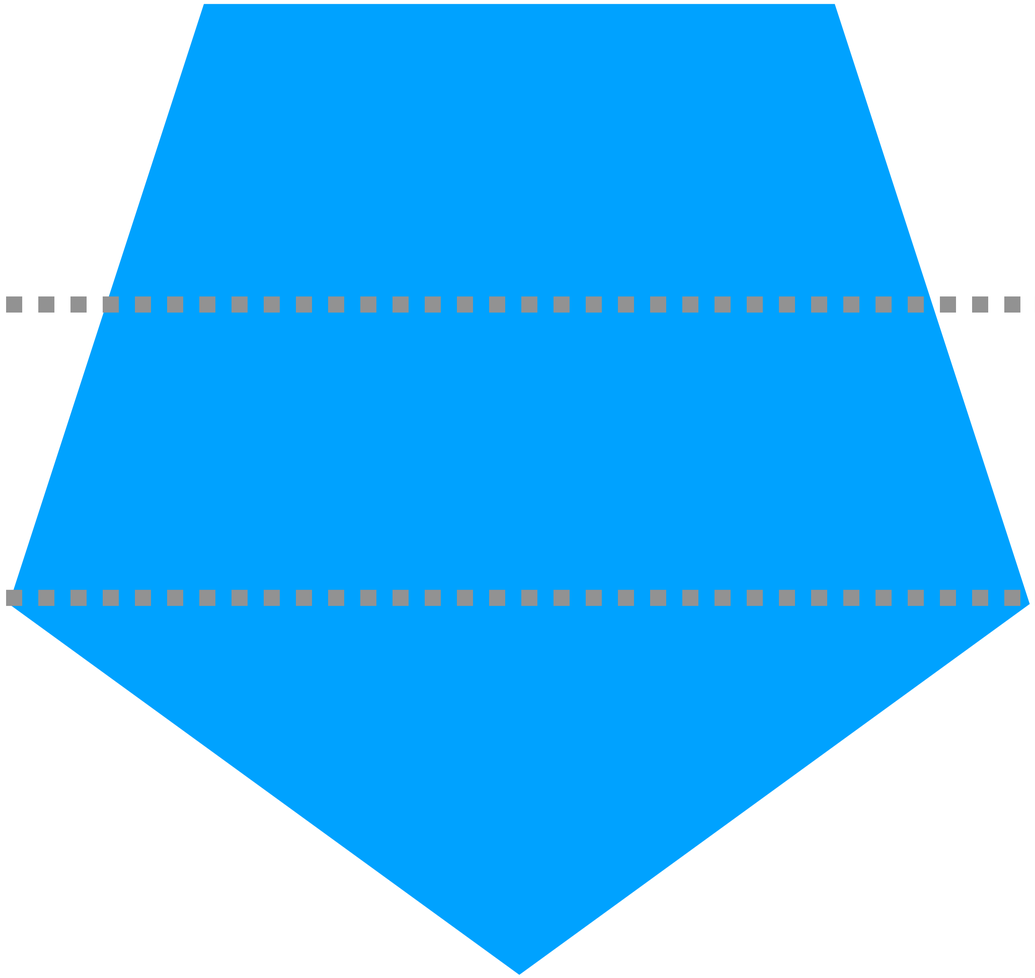
Who is this for?



Who is this for?



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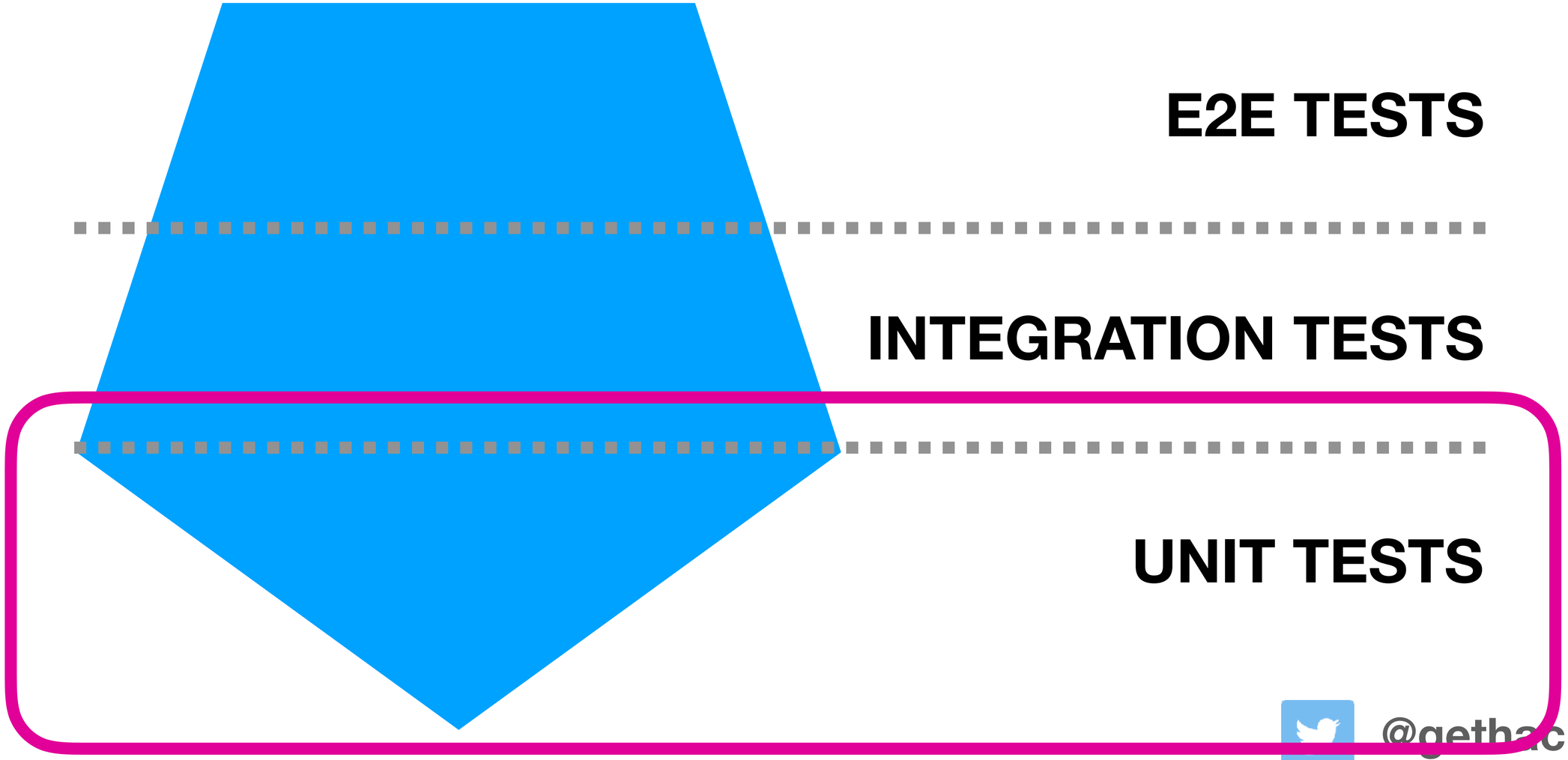

Why write tests?

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Check if our code behaves as expected

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Check if our code handles errors and edge cases correctly

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Check if our code behaves as expected

Check if our code handles errors and edge cases correctly

Check if our syntax is handled correctly

Testing JavaScript

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Enzyme

Testing JavaScript

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Enzyme

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Enzyme

Testing JavaScript

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Let’s look at an example

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Let’s look at an example

```
type Product {
  id: Int!
  title: String!
  thumbnail: String!
  reviews: Review
  offers: [Offer]
}
type Review {
  productId: Int!
  count: Int
  average: Float
}
type Offer {
  productId: Int!
  reseller: String
  price: Float
}
```

```
type Query {
  products: [Product]
  product(id: Int!): Product
}
type Mutation {
  addOffer(productId: Int!, reseller: String, price: Float): Offer
}
```

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Let's look at an example

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type Product {
  id: Int!
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type Review {
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Query

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Query

```
type Query {
  products: [Product]
  product(id: Int!): Product
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  addOffer(productId: Int!, reseller: String, price: Float): Offer
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```

Mutation

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Test Components

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Testing Component

```
import TestRenderer from "react-test-renderer";

it("should render without error", () => {
  TestRenderer.create(
    <Products />
  );
});
```

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Testing Component

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import TestRenderer from "react-test-renderer";

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```

Invariant Violation: Could not find "client" in the context of Query or as passed props. Wrap the root component in an <ApolloProvider>

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Testing Component

```
import { ApolloProvider } from "react-apollo";
import ApolloClient from "apollo-boost";
import TestRenderer from "react-test-renderer";

const client = new ApolloClient({
  uri: "<CLIENT_URL>"
});

it("should render without error", () => {
  TestRenderer.create(
    <ApolloProvider client={client}>
      <Products />
    </ApolloProvider>
  );
});
```

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Testing Component

```
import { ApolloProvider } from "react-apollo";
import ApolloClient from "apollo-boost";
import TestRenderer from "react-test-renderer";

const client = new ApolloClient({
  uri: "<CLIENT_URL>"
});

it("should render without error", () => {
  TestRenderer.create(
    <ApolloProvider client={client}>
      <Products />
    </ApolloProvider>
  );
});
```

Tests against “live” data

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MockedProvider

```
import TestRenderer from "react-test-renderer";
import { MockedProvider } from "react-apollo/test-utils";

it("should render without error", () => {
  TestRenderer.create(
    <MockedProvider mocks={[]}>
      <Products />
    </MockedProvider>
  );
});
```

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Tests against mock data

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MockedProvider

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it("should render without error", () => {
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    <MockedProvider mocks={[]}>
      <Products />
    </MockedProvider>
  );
});
```

```
{
  "request": {
    "query": "<QUERY>",
    "variables": { /* variables */ }
  },
  "result": {
    "data": {
      /* result */
    }
  }
}
```

Tests against mock data

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Test Schemas

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Test Schemas

easygraphql-tester

```
import EasygraphqlTester from "easygraphql-tester";

it("Should be a valid query", () => {
  schema = '<GRAPHQL_SCHEMA>';
  tester = new EasygraphqlTester(schema);

  tester.test(true, '<QUERY>');
});

it("Should be a valid mutation", () => {
  schema = '<GRAPHQL_SCHEMA>';
  tester = new EasygraphqlTester(schema);

  tester.test(true, '<MUTATION>', { /* variables */ });
});
```

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Test Schemas

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Tests schema directly

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  schema = '<GRAPHQL_SCHEMA>';
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  tester.test(true, '<MUTATION>', { /* variables */ });
});
```

Tests schema directly

Test with (in)valid fields

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Test Schemas

```
import EasygraphqlTester from "easygraphql-tester";

it("Should return valid data types", () => {
  const { products } = tester.mock(GET_PRODUCTS_QUERY);

  expect(Array.isArray(products)).toBe(true);
});
```

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Test Schemas

Tests schema mocks

```
import EasygraphqlTester from "easygraphql-tester";

it("Should return valid data types", () => {
  const { products } = tester.mock(GET_PRODUCTS_QUERY);

  expect(Array.isArray(products)).toBe(true);
});
```

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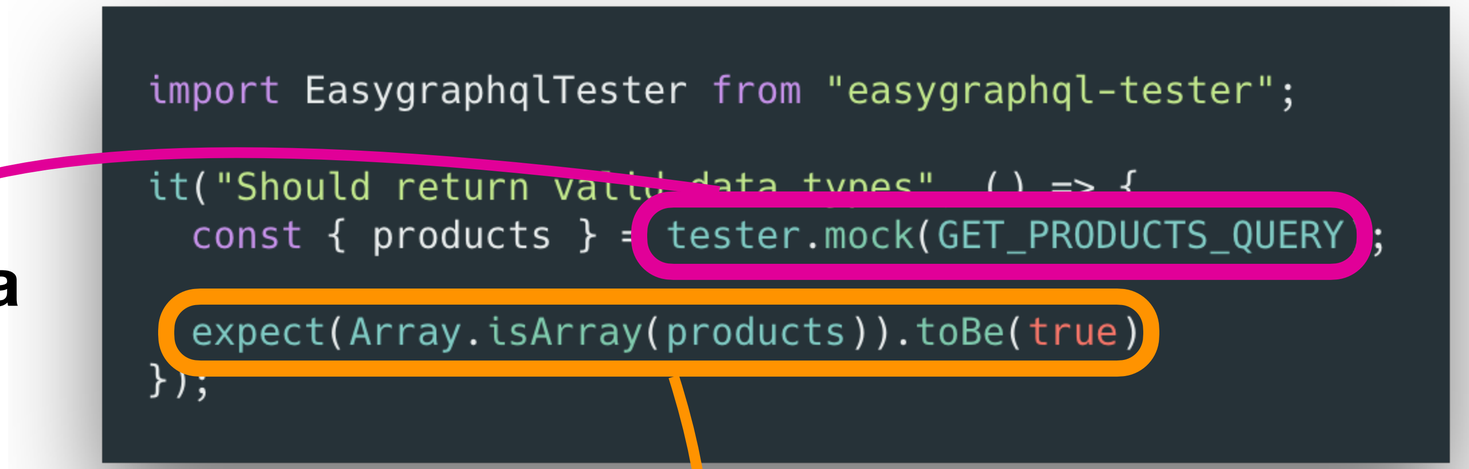
Test Schemas



Tests schema mocks

Test format of result

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https://github.com/royderks/
react-apollo-testing

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To summarise

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Want to learn more?

 @gethackteam **#javascriptEverywhere**

https://www.apollographql.com/

https://easygraphql.com/