

Mongodb Full stack application

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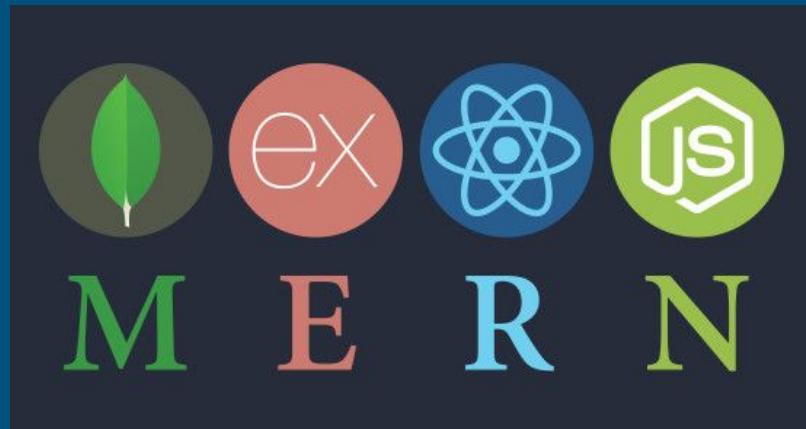


Code

Full code is:

https://github.com/robin22d/ToDos_hogan

Popular Application Stacks

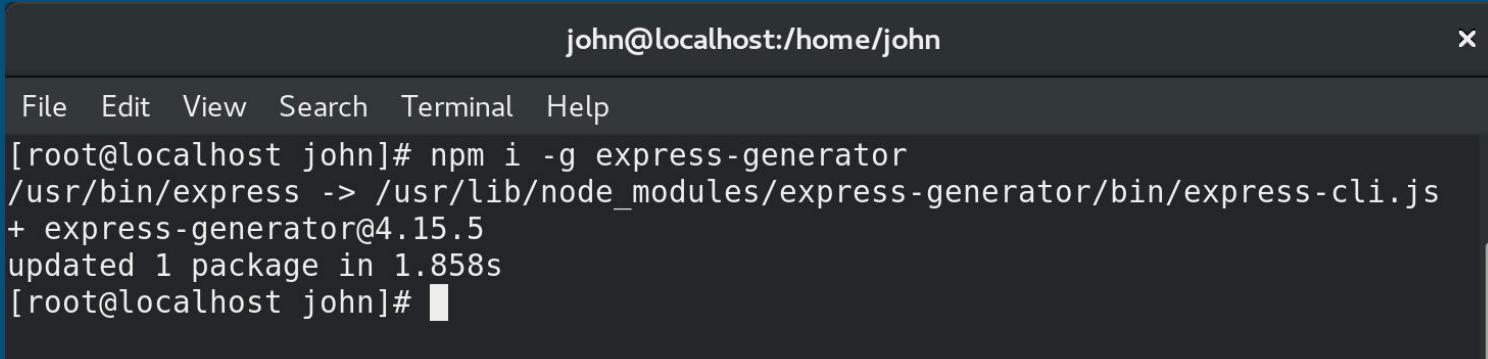


How does it work?



Install express-generator

- Command:
 - `npm i -g express-generator`
 - ‘i’ means install
 - ‘-g’ means install globally



The screenshot shows a terminal window with a dark background and light-colored text. The title bar reads "john@localhost:/home/john". The menu bar includes "File", "Edit", "View", "Search", "Terminal", and "Help". The command entered was `npm i -g express-generator`. The output shows the package being installed from `/usr/bin/express` to `/usr/lib/node_modules/express-generator/bin/express-cli.js`, with version `+ express-generator@4.15.5`. It also indicates that 1 package was updated in 1.858 seconds. The prompt at the end is `[root@localhost john]#`.

```
john@localhost:/home/john
File Edit View Search Terminal Help
[root@localhost john]# npm i -g express-generator
/usr/bin/express -> /usr/lib/node_modules/express-generator/bin/express-cli.js
+ express-generator@4.15.5
updated 1 package in 1.858s
[root@localhost john]#
```

Create template app

- Command:
 - express -H {Name_of_your_app}
 - '-H' means use hogan as you view engine

```
john@localhost:~
```

```
File Edit View Search Terminal Help
[john@localhost ~]$ express -H ToDoApp
warning: option `--hogan' has been renamed to `--view=hogan'

create : ToDoApp
create : ToDoApp/package.json
create : ToDoApp/app.js
create : ToDoApp/public
create : ToDoApp/routes
create : ToDoApp/routes/index.js
create : ToDoApp/routes/users.js
create : ToDoApp/views
create : ToDoApp/views/index.hjs
create : ToDoApp/views/error.hjs
create : ToDoApp/bin
create : ToDoApp/bin/www
create : ToDoApp/public/javascripts
create : ToDoApp/public/stylesheets
create : ToDoApp/public/stylesheets/style.css

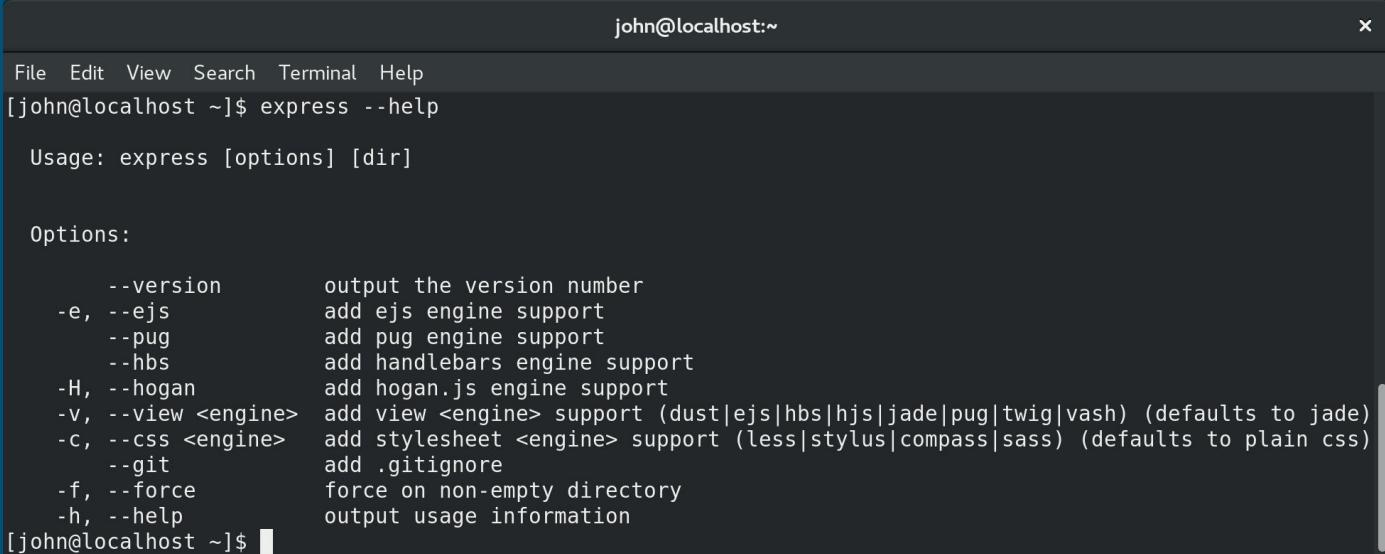
install dependencies:
$ cd ToDoApp && npm install

run the app:
$ DEBUG=todoapp:* npm start

create : ToDoApp/public/images
[john@localhost ~]$
```

Express

- These are the view engines that can be used.
- We will initially suing hogan but then switching to react or angular.



The screenshot shows a terminal window titled "john@localhost:~". The command [john@localhost ~]\$ express --help is run, displaying the usage and options for the express command. The usage is "Usage: express [options] [dir]". The options section lists various flags and their descriptions:

Option	Description
--version	output the version number
-e, --ejs	add ejs engine support
--pug	add pug engine support
--hbs	add handlebars engine support
-H, --hogan	add hogan.js engine support
-v, --view <engine>	add view <engine> support (dust ejs hbs hjs jade pug twig vash) (defaults to jade)
-c, --css <engine>	add stylesheet <engine> support (less stylus compass sass) (defaults to plain css)
--git	add .gitignore
-f, --force	force on non-empty directory
-h, --help	output usage information



Install node modules

- Cd to app
 - cd {your_app}
- Install node modules
 - npm install
 - This will install the dependencies that are in your package.json file.

```
john@localhost:~/ToDoApp
File Edit View Search Terminal Help
[john@localhost ~]$ cd ToDoApp/
[john@localhost ToDoApp]$ npm install
npm notice created a lockfile as package-lock.json. You should commit this file.
added 61 packages in 1.921s
[john@localhost ToDoApp]$ █
```



Add mongoose as a dependency

- Install mongoose
 - npm i -S mongoose
 - '-S' saves mongoose to your dependencies in your package.json

```
john@localhost
File Edit View Search Terminal Help
[john@localhost ToDoApp]$ npm i -s mongoose
+ mongoose@4.13.5
added 28 packages in 3.069s
[john@localhost ToDoApp]$
```

```
package.json - ToDoApp - Visual Studio Code
File Edit Selection View Go Debug Tasks Help
EXPLORER package.json
OPEN EDITORS package.json
TODOAPP
bin
node_modules
public
routes
views
app.js
package-lock.json
package.json
1
{
  "name": "todoapp",
  "version": "0.0.0",
  "private": true,
  "scripts": {
    "start": "node ./bin/www"
  },
  "dependencies": {
    "body-parser": "~1.18.2",
    "cookie-parser": "~1.4.3",
    "debug": "~2.6.9",
    "express": "~4.15.5",
    "hjs": "~0.0.6",
    "mongoose": "^4.13.5",
    "morgan": "~1.9.0",
    "serve-favicon": "~2.4.5"
  }
}
19
```



Check that it works

- Start the server
 - npm start
- As can be seen from the '/bin/www' folder the app is running locally on port: 3000 so go to:
 - <http://localhost:3000/>

```
john@localhost:~/ToDoApp
File Edit View Search Terminal Help
[john@localhost ToDoApp]$ npm start

> todoapp@0.0.0 start /home/john/todoApp
> node ./bin/www
```

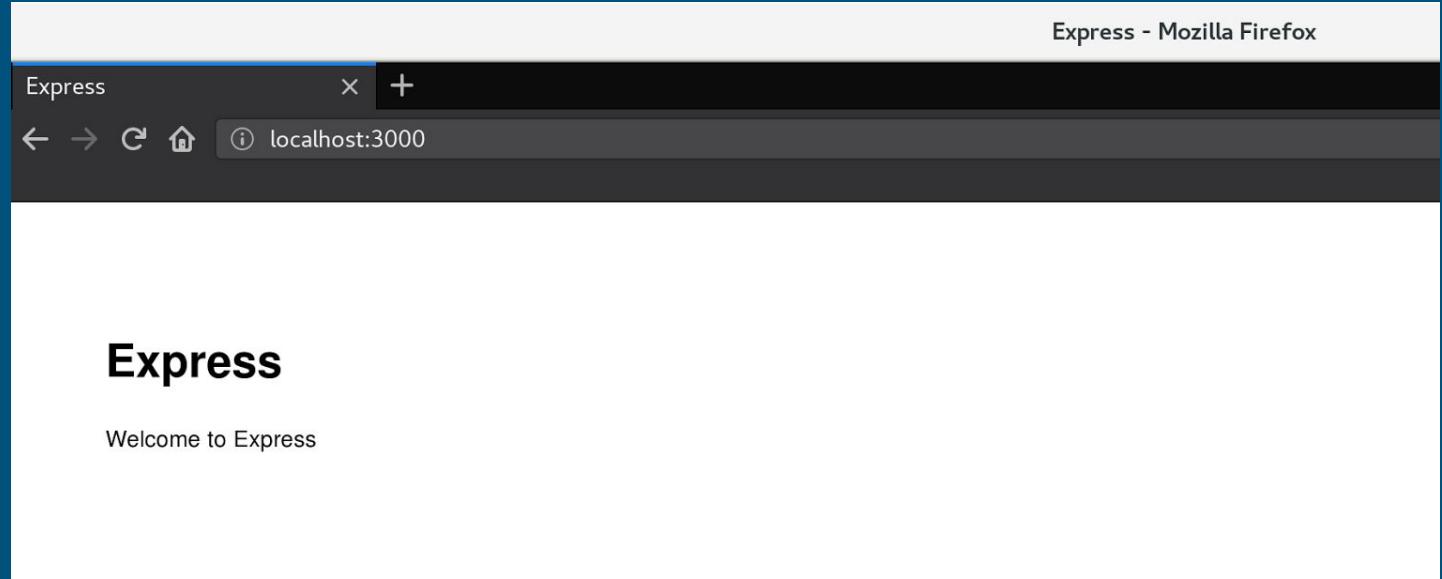
www - ToDoApp - Visual Studio Code

```
File Edit Selection View Go Debug Tasks Help
EXPLORER JS www x
OPEN EDITORS JS www bin
TODOAPP bin www
node_modules public routes views
JS app.js package-lock.json package.json
1 #!/usr/bin/env node
2
3 /**
4  * Module dependencies.
5 */
6
7 var app = require('../app');
8 var debug = require('debug')('todoapp:server');
9 var http = require('http');
10
11 /**
12  * Get port from environment and store in Express.
13 */
14
15 var port = normalizePort(process.env.PORT || '3000');
16 app.set('port', port);
17
18 /**
19  * Create HTTP server.
20 */
21
22 var server = http.createServer(app);
```



Check that it works

- Expresses template page should not be showing in the browser



Add mongoose to the server



- The mongoose driver will need to be added to the node server.

A screenshot of the Visual Studio Code interface. The title bar says "app.js - ToDos_hogan - Visual Studio Code". The menu bar includes File, Edit, Selection, View, Go, Debug, Tasks, and Help. The Explorer sidebar shows a project structure with files like "bin", "database", "node_modules", "public", "routes", "views", "LICENSE", "Mongodb Full stack a...", "package-lock.json", "package.json", and "ReadMe.md". The main editor area displays the following code:

```
app.js
1 var bodyParser = require('body-parser');
2 //Require mongoose
3 var mongoose = require('mongoose');
4
5 var index = require('./routes/index');
6 var users = require('./routes/users');
7 //Rout the call to the api.js page
8 var api = require('./routes/api');
9
10 var app = express();
11
12 var dbUrl = 'mongodb://localhost:27017/toDoDB'
13
14 //Create connection to mongodb server
15 mongoose.connect(dbUrl, {
16   useNewUrlParser: true
17 });
18
19 //On successful connection
20 mongoose.connection.on('connected', () => {
21   console.log("Connected to database ", config.database);
22 });
23
24 //Error created when connecting
25 mongoose.connection.on('error', (Error) => {
26   console.log("Database error ", Error);
27 });
28
29
30
31
```



Code

Line 10 of app.js

```
var mongoose = require('mongoose');
```

Lines 17-31 of app.js

```
//the name of the database after the /
var dbUrl = 'mongodb://localhost:27017/toDoDB'

//Create connection to mongodb server
mongoose.connect(dbUrl, {
  useNewUrlParser: true
});
//On successful connection
mongoose.connection.on('connected', () => {
  console.log("Connected to database ", config.database);
});
//Error created when connecting
mongoose.connection.on('error', (Error) => {
  console.log("Database error ", Error);
});
```



MongoDB

Start mongodb server

- To start mongo run the command
 - mongod

```
john@localhost:~  
File Edit View Search Terminal Help  
[john@localhost ~]$ mongod  
2017-12-02T17:11:51.614+0000 I CONTROL [initandlisten] MongoDB starting : pid=6  
922 port=27017 dbpath=/data/db 64-bit host=localhost.localdomain  
2017-12-02T17:11:51.614+0000 I CONTROL [initandlisten] db version v3.4.6  
2017-12-02T17:11:51.614+0000 I CONTROL [initandlisten] git version: c55eb86ef46  
ee7aede3b1e2a5d184a7df4bfb5b5  
2017-12-02T17:11:51.614+0000 I CONTROL [initandlisten] OpenSSL version: OpenSSL  
1.1.0g-fips 2 Nov 2017
```



MongoDB

Rerun the server

- Stop server
 - Ctrl + c
- Start server again
 - npm start

```
john@localhost:~/ToDoApp
File Edit View Search Terminal Help
[john@localhost ToDoApp]$ npm start
> todoapp@0.0.0 start /home/john/ToDoApp
> node ./bin/www
Connected to mongoose: mongodb://localhost/ToDoDB
```



Adding nodemon

- This will mean that you will not have to keep restarting the server.
 - `npm -i -g -D nodemon`
 - '-D' means save in dev dependencies
 - '-g' means so it can be accessed globally

```
john@localhost:~/ToDoApp
File Edit View Search Terminal Help
[john@localhost ToDoApp]$ npm i -D nodemon
npm [WARN] optional SKIPPING OPTIONAL DEPENDENCY: fsevents@1.1.3 (node_modules/fsevents):
npm [WARN] notsup SKIPPING OPTIONAL DEPENDENCY: Unsupported platform for fsevents@1.1.3: wanted {"os":"darwin","arch":"any"} (current: {"os":"linux","arch":"x64"})
+ nodemon@1.12.1
added 116 packages and updated 1 package in 4.943s
[john@localhost ToDoApp]$
```

```
package.json - todoapp
File Edit Selection View Go Debug Tasks Help
EXPLORER JS app.js {} package.json x
OPEN EDITORS JS app.js {} package.json
TODOAPP
  ▾ bin
  ▾ node_modules
  ▾ public
  ▾ routes
  ▾ views
  JS app.js
  {} package-lock.json
  {} package.json
1 {
  "name": "todoapp",
  "version": "0.0.0",
  "private": true,
  "scripts": {
    "start": "node ./bin/www"
  },
  "dependencies": {
    "body-parser": "~1.18.2",
    "cookie-parser": "~1.4.3",
    "debug": "~2.6.9",
    "express": "~4.15.5",
    "hjs": "~0.0.6",
    "mongoose": "~4.13.5",
    "morgan": "~1.9.0",
    "serve-favicon": "~2.4.5"
  },
  "devDependencies": {
    "nodemon": "^1.12.1"
  }
}
```



Restart server

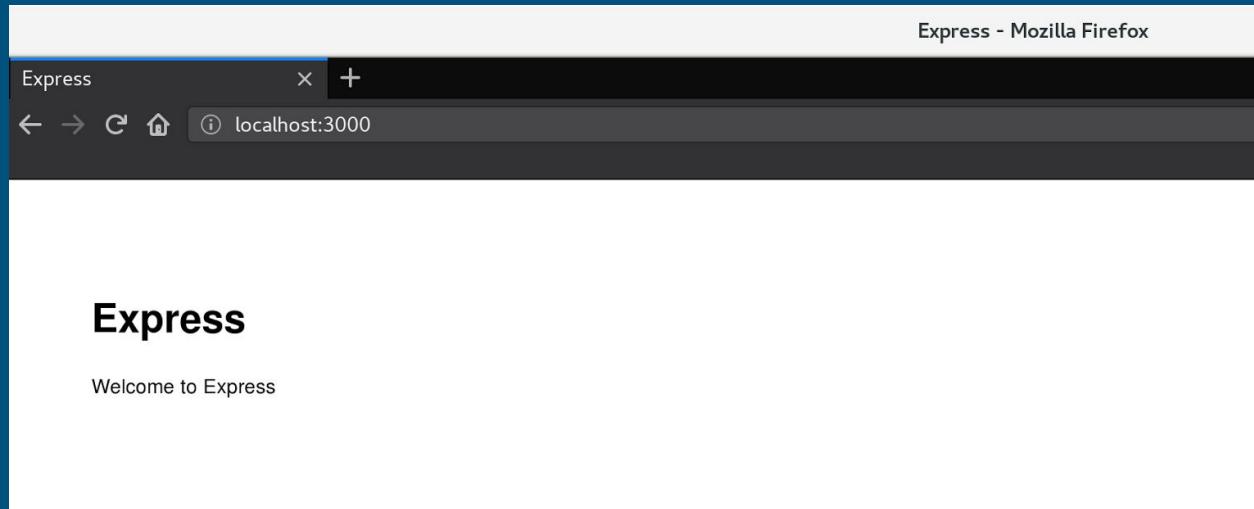
- Run server with nodemon
 - nodemon

```
john@localhost:~/ToDoApp x
File Edit View Search Terminal Help
[john@localhost ToDoApp]$ nodemon
[nodemon] 1.12.1
[nodemon] to restart at any time, enter `rs`
[nodemon] watching: ***!
[nodemon] starting `node ./bin/www`
Connected to mongoose: mongodb://localhost/toDoDB
```



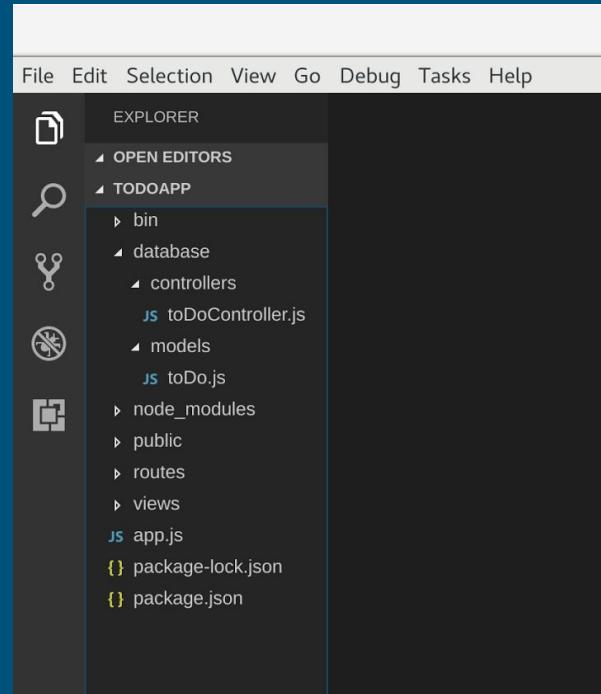
Check server still runs

- Go to:
 - <http://localhost:3000/>



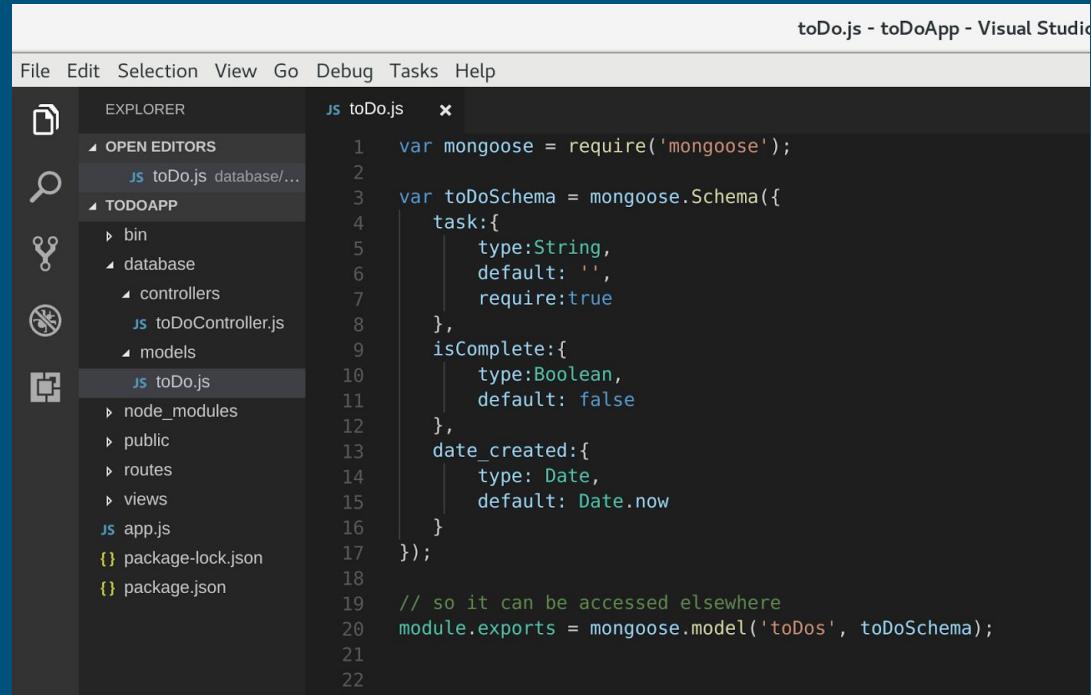
Create Database

- Create a folder for your database
 - Create a models folder
 - Create a models.js file
 - Create a controllers folder
 - Create a controller.js for the module



Create your schema

- Fill in your schema



```
File Edit Selection View Go Debug Tasks Help
EXPLORER
OPEN EDITORS
JS ToDo.js database/...
TODOAPP
bin
database
controllers
JS ToDoController.js
models
JS ToDo.js
node_modules
public
routes
views
JS app.js
{} package-lock.json
{} package.json
JS ToDo.js
var mongoose = require('mongoose');
var ToDoSchema = mongoose.Schema({
  task: {
    type: String,
    default: '',
    required: true
  },
  isComplete: {
    type: Boolean,
    default: false
  },
  date_created: {
    type: Date,
    default: Date.now
  }
});
// so it can be accessed elsewhere
module.exports = mongoose.model('toDos', ToDoSchema);
```



Code

All of '/database/modules/toDo.js'

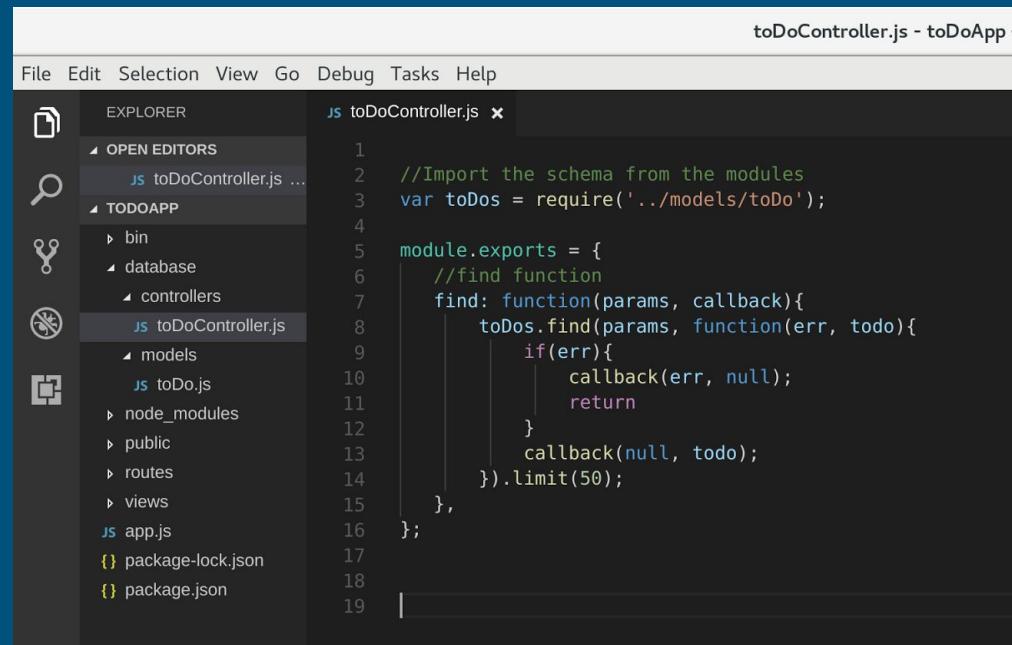
```
var mongoose = require('mongoose');

var ToDoSchema = mongoose.Schema({
  task:{
    type:String,
    default: '',
    require:true
  },
  isComplete:{
    type:Boolean,
    default: false
  },
  date_created:{
    type: Date,
    default: Date.now
  }
});

// so it can be accessed elsewhere
module.exports = mongoose.model('toDos', ToDoSchema);
```

Create the controller

- Create a controller for the module
 - Require the module



The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** On the left, it shows the project structure under "TODOAPP". The "ToDoController.js" file is currently selected.
- Code Editor:** On the right, the code for "ToDoController.js" is displayed. The code imports the "todo" schema and defines a module export with a "find" function that queries the database for todos.
- Status Bar:** At the bottom, it says "ToDoController.js - todoApp".

```
//Import the schema from the modules
var toDos = require('../models/todo');

module.exports = {
  //find function
  find: function(params, callback){
    toDos.find(params, function(err, todo){
      if(err){
        callback(err, null);
        return;
      }
      callback(null, todo);
    }).limit(50);
  },
};
```



Code

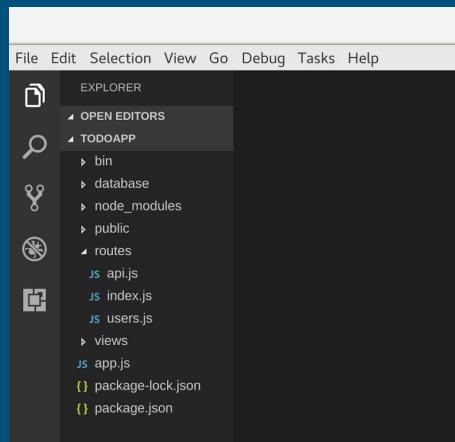
Lines 0 to 14 of
'/database/controller/toDoController.js'

```
//Import the schema from the modules
var toDos = require('../models/todos.js');

module.exports = {
    //find function
    find: function(params, callback){
        toDos.find(params, function(err, todo){
            if(err){
                callback(err, null);
                return;
            }
            callback(null, todo);
        }).limit(50);
    }
};
```

Creating the API

- Create a 'api.js' file in the '/routes' directory
- Make the file accessible from the server
 - Route the requests to the api



File Edit Selection View Go Debug Tasks Help

EXPLORER

OPEN EDITORS

TODOAPP

- bin
- database
- node_modules
- public
- routes
- api.js
- index.js
- users.js
- views
- app.js
- package-lock.json
- package.json

app.js - toDoApp - Visual Studio Code

```

import { read } from 'fs';
var express = require('express');
var path = require('path');
var favicon = require('serve-favicon');
var logger = require('morgan');
var cookieParser = require('cookie-parser');
var bodyParser = require('body-parser');
//Adding mongoose so it can be used
var mongoose = require('mongoose');
var index = require('./routes/index');
var users = require('./routes/users');
var api = require('./routes/api');

var app = express();
//After 'localhost/' that is what your database
var dbUrl = 'mongodb://localhost/toDoDB';
mongoose.connect(dbUrl, function(err)

```

File Edit Selection View Go Debug Tasks Help

EXPLORER

OPEN EDITORS

TODOAPP

- bin
- database
- node_modules
- public
- routes
- api.js
- index.js
- users.js
- views
- app.js
- package-lock.json
- package.json

app.js - toDoApp - Visual Studio Code

```

32 // uncomment after placing your favicon in /public
33 //app.use(favicon(path.join(__dirname, 'public', 'favicon.ico')));
34 app.use(logger('dev'));
35 app.use(bodyParser.json());
36 app.use(bodyParser.urlencoded({ extended: false }));
37 app.use(cookieParser());
38 app.use(express.static(path.join(__dirname, 'public')));
39
40 app.use('/', index);
41 app.use('/users', users);
42 app.use('/api', api);
43
44 // catch 404 and forward to error handler
45 app.use(function(req, res, next) {
46   var err = new Error('Not Found');
47   err.status = 404;
48   next(err);
49 });
50
51 });
52

```



Code

Line 13 of 'app.js'

```
var api = require('./routes/api');
```

Line 47 of 'app.js'

```
app.use('/api' api);
```



Api get request

- Handle that api request
 - Require the controller

```
File Edit Selection View Go Debug Tasks Help
EXPLORER api.js
OPEN EDITORS routes
TODOAPP
bin
database
node_modules
public
routes
api.js
index.js
users.js
views
app.js
package-lock.json
package.json
var express = require('express');
var router = express.Router();
var ToDosController = require('../database/controllers/toDoController');

router.get('/:resource', function (req,res) {
  var resource = req.params.resource;
  if(resource == 'toDos') {
    ToDosController.find(req.query, function (err, results) {
      if (err) {
        res.json({
          confirmation: 'fail',
          message: err
        });
        return
      }
      res.json({
        confirmation: 'success',
        result: results
      });
    });
  }
});

module.exports = router;
```



Code

Lines 0 to 24 and 49 of
'/routes/api.js'

```
var express = require('express');
var router = express.Router();
var ToDosController = require('../database/controllers/toDoController.js');

router.get('/:resource', function (req,res) {

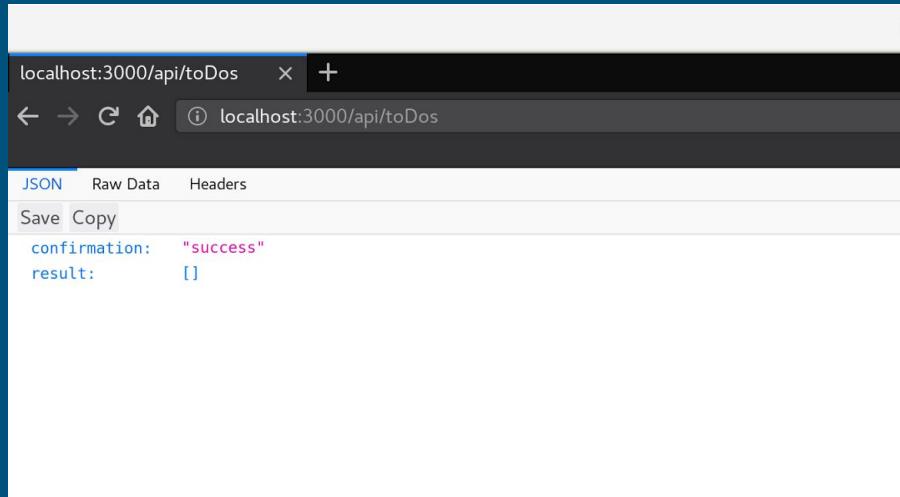
    var resource = req.params.resource;

    if(resource == 'toDos') {
        ToDosController.find(req.query, function (err, results) {
            if (err) {
                res.json({
                    confirmation: 'fail',
                    message: err
                });
                return
            }
            res.json({
                confirmation: 'success',
                result: results
            });
        });
    }
});

module.exports = router;
```

Check it works

- Go to
 - <http://localhost:3000/api/toDos>

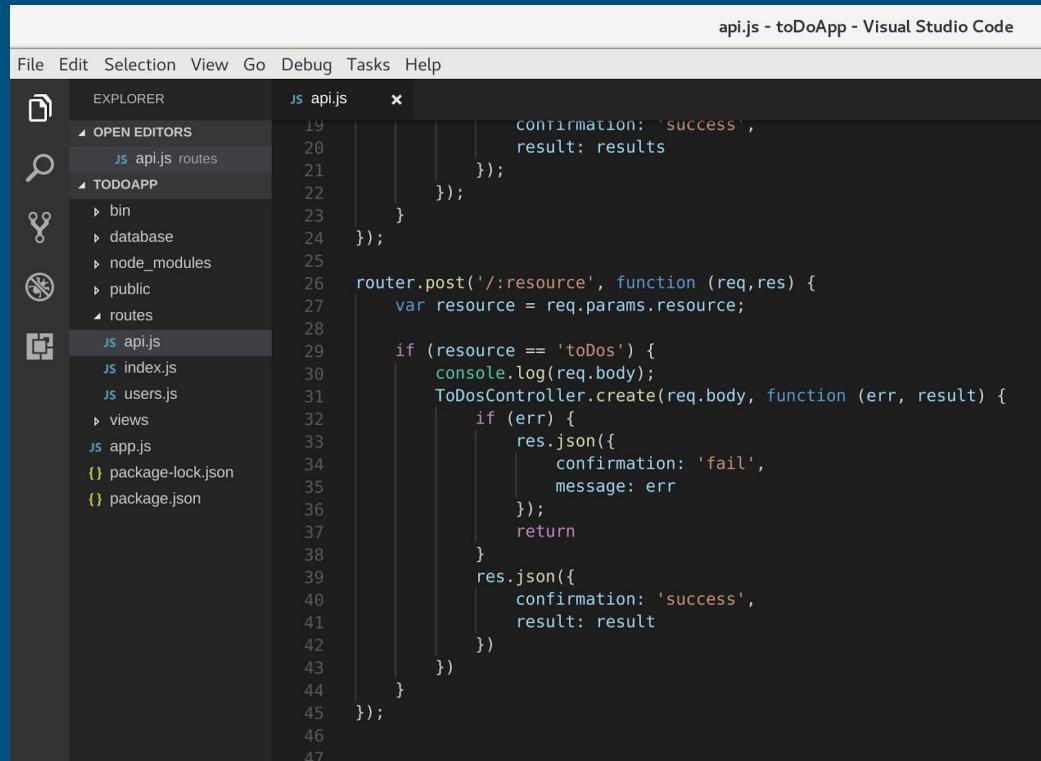


Response

- The api is now going to the mongo database and checking what is there and returning that as a json object.

Adding information

- Handle the new request
 - Is a post rather than a get



The screenshot shows the Visual Studio Code interface with the following details:

- Title Bar:** api.js - ToDoApp - Visual Studio Code
- File Menu:** File Edit Selection View Go Debug Tasks Help
- Explorer:** Shows the project structure:
 - OPEN EDITORS: api.js, routes
 - TODOAPP: bin, database, node_modules, public, routes
 - api.js (selected)
 - index.js, users.js, app.js, package-lock.json, package.json
- Code Editor:** The api.js file content is displayed, showing code for handling POST requests to '/:resource'. The code uses promises and the ToDosController.create method to handle the request and return a JSON response with confirmation and result fields.

```
api.js - Visual Studio Code
File Edit Selection View Go Debug Tasks Help
EXPLORER      api.js
OPEN EDITORS   routes
TODOAPP
  bin
  database
  node_modules
  public
  routes
  api.js
  index.js
  users.js
  views
  app.js
  package-lock.json
  package.json
19 |           confirmation: 'success',
20 |           result: results
21 |       });
22 |   });
23 | });
24 | });
25 |
26 router.post('/:resource', function (req,res) {
27     var resource = req.params.resource;
28
29     if (resource == 'toDos') {
30         console.log(req.body);
31         ToDosController.create(req.body, function (err, result) {
32             if (err) {
33                 res.json({
34                     confirmation: 'fail',
35                     message: err
36                 });
37             }
38             res.json({
39                 confirmation: 'success',
40                 result: result
41             });
42         });
43     }
44 });
45 });
46
47 
```



Code

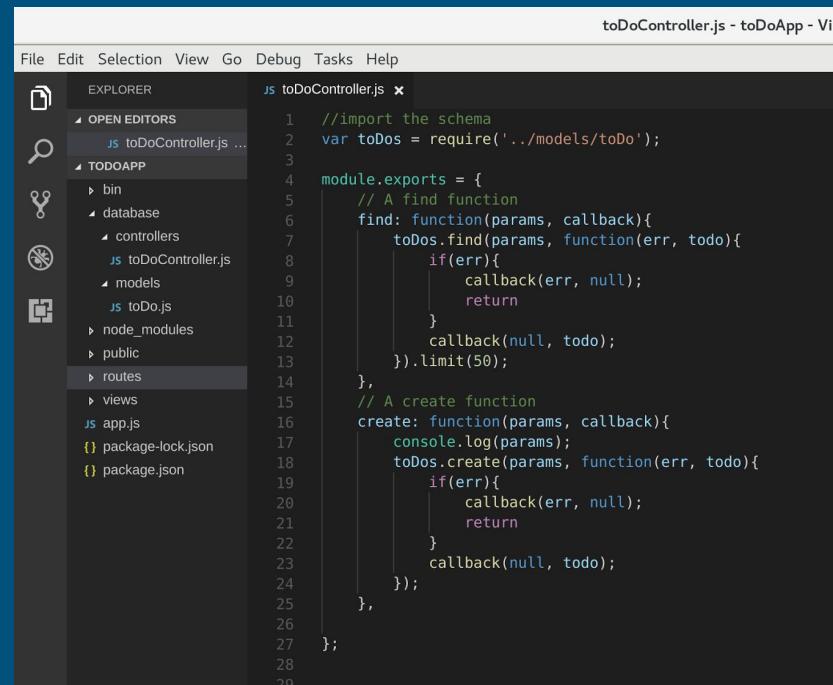
Lines 26 to 45 of '/routes/api.js'

```
router.post('/:resource', function (req,res) {
  var resource = req.params.resource;

  if (resource == 'toDos') {
    console.log(req.body);
    ToDosController.create(req.body, function (err, result) {
      if (err) {
        res.json({
          confirmation: 'fail',
          message: err
        });
        return
      }
      res.json({
        confirmation: 'success',
        result: result
      })
    })
  }
});
```

Add controller

- Add a create method to the controller



The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** On the left, it shows the project structure under "TODOAPP". The "routes" folder is currently selected.
- Code Editor:** On the right, the file "ToDoController.js" is open. The code defines two methods: "find" and "create".
- Code Content:**

```
1 //import the schema
2 var toDos = require('../models/todo');
3
4 module.exports = {
5   // A find function
6   find: function(params, callback){
7     toDos.find(params, function(err, todo){
8       if(err){
9         callback(err, null);
10      }
11      callback(null, todo);
12    }).limit(50);
13  },
14  // A create function
15  create: function(params, callback){
16    console.log(params);
17    toDos.create(params, function(err, todo){
18      if(err){
19        callback(err, null);
20      }
21      callback(null, todo);
22    });
23  },
24 25
26 27
28 29};
```



Code

Lines 15 to 25 of
'/controller/todoController.js'

```
// A create function
create: function(params, callback){
  console.log(params);
  toDos.create(params, function(err, todo){
    if(err){
      callback(err, null);
      return;
    }
    callback(null, todo);
  });
}
```



Send information

- Create a hjs file to send the new todo
 - This will be replaced with a react or angular client
- Add a form to the new file
 - This will send a post request to the api

A screenshot of Visual Studio Code interface. The title bar says "Activities Visual Studio Code Sun 01:28". The code editor shows a file named "createToDo.hjs" with the following content:

```
<!DOCTYPE html>
<html>
<head>
    <title>Create ToDo</title>
</head>
<body>
    <h1>Create ToDo</h1>
    <form action="/api/toDos" method="post">
        Task:
        <input type="text" name="task" placeholder="" /> <br/>
        <input type="submit" value="Create ToDo"/>
    </form>
</body>
</html>
```

The Explorer sidebar on the left shows a project structure for "TODOAPP" with files like "bin", "database", "node_modules", "public", "routes", and "views". The "views" folder contains "createToDo.hjs", "error.hjs", and "index.hjs". The status bar at the bottom shows file paths: "createToDo.hjs - ToDoApp - Visual Studio Code".

A screenshot of Visual Studio Code interface. The title bar says "Activities Visual Studio Code". The code editor shows a file named "createToDo.hjs" with the following content:

```
<!DOCTYPE html>
<html>
<head>
    <title>Create ToDo</title>
</head>
<body>
    <h1>Create ToDo</h1>
    <form action="/api/toDos" method="post">
        Task:
        <input type="text" name="task" placeholder="" /> <br/>
        <input type="submit" value="Create ToDo"/>
    </form>
</body>
</html>
```

The Explorer sidebar on the left shows a project structure for "TODOAPP" with files like "bin", "database", "node_modules", "public", "routes", and "views". The "views" folder contains "createToDo.hjs", "error.hjs", and "index.hjs". The status bar at the bottom shows file paths: "createToDo.hjs - ToDoApp - Visual Studio Code".

Code

All of '/view/createToDo.hjs'



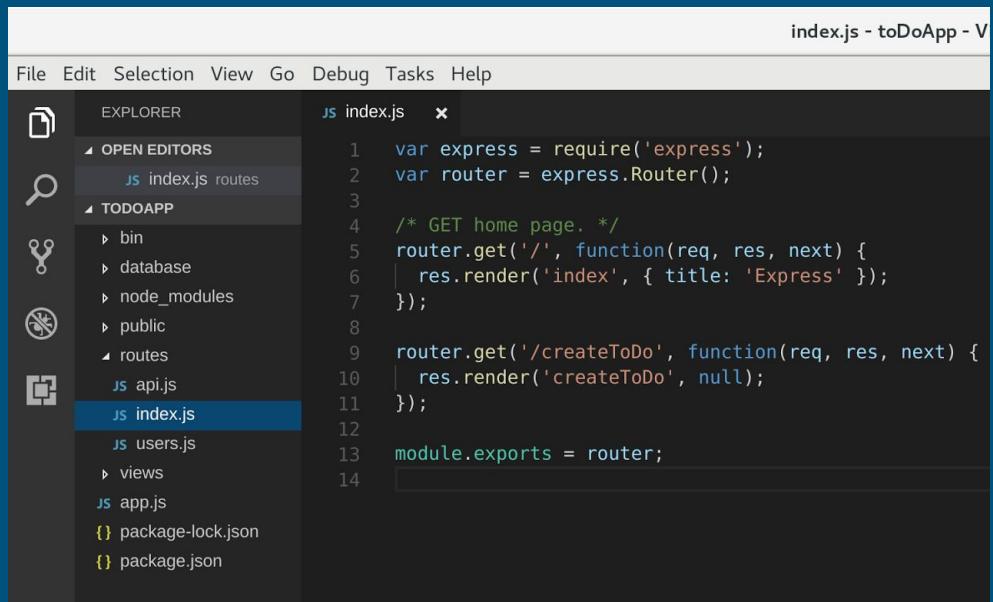
```
<!DOCTYPE html>

<html>
  <head>
    <title>Create ToDo</title>
  </head>
  <body>
    <h1>Create ToDo</h1>
    <form action="/api/toDos" method="post">
      Task:
      <input type="text" name="task" placeholder="" /> <br/>
      <input type="submit" value="Create ToDo"/>
    </form>
  </body>
</html>
```



Add new files to the route

- Handle the request when it is enter
 - Render the createToDo.hjs page



The screenshot shows a code editor interface with a dark theme. The title bar reads "index.js - toDoApp - V". The menu bar includes File, Edit, Selection, View, Go, Debug, Tasks, and Help. On the left is an Explorer sidebar showing the project structure:

- OPEN EDITORS:
 - index.js (selected)
 - routes
- TODOAPP:
 - bin
 - database
 - node_modules
 - public
 - routes
 - api.js
 - index.js (selected)
 - users.js
 - views
 - app.js
- {} package-lock.json
- {} package.json

The main editor area contains the following code:

```
1 var express = require('express');
2 var router = express.Router();
3
4 /* GET home page. */
5 router.get('/', function(req, res, next) {
6   |   res.render('index', { title: 'Express' });
7 });
8
9 router.get('/createToDo', function(req, res, next) {
10  |   res.render('createToDo', null);
11 });
12
13 module.exports = router;
```



Code

Lines x to x of '/routes/index.js'

```
router.get('/createToDo', function(req, res, next) {  
  res.render('createToDo', null);  
});
```



Test this works

- Go to:
 - <http://localhost:3000/createToDo>
- Add a value into the input box and submit the form
 - You will be redirected the the api with the information that was enter in it.

Create ToDo

localhost:3000/createToDo

← → ⌛ ⌂ ⌃

Create ToDo

Task: First Task

Create ToDo

localhost:3000/api/toDos

localhost:3000/api/toDos

← → ⌛ ⌂ ⌃

JSON Raw Data Headers

Save Copy

```
confirmation: "success"
result:
  _v: 0
  _id: "5a23552d74b51a45f53e4a30"
  date_created: "2017-12-03T01:36:45.907Z"
  isComplete: false
  task: "First Task"
```



MongoDB

Check that is has been added to mongo

- Go to mongo by typing
 - mongo
- Check that your database has been created
 - Show dbs

```
16
17 //After localhost is the name of your database
18 var dbUrl = 'mongodb://localhost/toDoDB';
19
```

```
john@localhost:~
```

```
File Edit View Search Terminal Help
> show dbs
admin      0.000GB
local      0.000GB
ToDoDB    0.000GB
tvDatabase 0.000GB
> █
```



MongoDB

Show collection

- Switch to your database
 - use {your_db}
- Show the collections in the database
 - Show collection

```
4 module.exports = {
5   // A find function
6   find: function(params, callback){
7     toDos.find(params, function(err, todo){
8       if(err){
9         callback(err, null);
```

john@local:

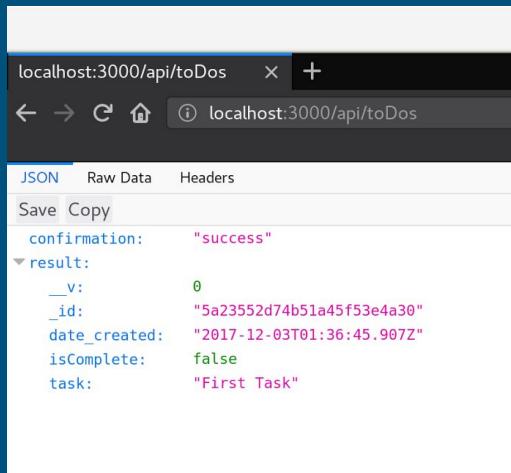
```
File Edit View Search Terminal Help
> show dbs
admin          0.000GB
local          0.000GB
ToDoDB        0.000GB
tvDatabase    0.000GB
> use ToDoDB
switched to db ToDoDB
> show collections
todos
> █
```



MongoDB

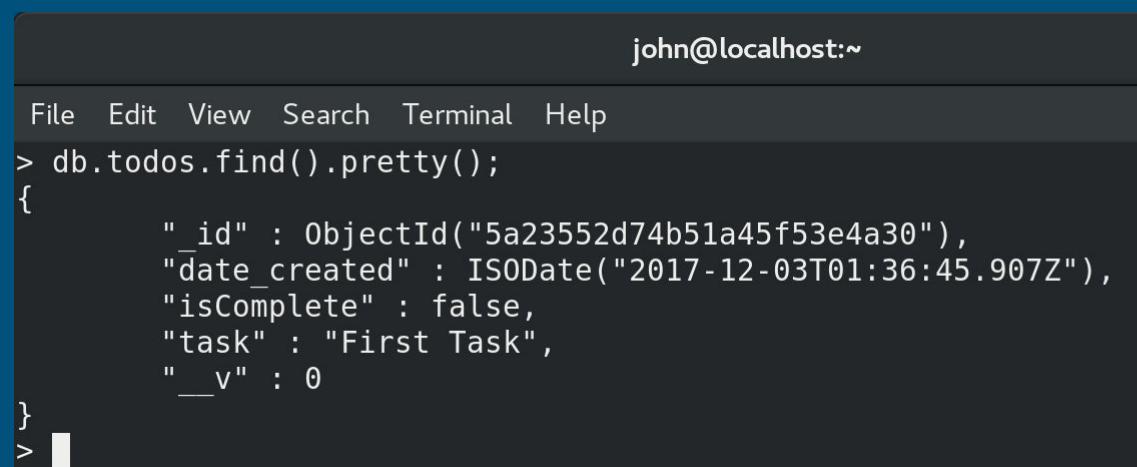
Collections content

- To check what is in the collection type
 - db.{collection_name}.find().pretty();
 - '.find()' gets everything in the collection
 - '.pretty()' make it easier to read



A screenshot of a browser window showing a JSON response. The URL is `localhost:3000/api/toDos`. The response is:

```
JSON Raw Data Headers
Save Copy
confirmation: "success"
result:
  _v: 0
  _id: "5a23552d74b51a45f53e4a30"
  date_created: "2017-12-03T01:36:45.907Z"
  isComplete: false
  task: "First Task"
```



A screenshot of a terminal window showing the MongoDB shell. The prompt is `john@localhost:~`. The command entered is `> db.todos.find().pretty();`. The output is:

```
File Edit View Search Terminal Help
> db.todos.find().pretty();
{
    "_id" : ObjectId("5a23552d74b51a45f53e4a30"),
    "date_created" : ISODate("2017-12-03T01:36:45.907Z"),
    "isComplete" : false,
    "task" : "First Task",
    "__v" : 0
}> █
```



Render List

- Add a get to the index.js file
 - The get will call the api and return the results

The screenshot shows the Visual Studio Code interface with the title bar "index.js - ToDoApp - Visual Studio Code". The menu bar includes File, Edit, Selection, View, Go, Debug, Tasks, and Help. The Explorer sidebar on the left lists project files: OPEN EDITORS (index.js routes), TODOAPP (bin, database, node_modules, public, routes, api.js, index.js, users.js, views, app.js), and package-lock.json, package.json. The main editor area displays the "index.js" code:

```
10 router.get('/createToDo', function(req, res, next) {
11
12   ToDosController.find(req.query, function (err, results) {
13     if (err) {
14       res.json({
15         confirmation: 'fail',
16         message: err
17       });
18     }
19     var toDos = []
20     for(var i = 0; i<results.length; i++){
21       toDos.push(results[i].task)
22     }
23     res.render('createToDo', { list: toDos});
24     console.log(results[0].task);
25   });
26
27
28 });

29 }
```



Code

Lines 3 and 10 to 28 of '/routes/index.js'

```
var ToDosController = require('../database/controllers/toDoController');

router.get('/createToDo', function(req, res, next) {
  ToDosController.find(req.query, function (err, results) {
    if (err) {
      res.json({
        confirmation: 'fail',
        message: err
      });
      return;
    }
    var toDos = []
    for(var i = 0; i<results.length; i++){
      toDos.push(results[i].task)
    }
    res.render('createToDo', { list: toDos});
    console.log(results[0].task);
  });
});
```



Render the results

- Render the resolus in the html

```
<!DOCTYPE html>
<html>
<head>
    <title>Create ToDo</title>
</head>
<body>
    <h1>Create ToDo</h1>
    <form action="/api/toDos" method="post">
        Task:
        <input type="text" name="task" placeholder="" /> <br/>
        <input type="submit" value="Create ToDo"/>
        <ul>
            {{#list}}
                <li>{{.}}</li>
            {{/list}}
        </ul>
    </form>
```



Code

Lines 15 to 19 of '/routes/index.js'

{#list}}

{.}

{/list}}



Check that it works

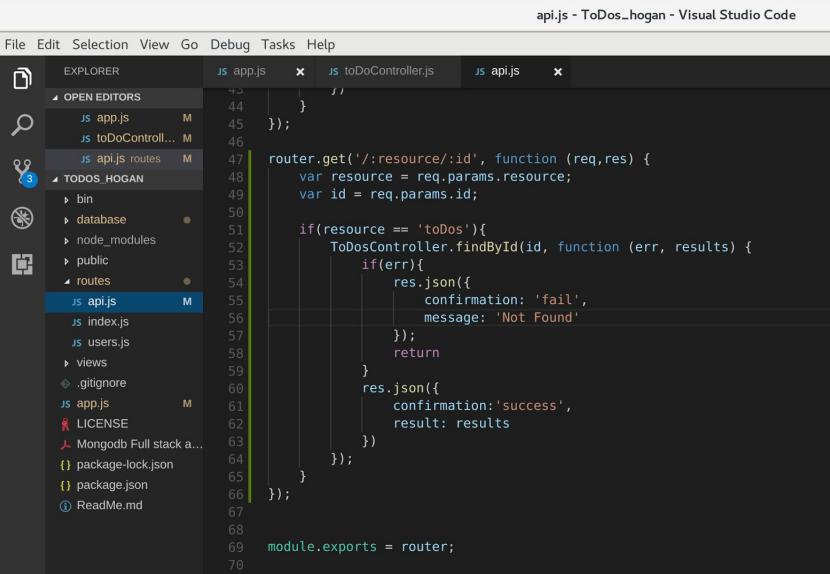
- Make sure the list is being rendered
- Add content to the list and go back to
 - <http://localhost:3000/createToDo>

A screenshot of a web browser window titled "Create ToDo". The address bar shows "localhost:3000/createToDo". The main content area displays the heading "Create ToDo" and a form with a "Task:" input field and a "Create ToDo" button. Below the form, a list of tasks is shown:

- First Task
- Second Task
- Third Task

Find by Id

- Add the find request to the api



The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows the project structure under "TODOS_HOGAN". The "routes" folder is selected, containing files: api.js (highlighted), index.js, users.js, views, .gitignore, app.js (marked with a 'M' icon), LICENSE, and ReadMe.md.
- Code Editor:** Displays the content of the "api.js" file.
- Code Content:**

```
api.js - Todos_hogan - Visual Studio Code

File Edit Selection View Go Debug Tasks Help

EXPLORER
OPEN EDITORS
JS app.js M
JS ToDoController.js
JS api.js M
TODOS_HOGAN
bin
database
node_modules
public
routes
JS api.js M
JS index.js
JS users.js
views
.gitignore
JS app.js M
LICENSE
MongoDB Full Stack a...
package-lock.json
package.json
ReadMe.md

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router.get('/:resource/:id', function (req,res) {
  var resource = req.params.resource;
  var id = req.params.id;

  if(resource == 'todos'){
    TodosController.findById(id, function (err, results) {
      if(err){
        res.json({
          confirmation: 'fail',
          message: 'Not Found'
        });
        return
      }
      res.json({
        confirmation:'success',
        result: results
      });
    });
  }
});

module.exports = router;
```



Code

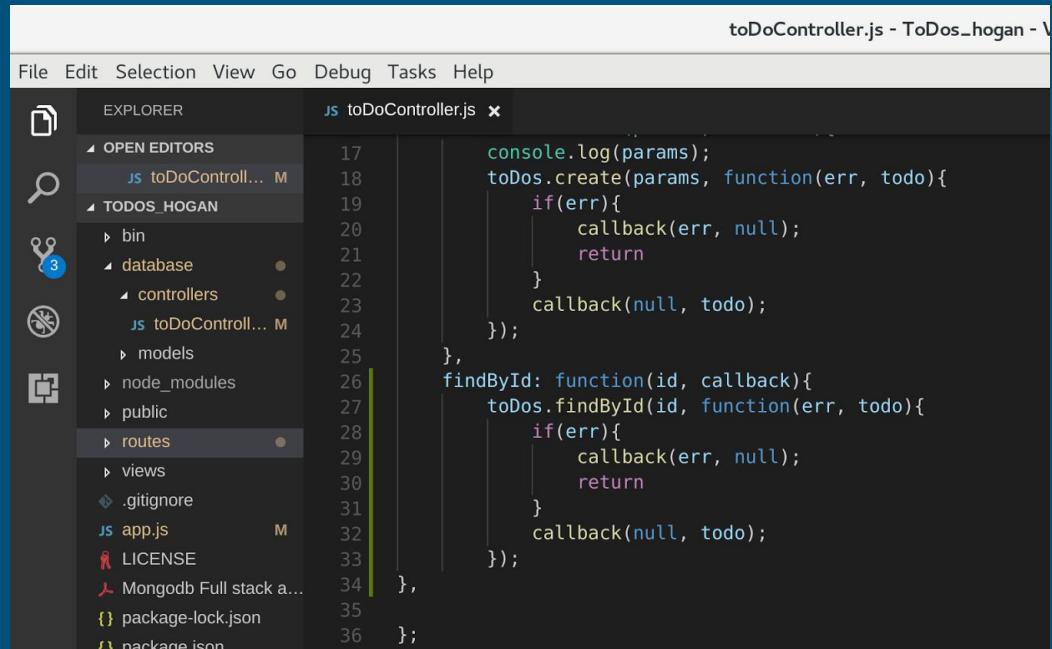
Lines 47 to 66 of '/routes/api.js'

```
router.get('/:resource/:id', function (req,res) {
  var resource = req.params.resource;
  var id = req.params.id;

  if(resource == 'toDos'){
    ToDosController.findById(id, function (err, results) {
      if(err){
        res.json({
          confirmation: 'fail',
          message: 'Not Found'
        });
        return
      }
      res.json({
        confirmation:'success',
        result: results
      })
    });
  }
});
```

Handle it in the controller

- Add the code to the controller



```
File Edit Selection View Go Debug Tasks Help
EXPLORER JS ToDoController.js x
OPEN EDITORS
TODOS_HOGAN
bin
database
controllers
models
node_modules
public
routes
views
.gitignore
JS app.js M
LICENSE
MongoDB Full stack a...
{} package-lock.json
{} package.json

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console.log(params);
toDos.create(params, function(err, todo){
  if(err){
    callback(err, null);
    return
  }
  callback(null, todo);
});
findById: function(id, callback){
  toDos.findById(id, function(err, todo){
    if(err){
      callback(err, null);
      return
    }
    callback(null, todo);
  });
},
```



Code

Lines 26 to 34 of
'/controller/toDoController.js'

```
findById: function(id, callback){  
    toDos.findById(id, function(err, todo){  
        if(err){  
            callback(err, null);  
            return;  
        }  
        callback(null, todo);  
    });  
},
```