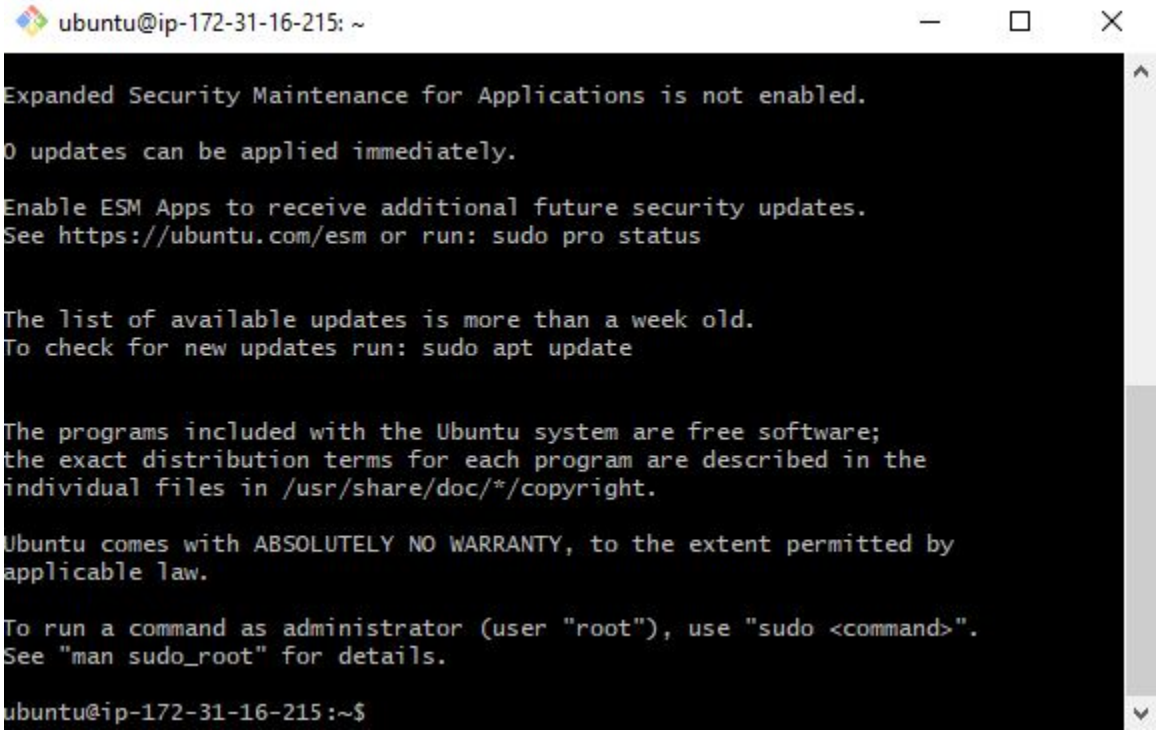
EC006-S04 - AWS Serverful Deployment - Application Deployment

EC006 - AWS Cloud Services and Infrastructure

Activity

AWS Serverful Deployment - Application Deployment

Activity Output



Activity: Instructions

- Review the topics discussed in the previous session.
- Answer the quiz form about the AWS Serverful Deployment - Application Deployment

Deploy Applications in an EC2 Instance

AWS Serverful Deployment - Application Deployment

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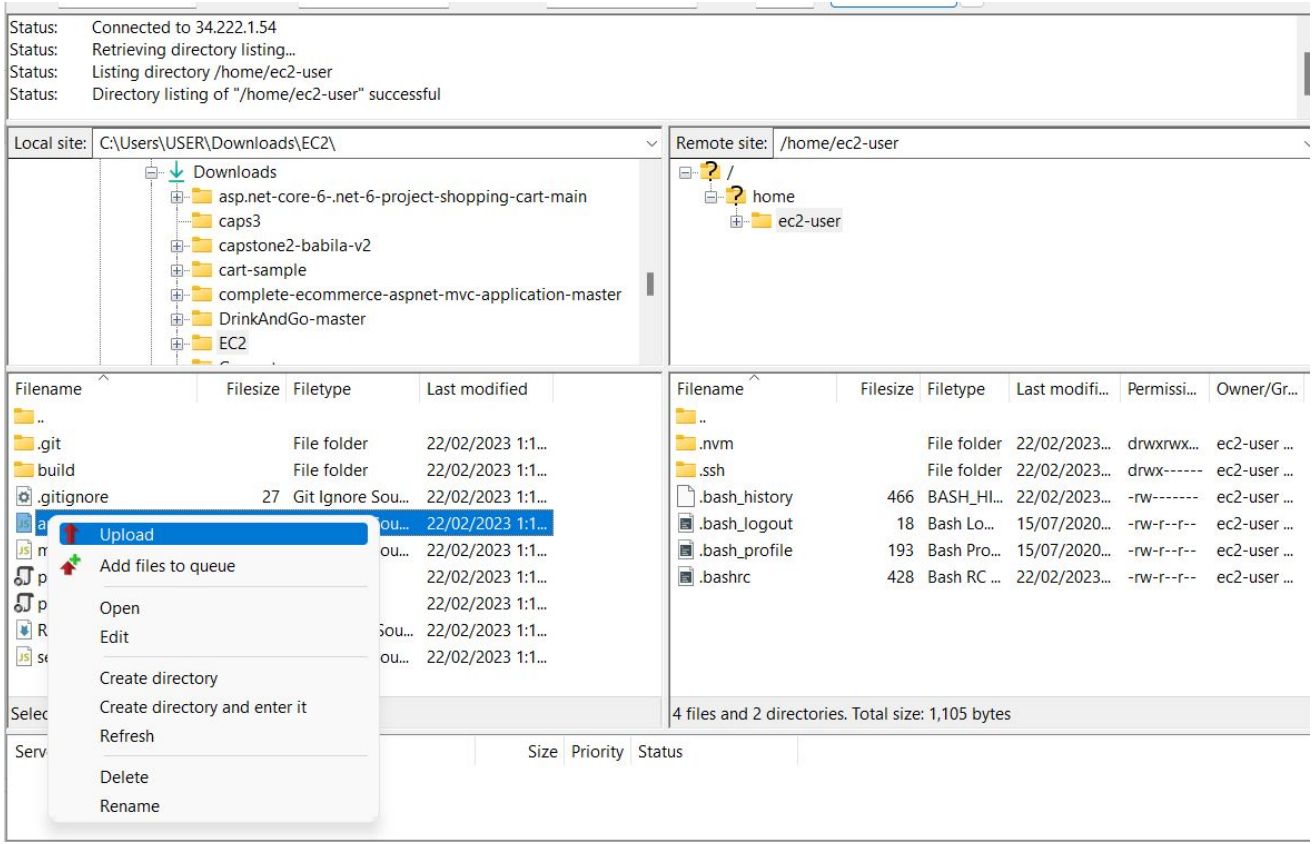
Deploy Applications in an EC2 Instance

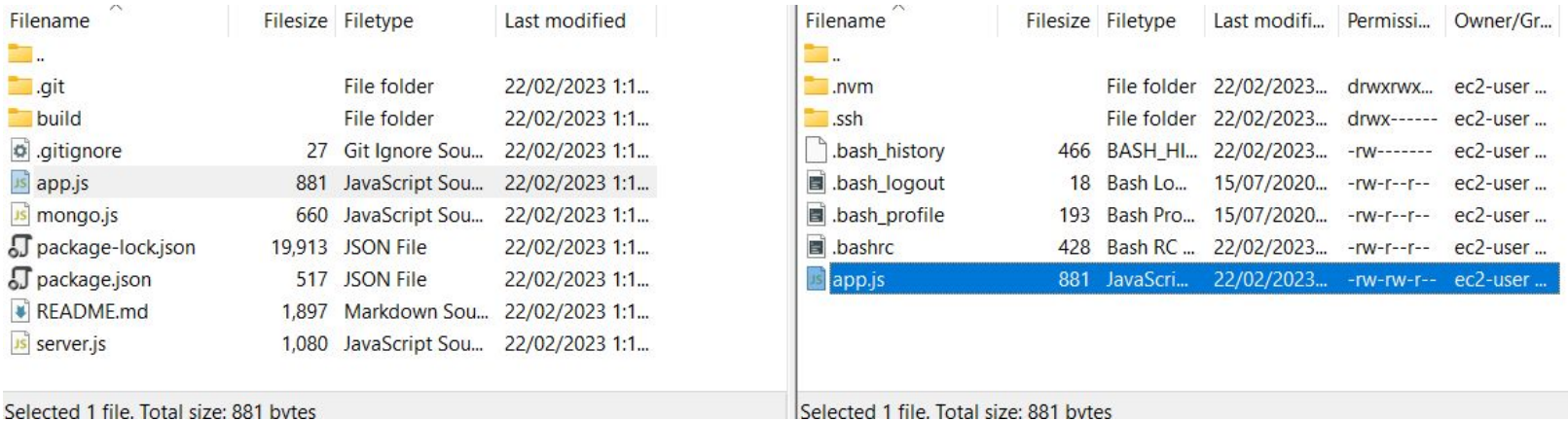
Follow these steps to setup the Node.js API on the server

1. Clone the Node.js + MongoDB API project into the directory with the command **sudo git clone https://github.com/aaronwht/EC2**
2. In your FileZilla, you need to locate your cloned project and upload our file called App.js to our server. See sample on the next slide

Deploy Applications in an EC2 Instance



Deploy Applications in an EC2 Instance



Filename	Filesize	Filetype	Last modified
..			
.git		File folder	22/02/2023 1:1...
build		File folder	22/02/2023 1:1...
.gitignore	27	Git Ignore Sou...	22/02/2023 1:1...
app.js	881	JavaScript Sou...	22/02/2023 1:1...
mongo.js	660	JavaScript Sou...	22/02/2023 1:1...
package-lock.json	19,913	JSON File	22/02/2023 1:1...
package.json	517	JSON File	22/02/2023 1:1...
README.md	1,897	Markdown Sou...	22/02/2023 1:1...
server.js	1,080	JavaScript Sou...	22/02/2023 1:1...

Selected 1 file. Total size: 881 bytes

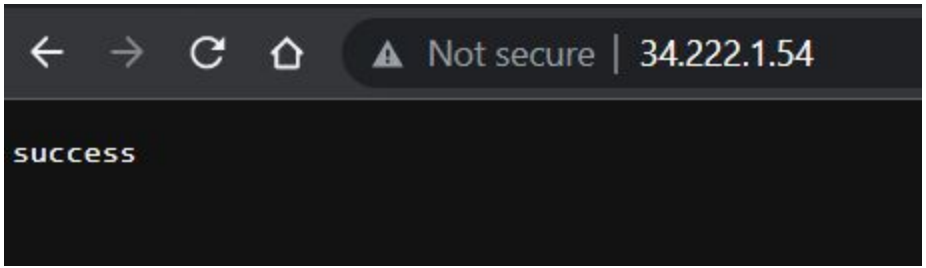
Filename	Filesize	Filetype	Last modifi...	Permissi...	Owner/Gr...
..					
.nvm		File folder	22/02/2023...	drwxrwx...	ec2-user ...
.ssh		File folder	22/02/2023...	drwx------	ec2-user ...
.bash_history	466	BASH_HI...	22/02/2023...	-rw-------	ec2-user ...
.bash_logout	18	Bash Lo...	15/07/2020...	-rw-r--r--	ec2-user ...
.bash_profile	193	Bash Pro...	15/07/2020...	-rw-r--r--	ec2-user ...
.bashrc	428	Bash RC ...	22/02/2023...	-rw-r--r--	ec2-user ...
app.js	881	JavaScri...	22/02/2023...	-rw-rw-r--	ec2-user ...

Selected 1 file. Total size: 881 bytes

Deploy Applications in an EC2 Instance

You can try the command **ls** in your terminal and it should show the App.js file

Run the app by saying **node app** in your terminal and go to your IP address in the web browser



Deploy Applications in an EC2 Instance

3. After testing our app, **ctrl + c** to exit our running server.

Run the following command

```
cd /etc/yum.repos.d
sudo touch mongo-org-5.0.repo
sudo su
vi mongo-org-5.0.repo
```

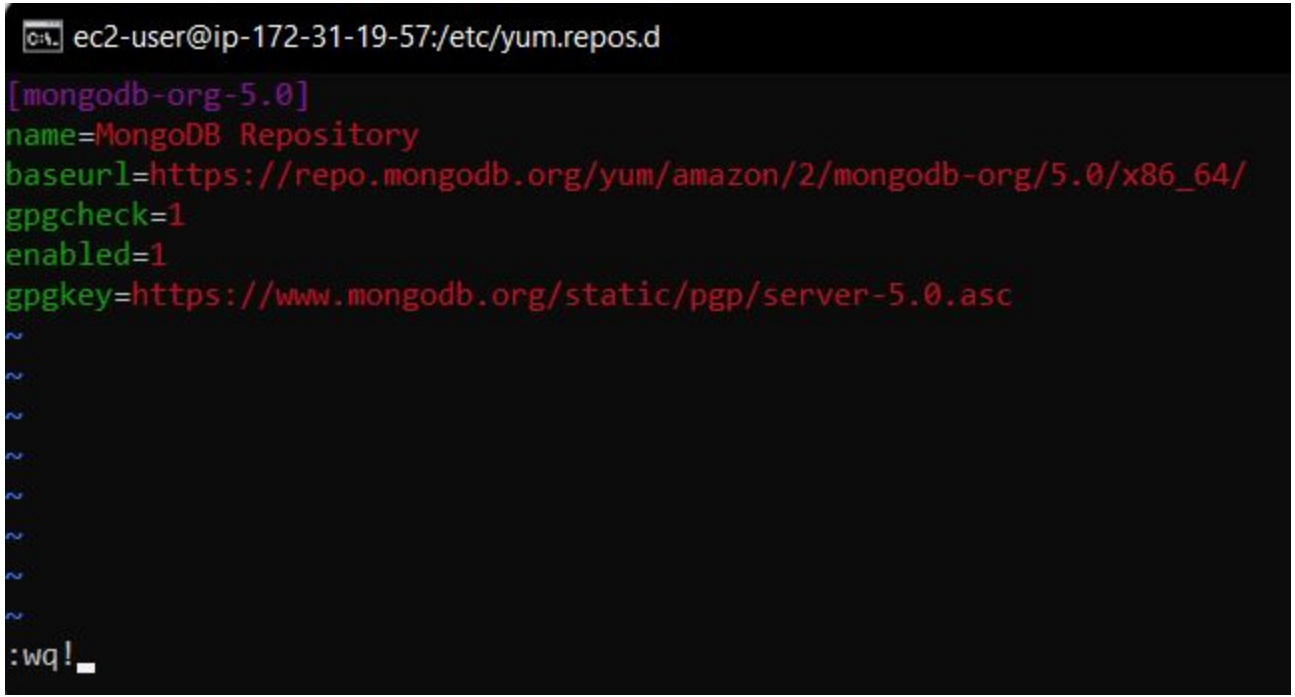
Deploy Applications in an EC2 Instance

Paste the code, this should be at the top

```
[mongodb-org-5.0]
name=MongoDB Repository
baseurl=https://repo.mongodb.org/yum/amazon/2/mongodb-org/5.0/x86_64/
gpgcheck=1
enabled=1
gpgkey=https://www.mongodb.org/static/pgp/server-5.0.asc
```

And **shift + esc + :** and type **wq!**

Deploy Applications in an EC2 Instance



Deploy Applications in an EC2 Instance

4. Run this command **cat mongo-org-5.0.repo** to view the file

```
[root@ip-172-31-19-57 yum.repos.d]# [root@ip-172-31-19-57 yum.repos.d]# cat mongo-org-5.0.repo
[mongodb-org-5.0]
name=MongoDB Repository
baseurl=https://repo.mongodb.org/yum/amazon/2/mongodb-org/5.0/x86_64/
gpgcheck=1
enabled=1
gpgkey=https://www.mongodb.org/static/pgp/server-5.0.asc
```

5. Run the command

Windows : yum install -y mongodb-org

MAC : sudo yum install -y mongodb-org

Deploy Applications in an EC2 Instance

6. Configure our simple react application.

   Go to your build folder directory and install our with the below command:

   npx create-react-app .

   This command will install our react inside our build folder

   If you're creating a project from scratch you can do something like:

   npx create-react-app your-app-name

   Note: *You have to move your index.html outside build folder before setting up your react project and we will use it for later.*

Deploy Applications in an EC2 Instance

7. Optional: Remove unnecessary files and boilerplate

   Go to **src** folder delete these files: **index.css**, **reportWebVitals.js**

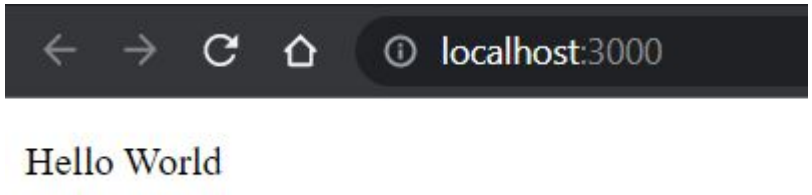
   And on **App.js** remove the whole div in your return function.

   Remove items in **index.js** the line

```
import './index.css';
import reportWebVitals from './reportWebVitals';
reportWebVitals();
```

Deploy Applications in an EC2 Instance

Add a message and try to run with the command **npm start**



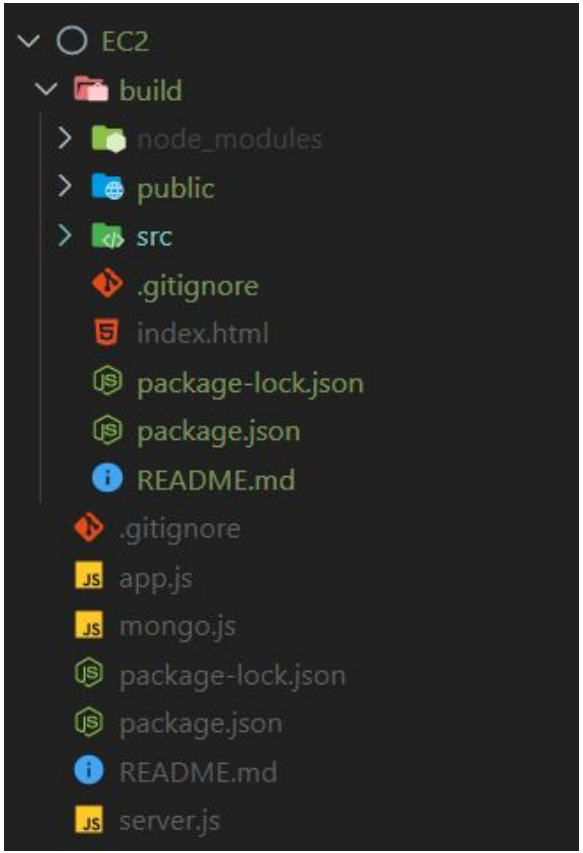
Deploy Applications in an EC2 Instance

8. Move your index.html to your react app

   And delete the folder called

   node_modules

For now we just assume that we have a react app but what we're doing is accessing the file index.html. It's gonna be a different implementation if you're retrieving these data inside your react application.



Deploy Applications in an EC2 Instance

9. Upload the following files to our server make sure you're on ec2-user directory

Filename	Filesize	Filetype	Last modified
..			
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build		File folder	22/02/2023 1:1...
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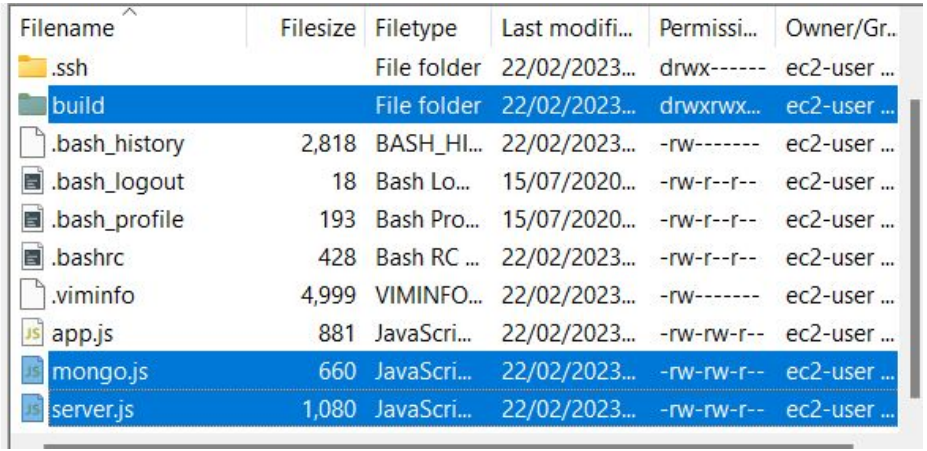

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.bash_profile	193	Bash Pro...	15/07/2020...	-rw-r--r--	ec2-user ...
.bashrc	428	Bash RC ...	22/02/2023...	-rw-r--r--	ec2-user ...
.viminfo	4,999	VIMINFO...	22/02/2023...	-rw-------	ec2-user ...
app.js	881	JavaScri...	22/02/2023...	-rw-rw-r--	ec2-user ...
mongo.js	660	JavaScri...	22/02/2023...	-rw-rw-r--	ec2-user ...
server.js	1,080	JavaScri...	22/02/2023...	-rw-rw-r--	ec2-user ...

Deploy Applications in an EC2 Instance

10. Let's create folders we need

    cd / (going back to root directory)

    mkdir data > **cd data**

    mkdir db > **cd /home/ec2-user**

    ls (you should have app.js build mongo.js server.js)

    service mongod start

```
[root@ip-172-31-19-57 ec2-user]# service mongod start
Redirecting to /bin/systemctl start mongod.service
```

Deploy Applications in an EC2 Instance

11. Install mongoose and express

    Go back to the ec2 directory, just to make sure you can run below command:

    exit & **exit** to disconnect and connect again to your instance

    npm install mongoose express

    If you get node: /lib64/....`GLIBC_2.XX` not found error

    Run command **nvm install 16** to make sure you're using that version

    And type again **npm install mongoose express**

Deploy Applications in an EC2 Instance

12. Install **npm install pm2 -g** as this will restart our node service if anything might happen.

13. Let's enter mongo shell console by typing **mongo**. Type the following command to access our database, configure user and insert records.

```
use mern

db.createUser({ user: "my_user", pwd: "my_pwd", roles: ["dbOwner"] })

db.members.insert({ firstName: "Bill", lastName: "Smith" })

db.members.insert({ firstName: "Bob", lastName: "Smith" })
```

Test Applications in EC2 Instances

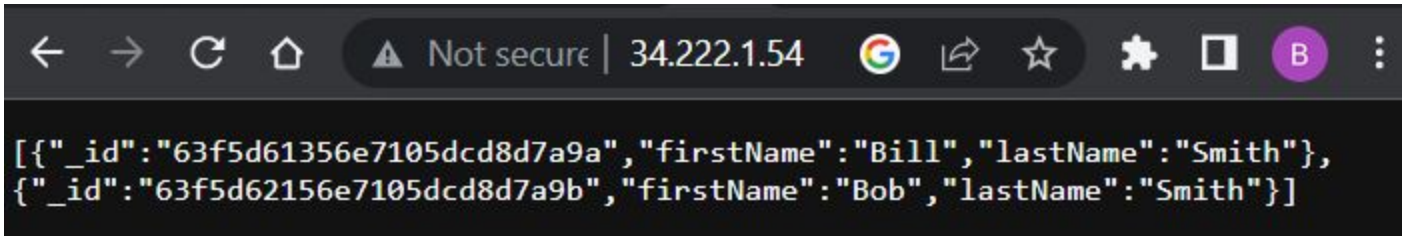
Test Applications in EC2 Instances

Enter the hostname of your AWS EC2 instance in a browser to access and test your new MERN stack application.

The hostname is the "Public DNS (IPv4)" property located on the instance description tab in the AWS Console.

Test Applications in EC2 Instances

1. After inserting record in our database, **exit** the shell and run the command **node mongo** and go to your web browser and enter your IPv4 address.



Test Applications in EC2 Instances

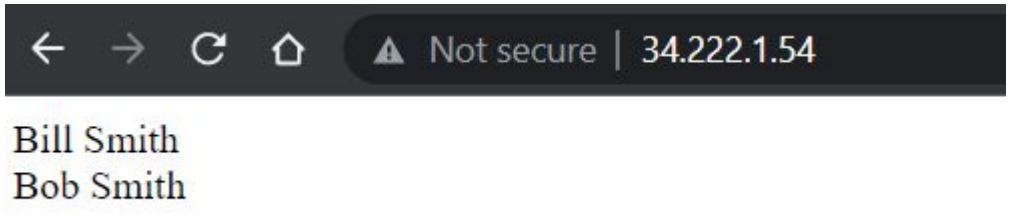
2. Let's run our server.js with this command **pm2 start server.js**

```
[ec2-user@ip-172-31-19-57 ~]$ pm2 start server.js
[PM2] Starting /home/ec2-user/server.js in fork_mode (1 instance)
[PM2] Done.
```

id	name	namespace	version	mode	pid	uptime	↺	status	cpu	mem	user	watching
0	server	default	N/A	fork	19559	0s	0	online	0%	25.7mb	ec2-user	disabled

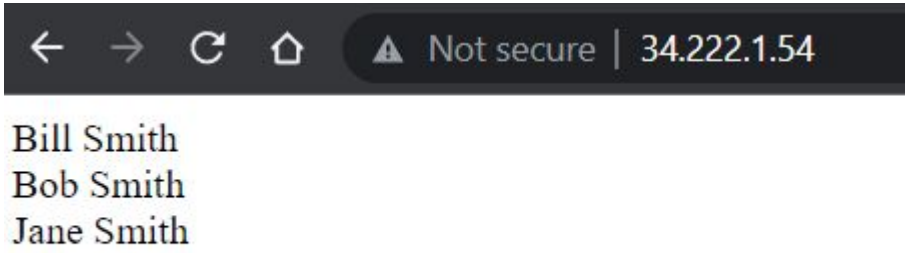
Test Applications in EC2 Instances

Refresh your web browser and you should see the inserted records.



Test Applications in EC2 Instances

3. Exit and connect, go to mongo shell, use db mern, add another record and refresh your browser.



Quiz Form

Tools to Interact with AWS Services

Quiz Form

Click on this link to navigate to the quiz form for the session on Introduction to AWS and EC2.

Make sure to **tick the checkbox and record your email with your response**.