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Docker Lab

On your VM:

1) From home directory:
   mkdir nodeapp
   cd nodeapp
   git clone https://github.com/azat-co/mern.git
   mv mern/code/index.js .
   mv mern/code/package.json .
   rm -rf mern

2) Create a docker image with our app:
   a. In a browser (either on host or VM) and go to: https://hub.docker.com/explore/
   b. Search for "node"
   c. Pick the "official" repository and look at the tags available.
   d. Go to http://nodejs.org in another tab/window to see what the current LTS version is.
   e. Read the information about choosing which image to use near the bottom of the page (same considerations apply to picking other images)
   f. In the VM and in the nodeapp folder: **touch Dockerfile**
   g. **code Dockerfile** and make it:

```
# click on "tags" and pick a version that contains the latest stable version of Node.JS,
# you can always change your mind if it doesn't work
FROM node:carbon

# Create app directory
RUN mkdir -p /usr/src/app
WORKDIR /usr/src/app

# Install app dependencies
COPY package.json /usr/src/app/
RUN npm install

# Bundle app source
COPY . /usr/src/app

EXPOSE 3000
CMD [ "node", "index.js" ]
```

<save it>

h. Answer the following questions:

i. What does the FROM command do?

Sets the base image to use for the following instructions.

ii. What is the difference between RUN, CMD and ENTRYPOINT?

RUN executes and creates the image, CMD sets default commands and parameters, ENTRYPOINT creates a container and runs as an executable.

iii. What does the WORKDIR command do?

Sets the working directory for RUN, CMD, ENTRYPOINT, COPY, and ADD commands.

iv. What does the COPY command do?

Copies files or directories from src and adds them to the container at the dest path.

v. What does the EXPOSE command do?

Tells the container to listen to the specified ports at runtime.

i. Run: **sudo docker build -t {your-name}/{your-app-name}:{tag} .** Replace the {text} with your information. You can use "1.0" for the version and don't forget the ".".

You can ignore the warnings, etc.

j. Since we need Mongo as well:

code docker-compose.yml and make it:

```
version: '3'
services:

  mongo:
    image: mongo
    command: mongod --smallfiles
    networks:
      - all
```

```
  web:
                                #use the values from Dockerfile above
    image: {your-name}/{your-app-name}:{tag}

    ports:
      - "8080:3000"
    depends_on:
      - mongo
    restart: always
    networks:
      - all
    environment:
      MONGODB_URI: "mongodb://mongo:27017/accounts"

networks:
  all:
```

<save it>

k. **sudo docker-compose up -d**

l. **sudo docker ps**

   i. put a screen shot of the output here:

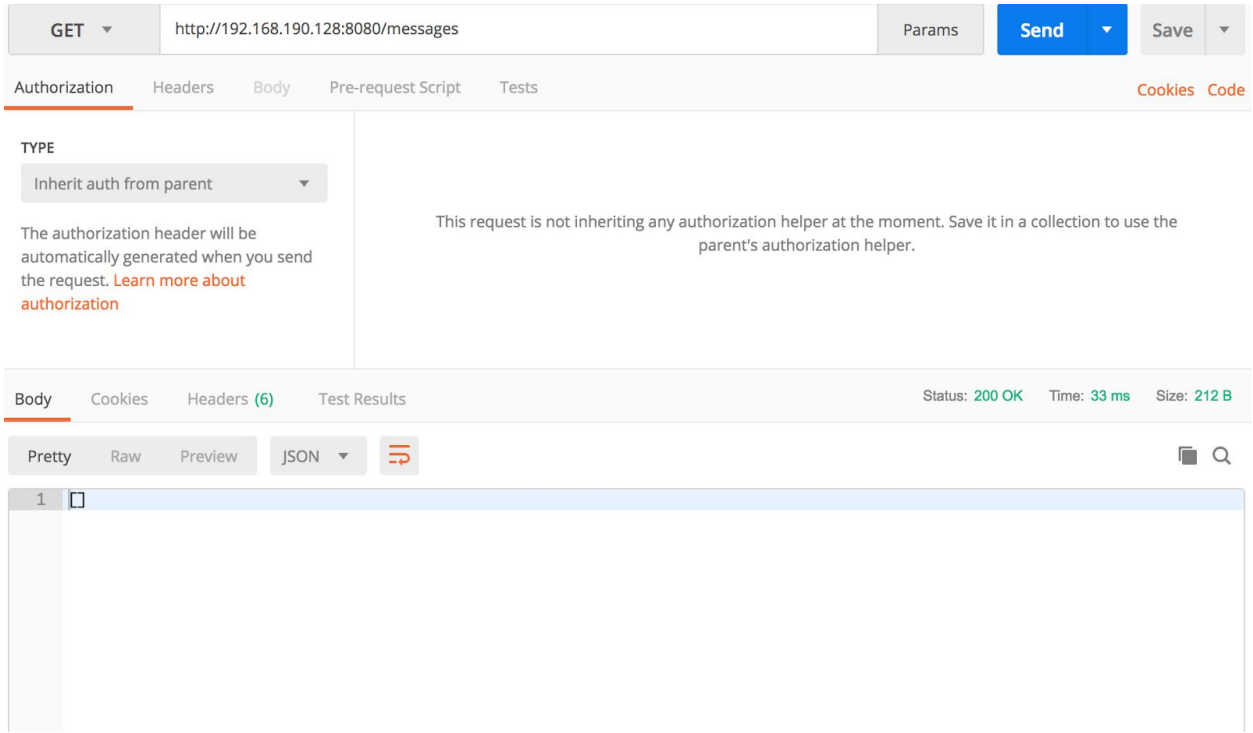
```
student@student-virtual-machine:~/nodeapp$ sudo docker ps
CONTAINER ID        IMAGE                   COMMAND                  CREATED             STATUS              PORTS                    NAMES
d396bace1e80        arp6333/10-jessie:1.0   "node index.js"          28 seconds ago      Up 15 seconds       0.0.0.0:8080->3000/tcp   nodeapp_web_1
b8e7f68927f3        mongo                   "docker-entrypoint.s…"   29 seconds ago      Up 28 seconds       27017/tcp                nodeapp_mongo_1
```

m. **ip addr show ens33** (copy the inet address)

n. On your Mac, open Postman:

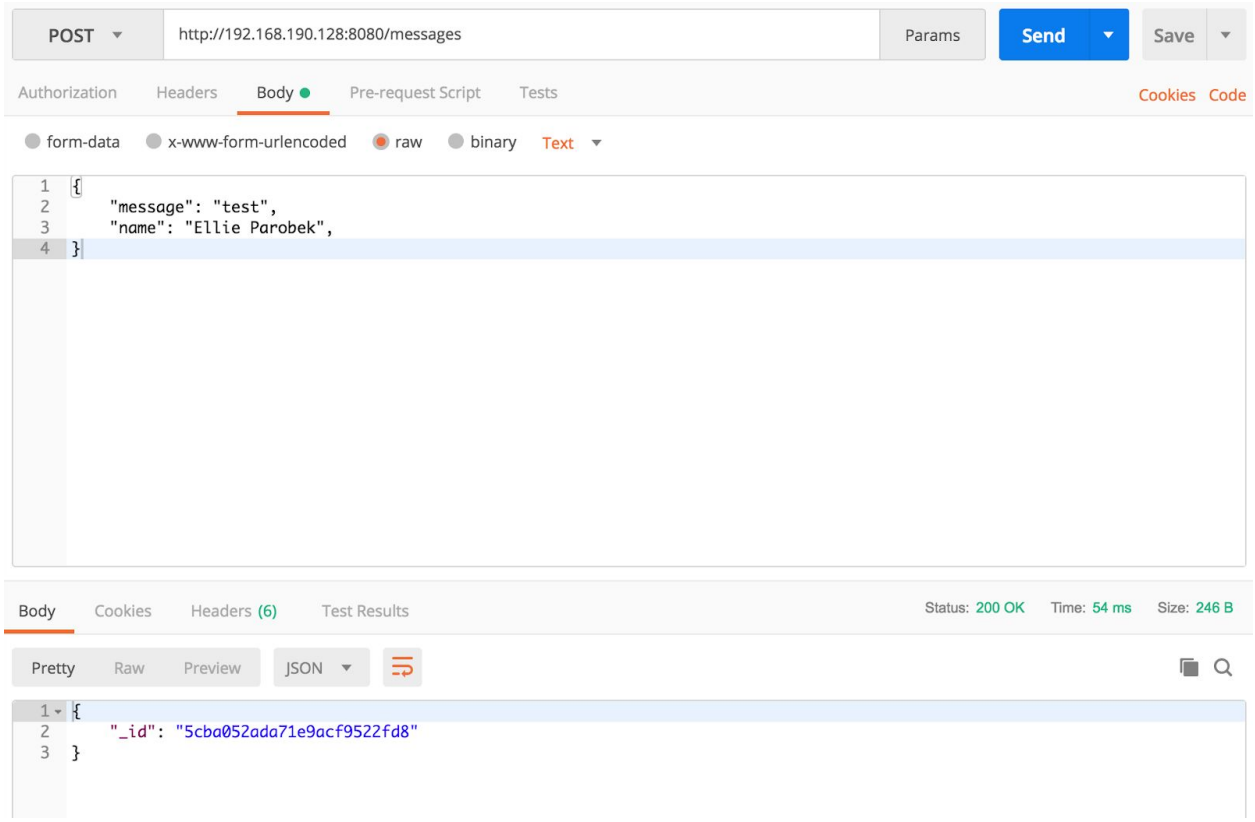
Create a "GET" request to http://<ip address>:8080/messages – SEND

Paste your response here:

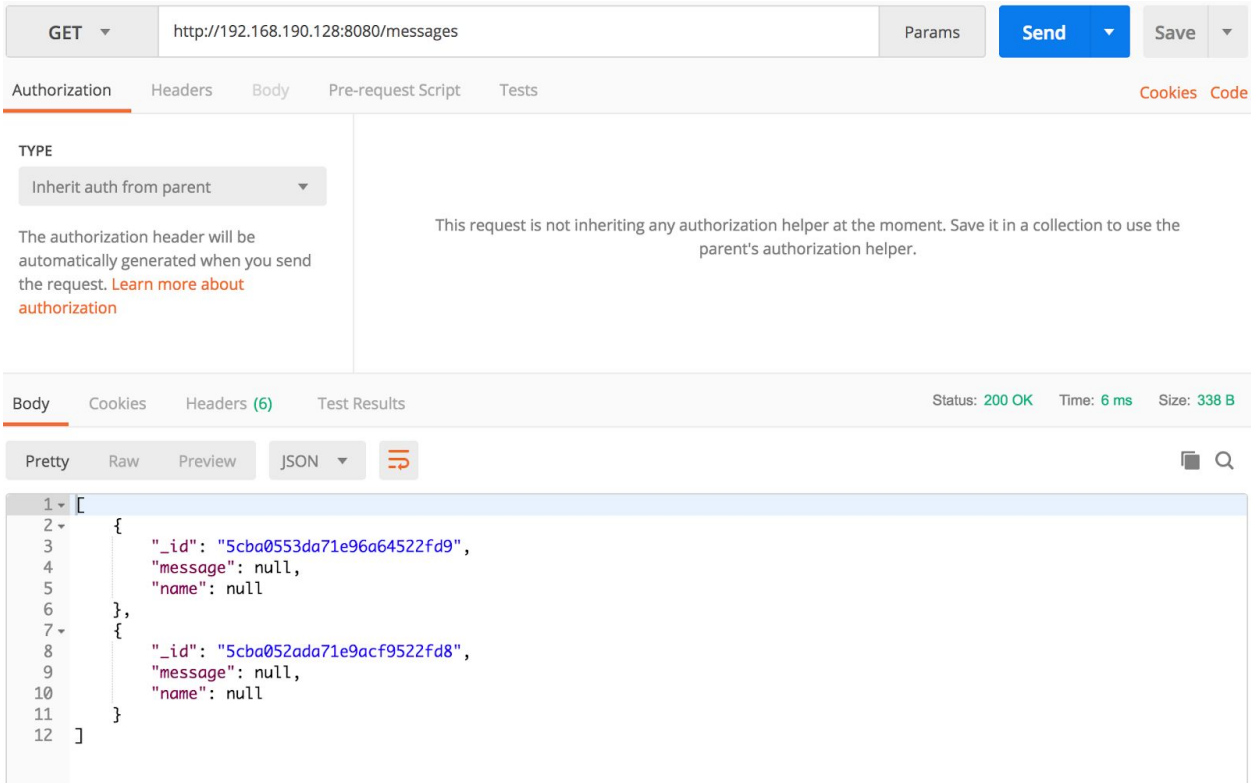


Create a “POST” request to the same URL, click on “Body”, then “raw”, then enter JSON similar to: {"message":"this is a test","name":"bryan french"} and click SEND.

Past your response here:



Send the GET request again and paste your response here:



(I accidentally called POST twice so that might be why there's two?)

Go to the VM: **sudo docker logs nodeapp_web_1** and paste the response here: