DevOps ASSIGNMENT

TEAM 10

2. Developing and deploying a Node.js app from Docker to Kubernetes

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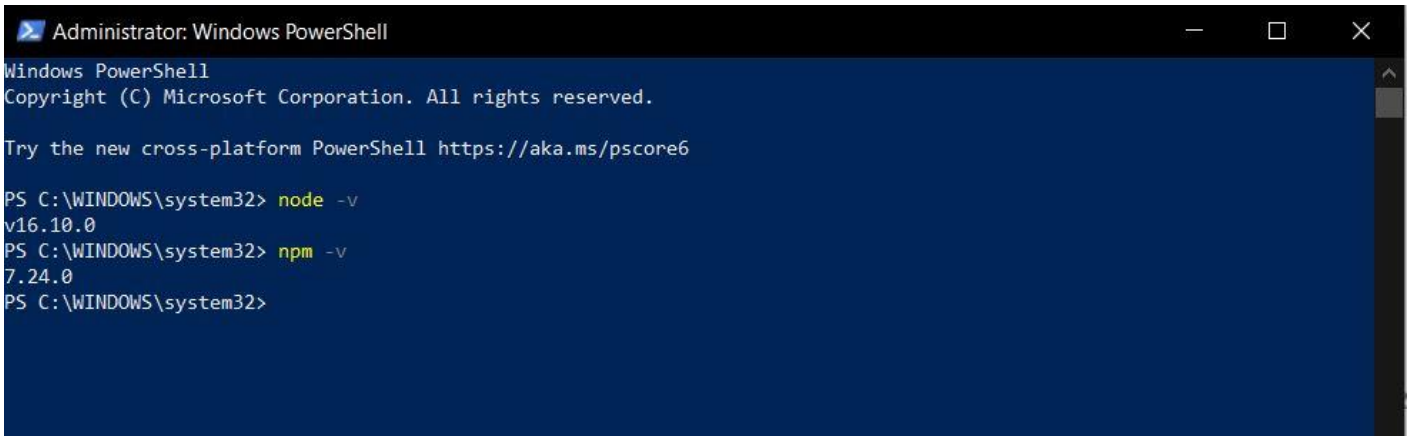
TO:

Dr.Uma S

Docker file link: https://hub.docker.com/r/18bcs026/nodejs-starter

PROCEDURE

Install Node.js and npm



Install Docker

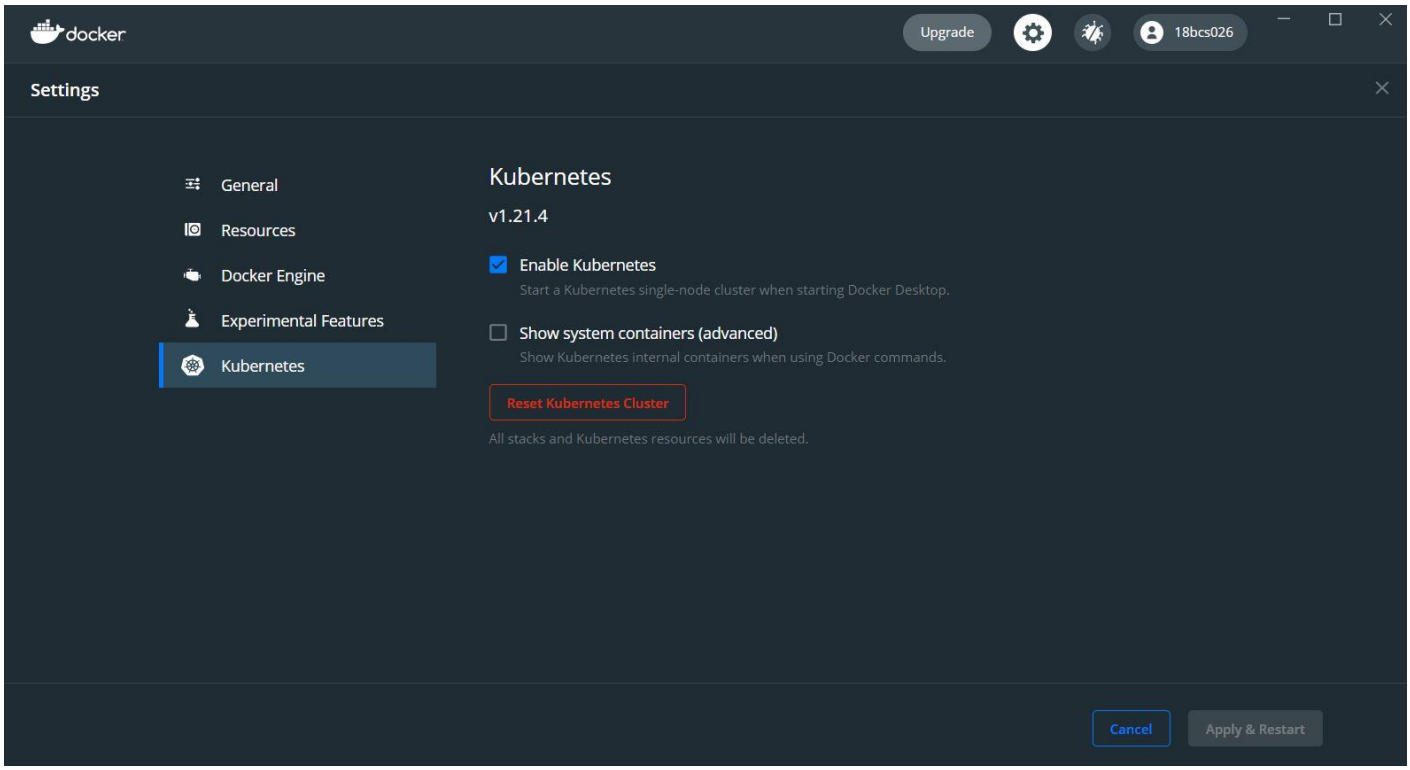
```
PS C:\WINDOWS\system32> docker --version
Docker version 20.10.8, build 3967b7d
PS C:\WINDOWS\system32> docker ps
CONTAINER ID   IMAGE                                COMMAND                  CREATED       STATUS          PORTS

   NAMES
520c7959dbd7   gcr.io/k8s-minikube/kicbase:v0.0.27   "/usr/local/bin/entr…"   4 hours ago   Up 58 minutes   127.0.0.1:54
613->22/tcp, 127.0.0.1:54614->2376/tcp, 127.0.0.1:54616->5000/tcp, 127.0.0.1:54617->8443/tcp, 127.0.0.1:54615->32443/tcp
   minikube
PS C:\WINDOWS\system32>
```

Minikube and Kubectl installation

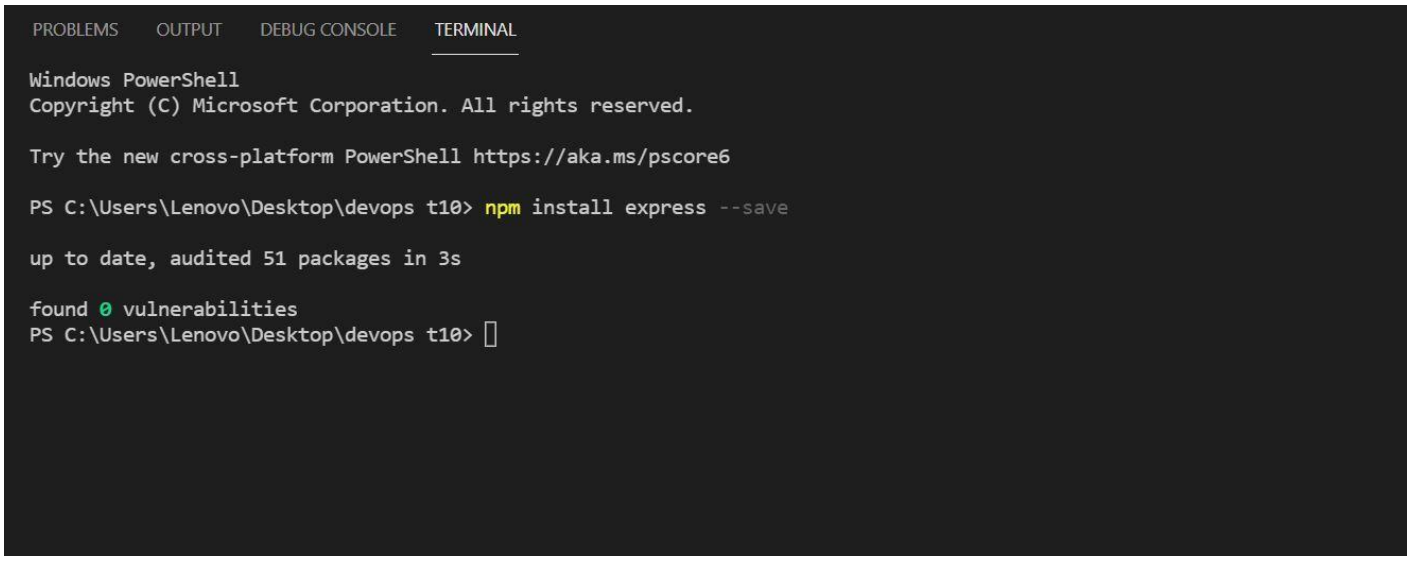
```
PS C:\WINDOWS\system32> minikube version
minikube version: v1.23.2
commit: 0a0ad764652082477c00d51d2475284b5d39ceed
PS C:\WINDOWS\system32> kubectl version
Client Version: version.Info{Major:"1", Minor:"21", GitVersion:"v1.21.4", GitCommit:"3cce4a82b44f032d0cd1a1790e6d2f5a55d
20aae", GitTreeState:"clean", BuildDate:"2021-08-11T18:16:05Z", GoVersion:"go1.16.7", Compiler:"gc", Platform:"windows/a
md64"}
Server Version: version.Info{Major:"1", Minor:"22", GitVersion:"v1.22.2", GitCommit:"8b5a19147530eaac9476b0ab82980b4088b
bc1b2", GitTreeState:"clean", BuildDate:"2021-09-15T21:32:41Z", GoVersion:"go1.16.8", Compiler:"gc", Platform:"linux/amd
64"}
PS C:\WINDOWS\system32>
```

Enabled Kubernetes service with Docker



Step 1: Make A Separate Directory And Initialize The Node Application

Step 2: Installing Express



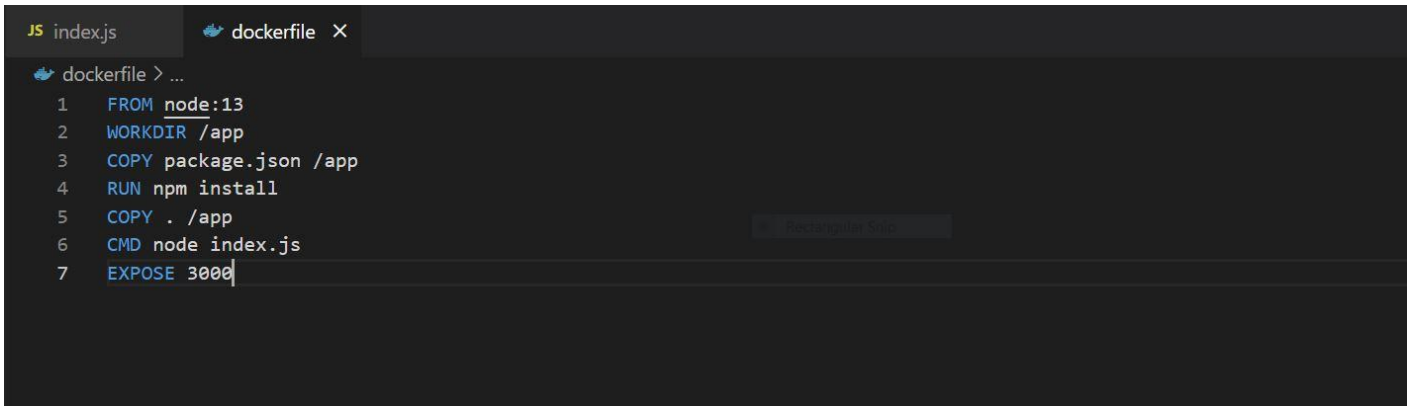
Step 3: Make index.js File And Write Some Code

After writing the code in the index.js file run the following command in the terminal.
$ node index.js

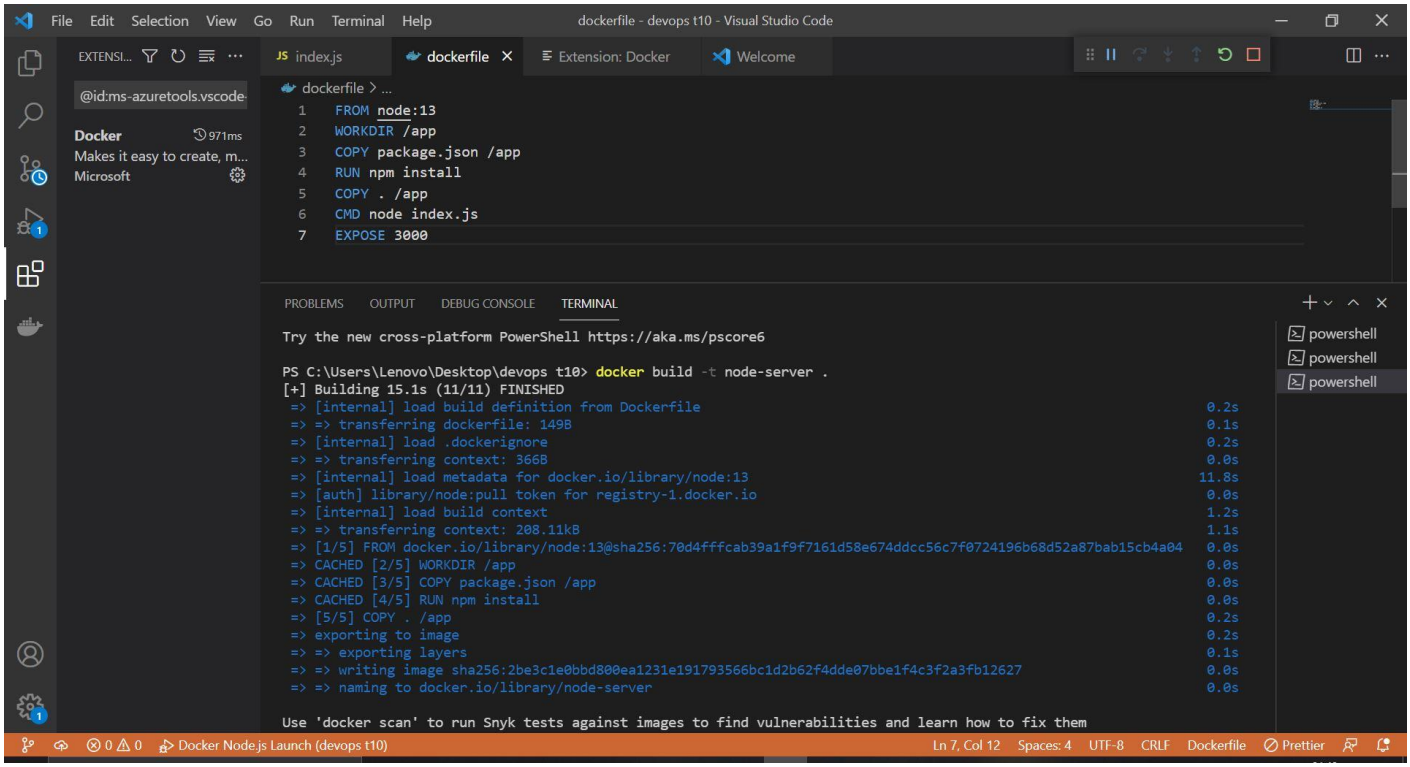
You can now check the server by using the following command and browsing localhost:3000/

Step 4: Dockerizing The Node Server

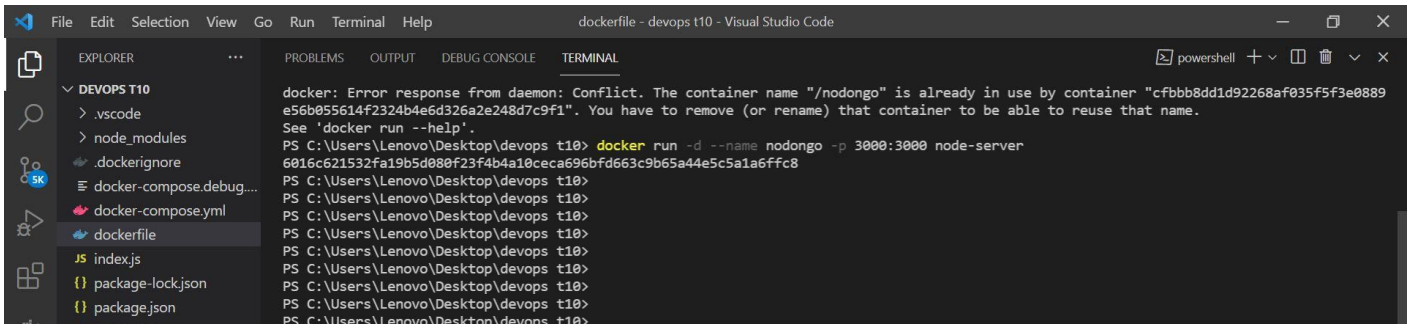
For creating the Dockerfile run the following command on terminal: **$ code dockerfile**



Start building our image by running the following command on terminal: **$ docker build -t node-server .**



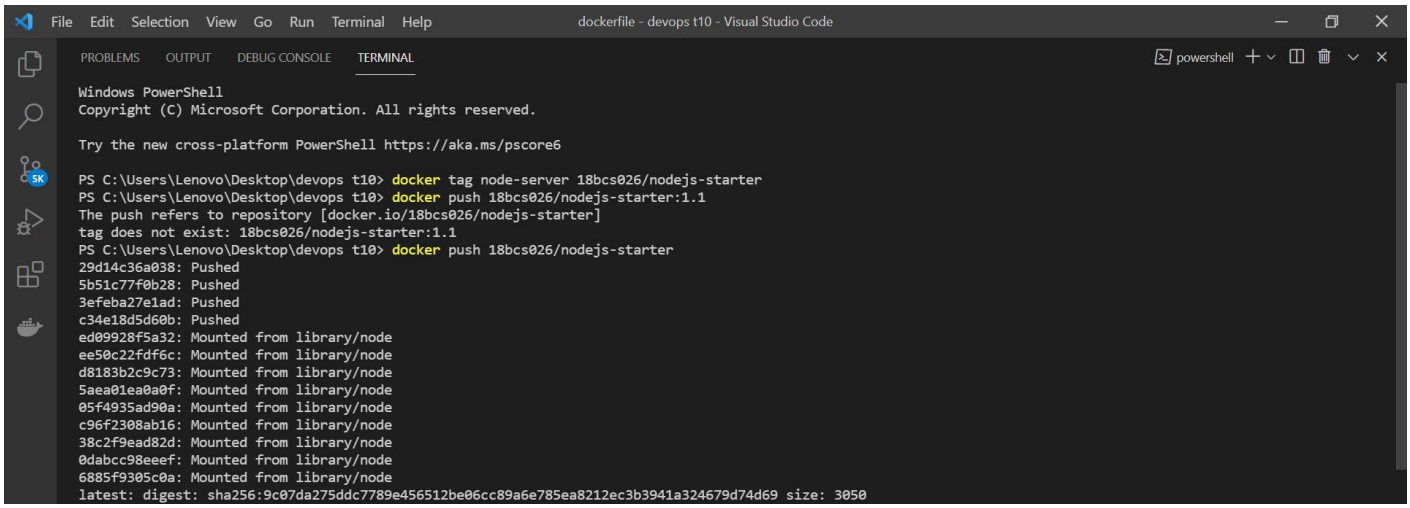
Step 5: Create And Run The Container

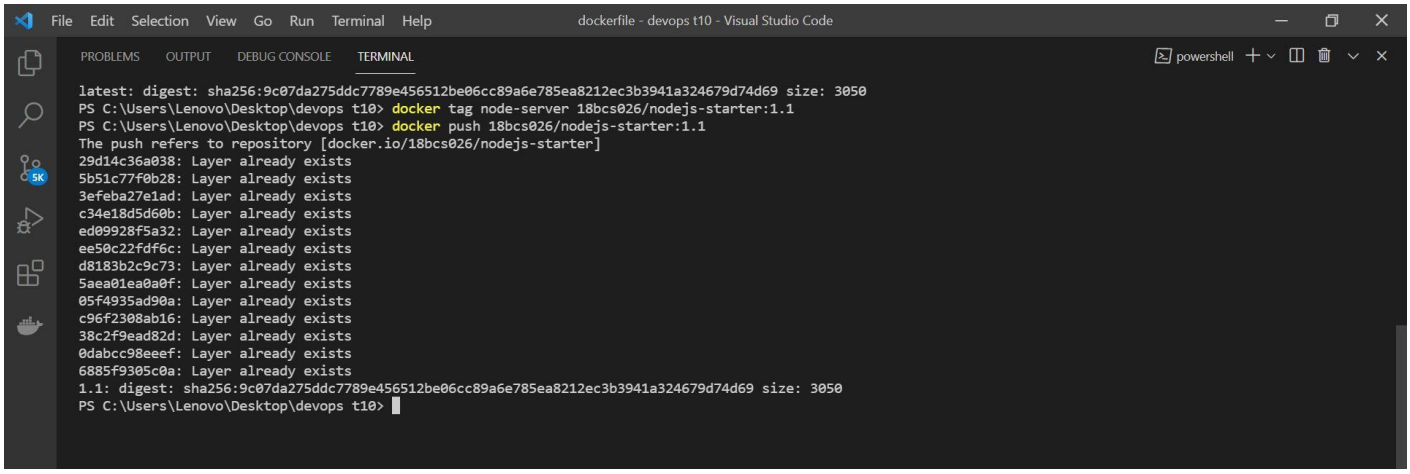


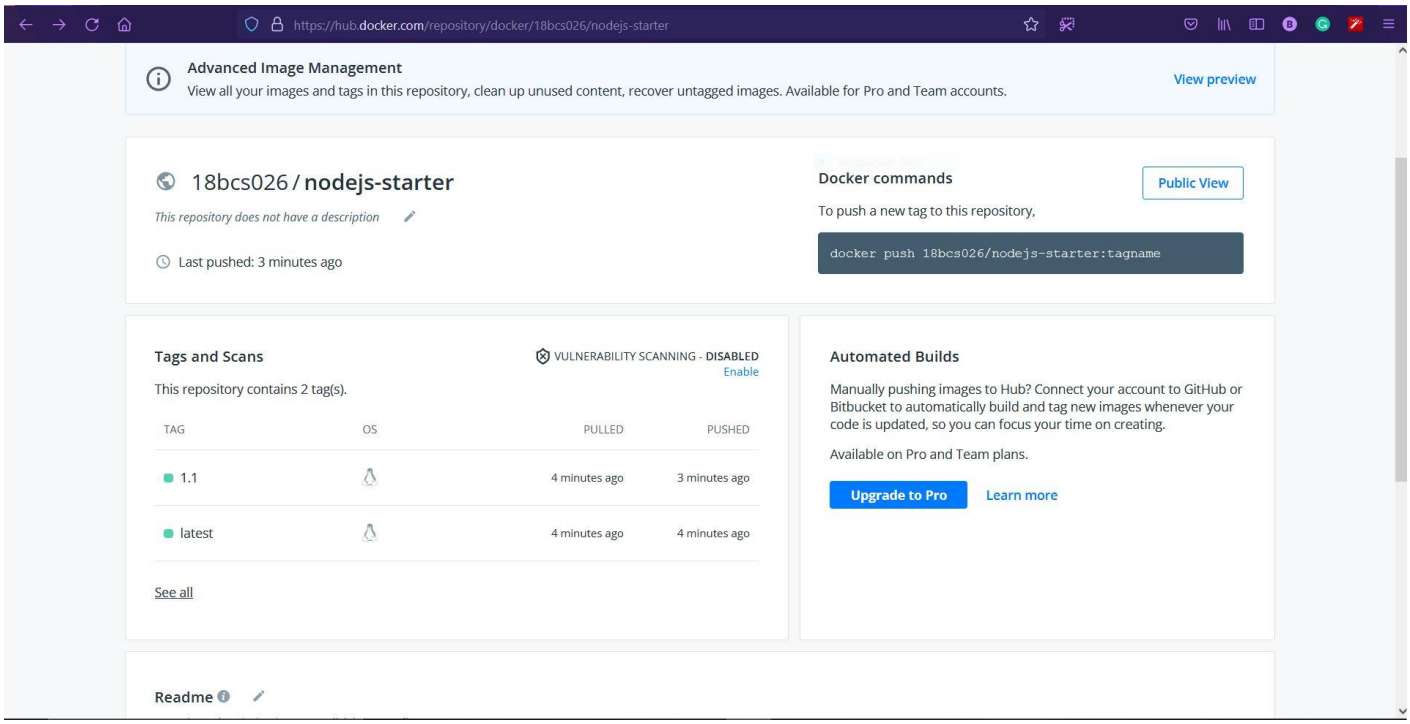
Go to the browser and browse the following address **127.0.0.1:3000** to test that it's running.

Users Shown

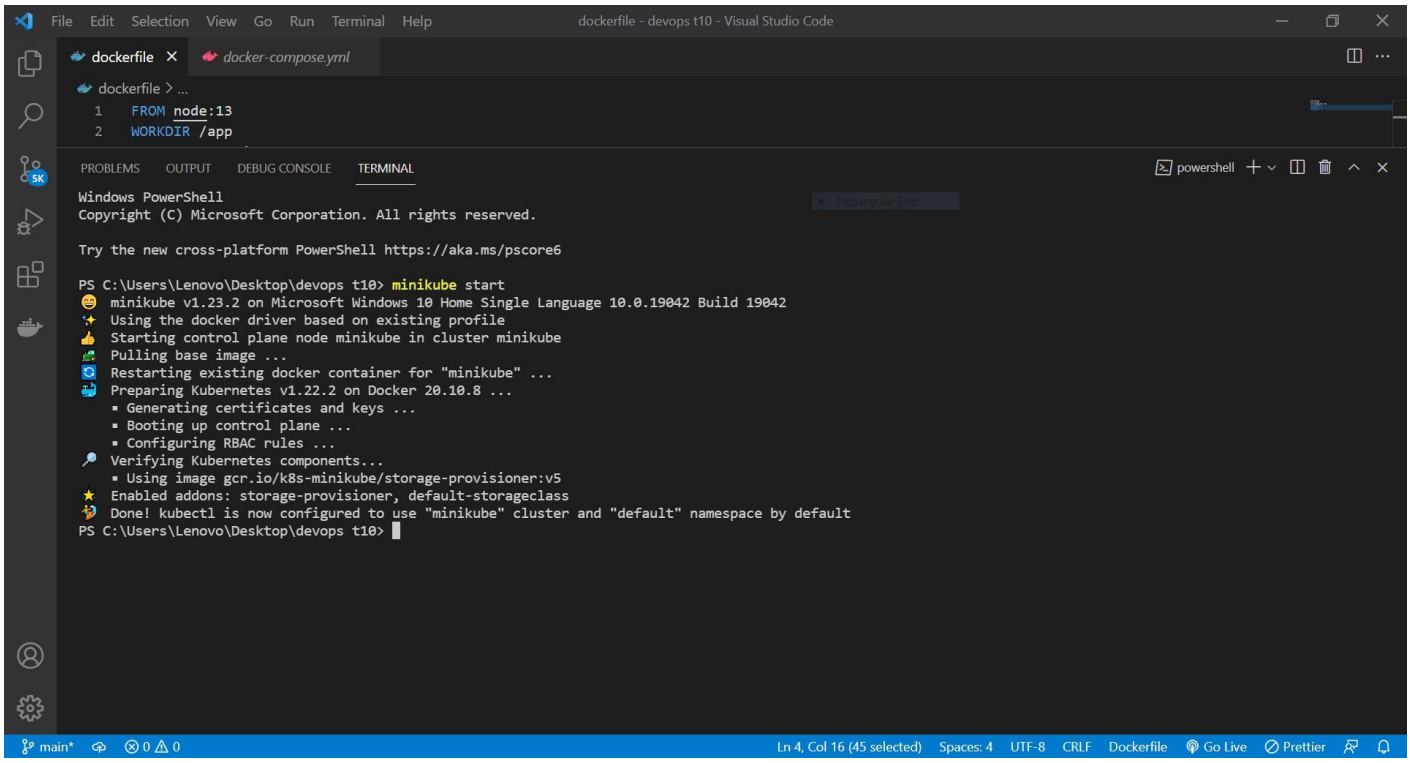
Step 6: Upload The Image To Docker Registry Docker Hub



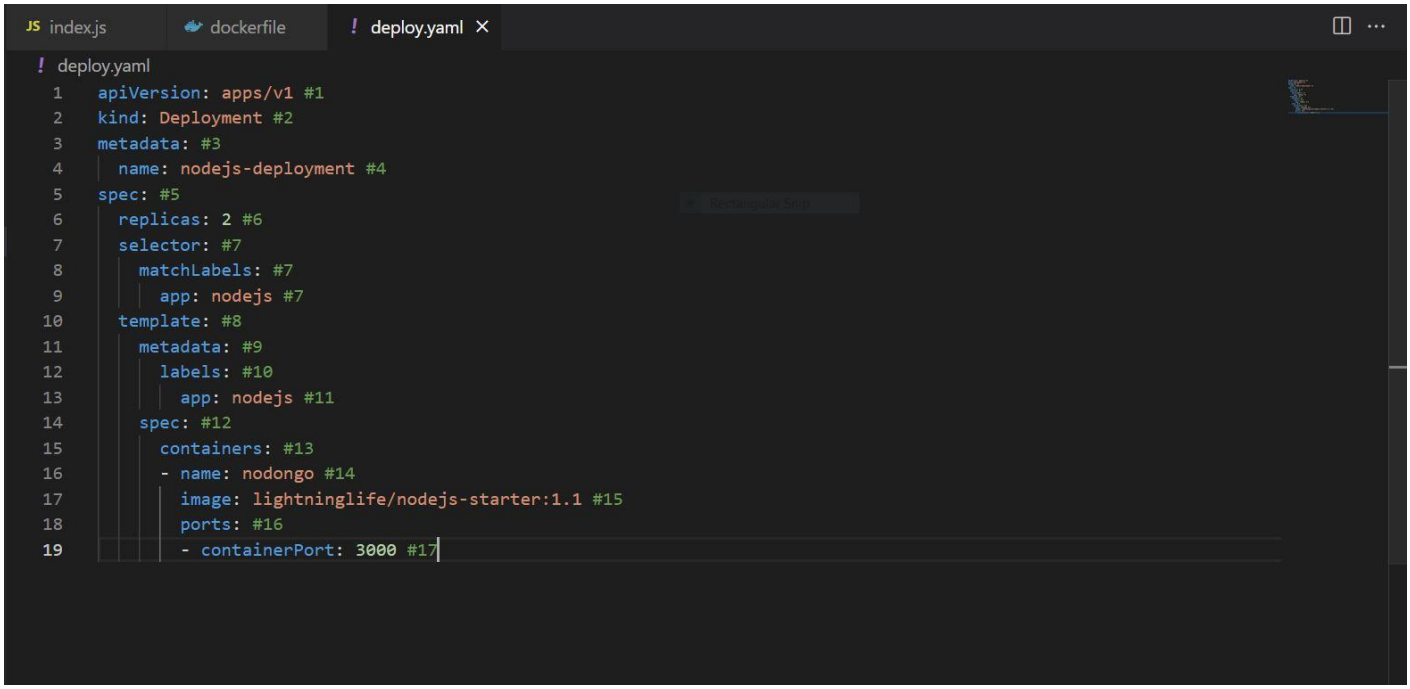




Step 7: Start The Kubernetes Cluster

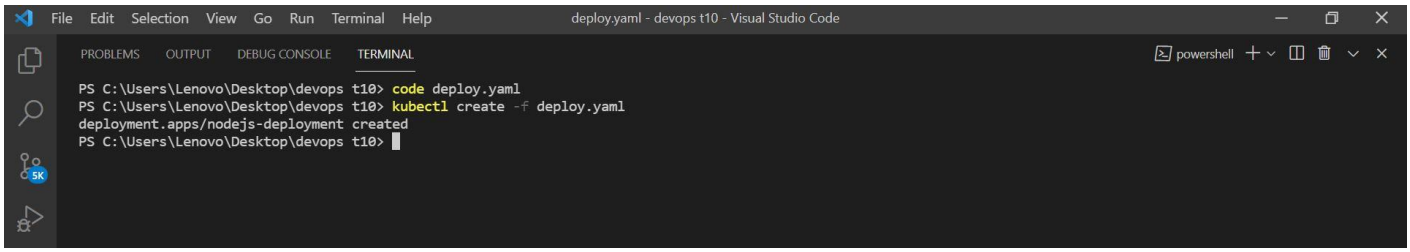


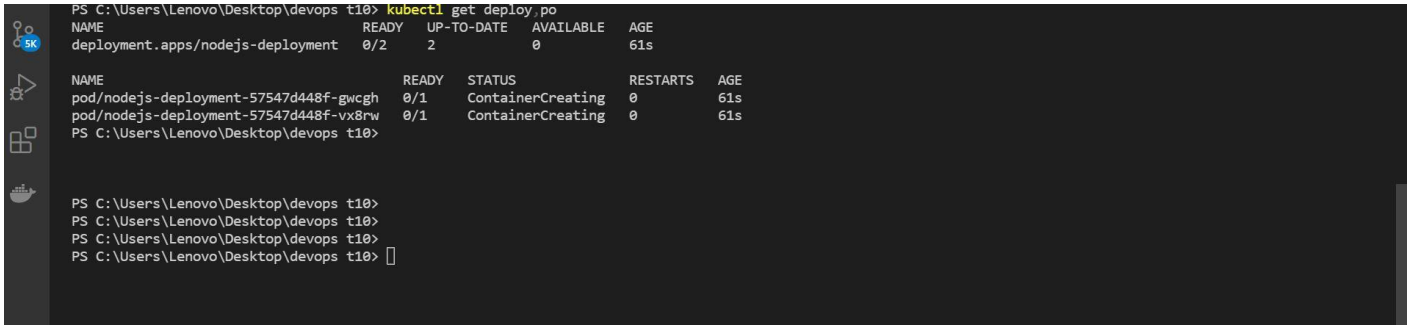
Step 8: Define YAML File To Create A Deployment In Kubernetes Cluster



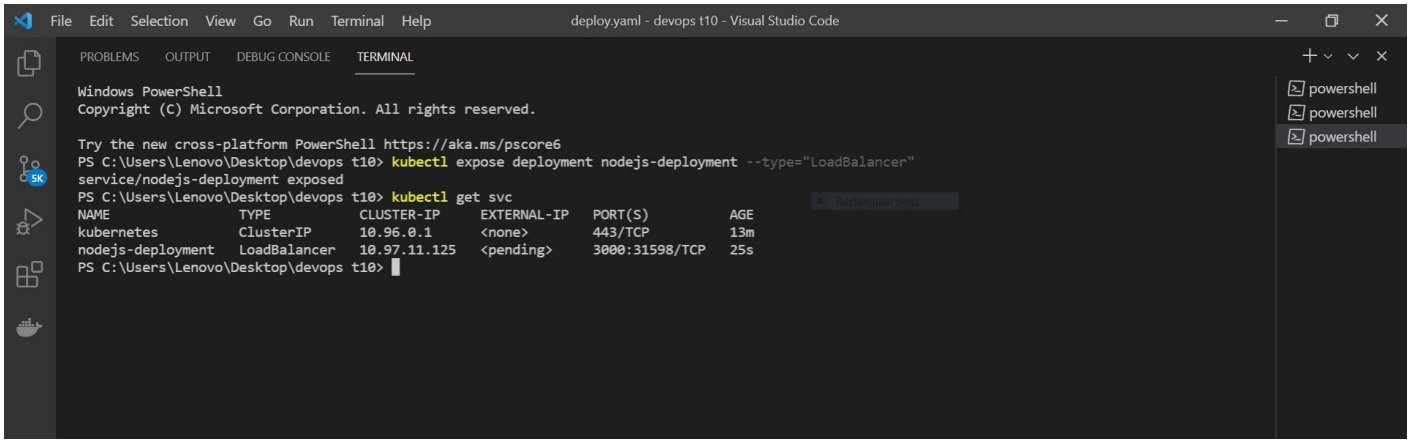
Step 9: Create Deployment In Kubernetes Cluster

create a deployment from this YAML file.
$ kubectl create -f deploy.yaml

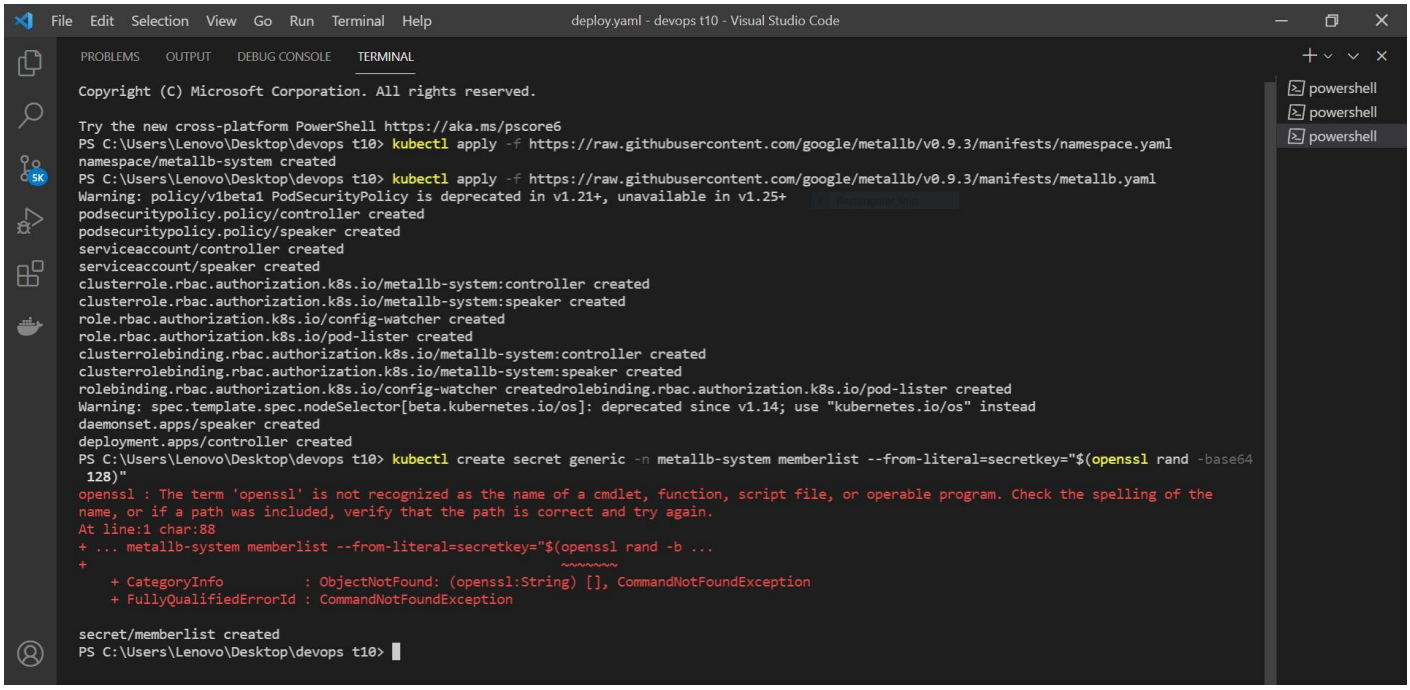




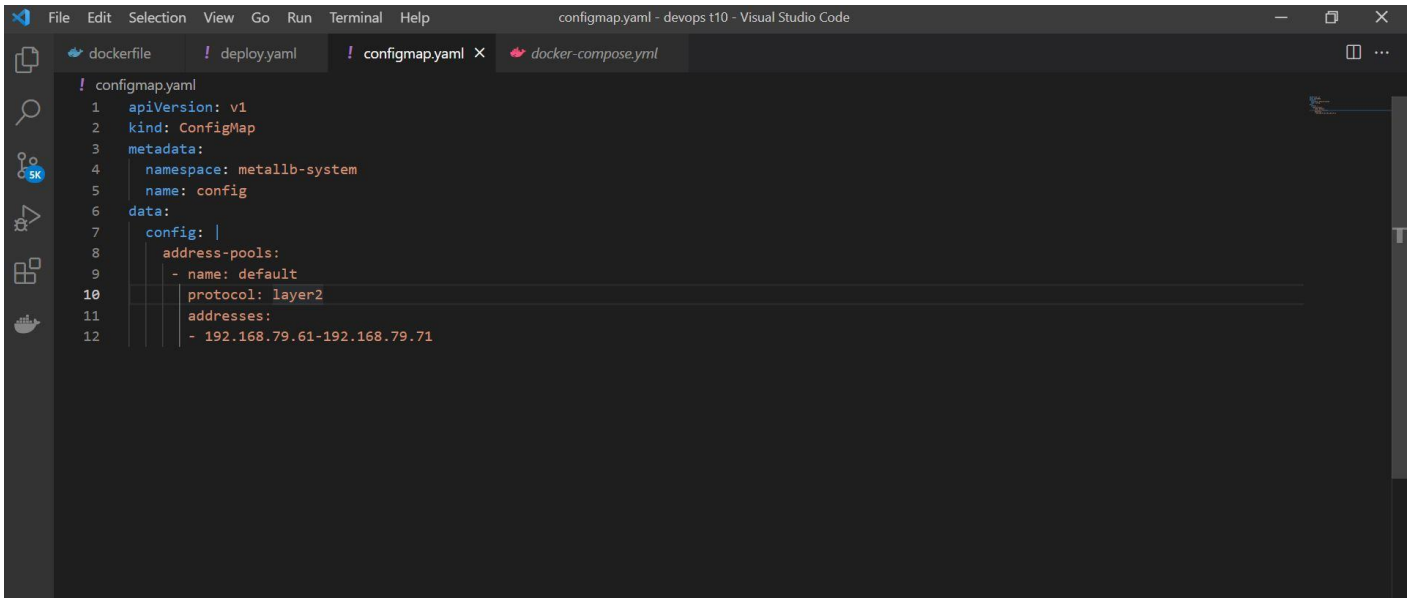
Step 10: Expose The Deployment To The Internet



Step 11: Using MetalLB In Your Minikube Environment



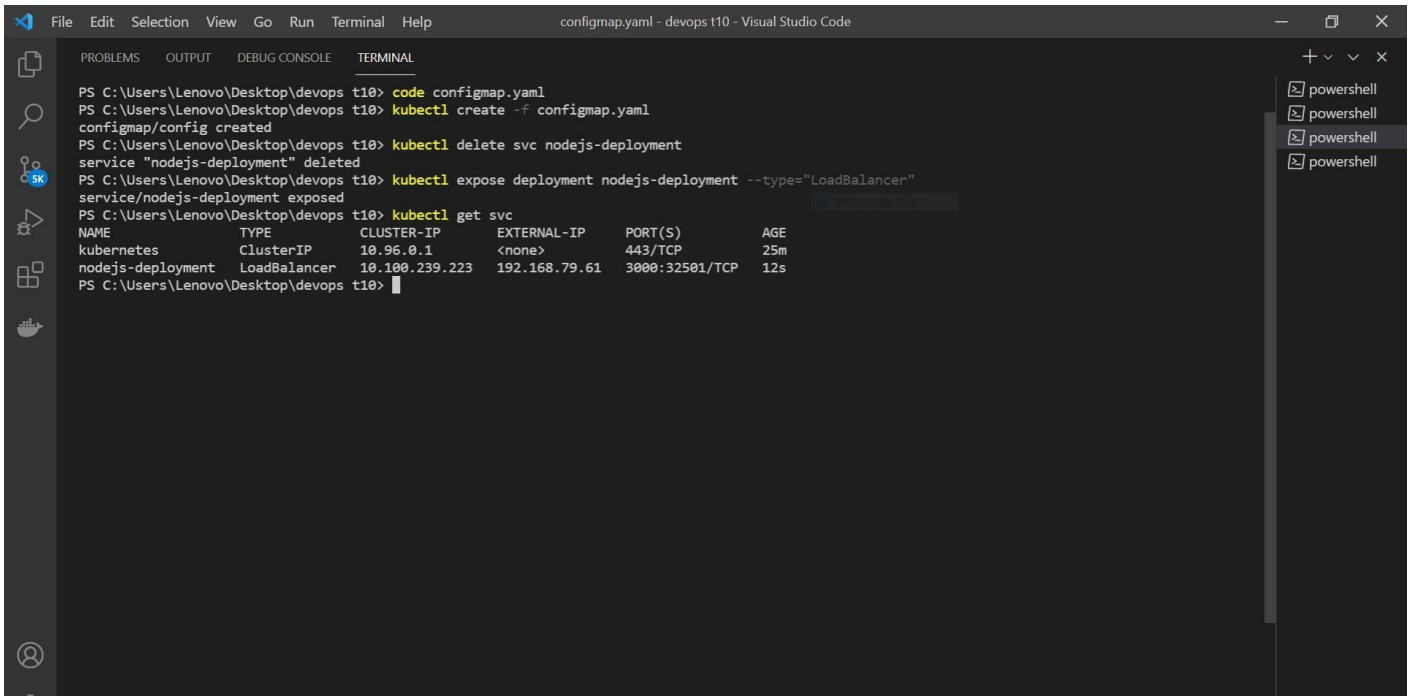
create a config map for the address pool by running the following command: **$ code configmap.yaml**



In this configuration, MetalLB is instructed to hand out addresses from **192.168.79.61** to **192.168.79.71**. After that, we'll create a config map in the metallb-system namespace.

$ kubectl create -f configmap.
$ yaml kubectl delete svc nodejs-deployment
$ kubectl expose deployment nodejs-deployment--type="LoadBalancer"

Now that's done, you'll be getting External IP.



"Thank you"

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