DevOps(DS457)

Assignment

Developing and Deploying a Node.js app from Docker to Kubernetes

Submitted to

Dr.Uma.S

Submitted by

Team13

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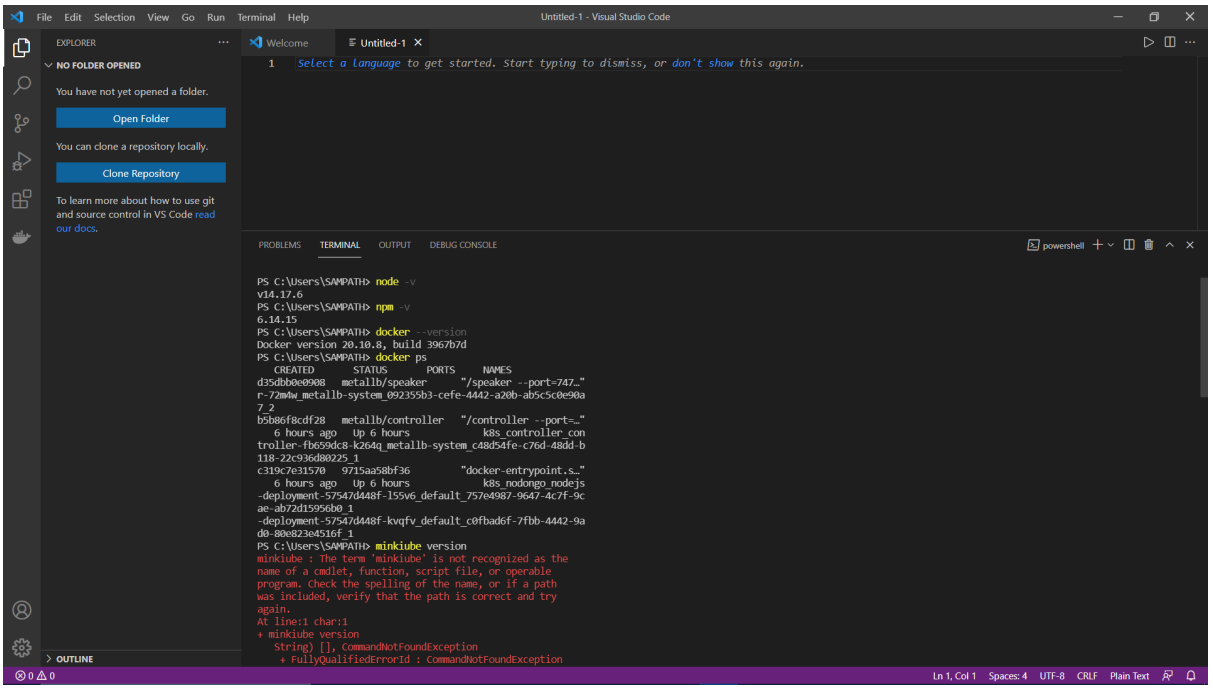
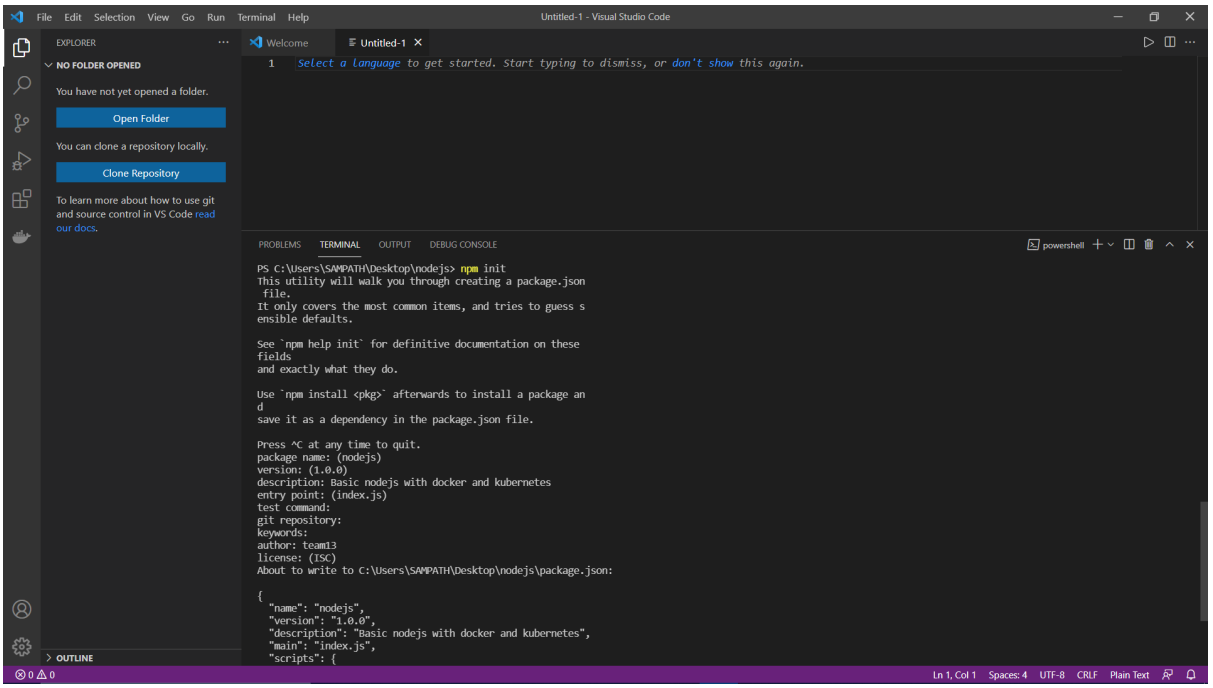
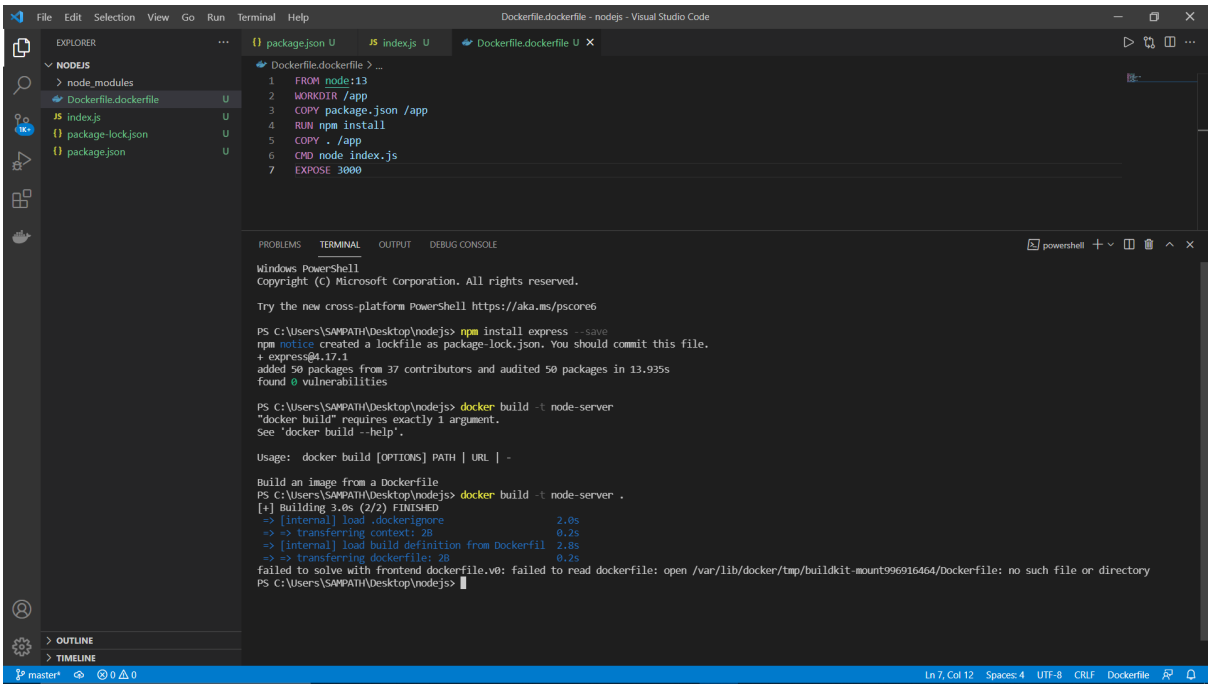
Assignment:1.2:

Installing and checking Node,npm,Docker,Kubernetes,Minikube:

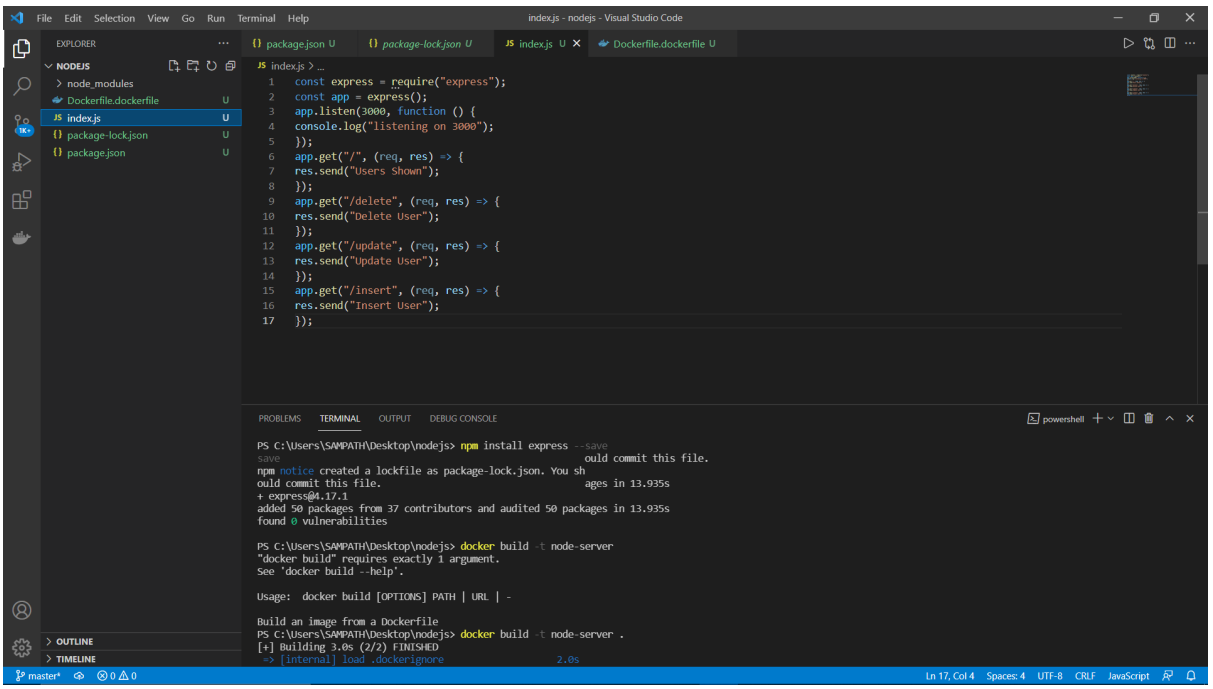


Initialising node application and installing the express server:

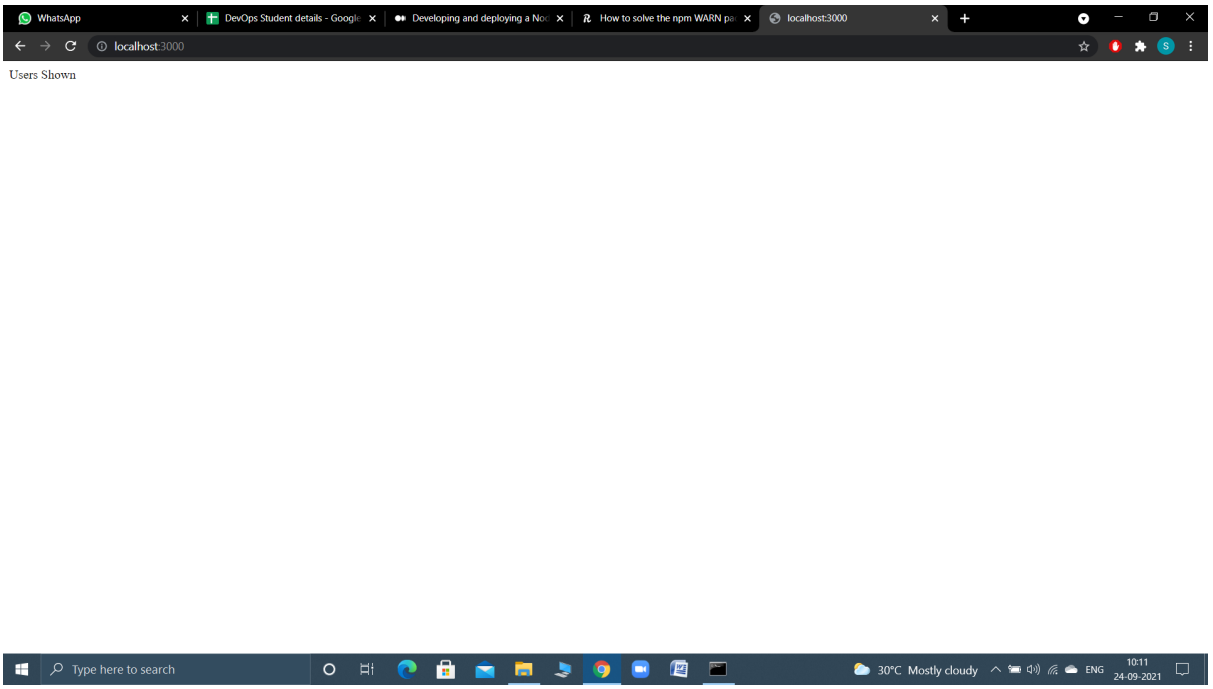




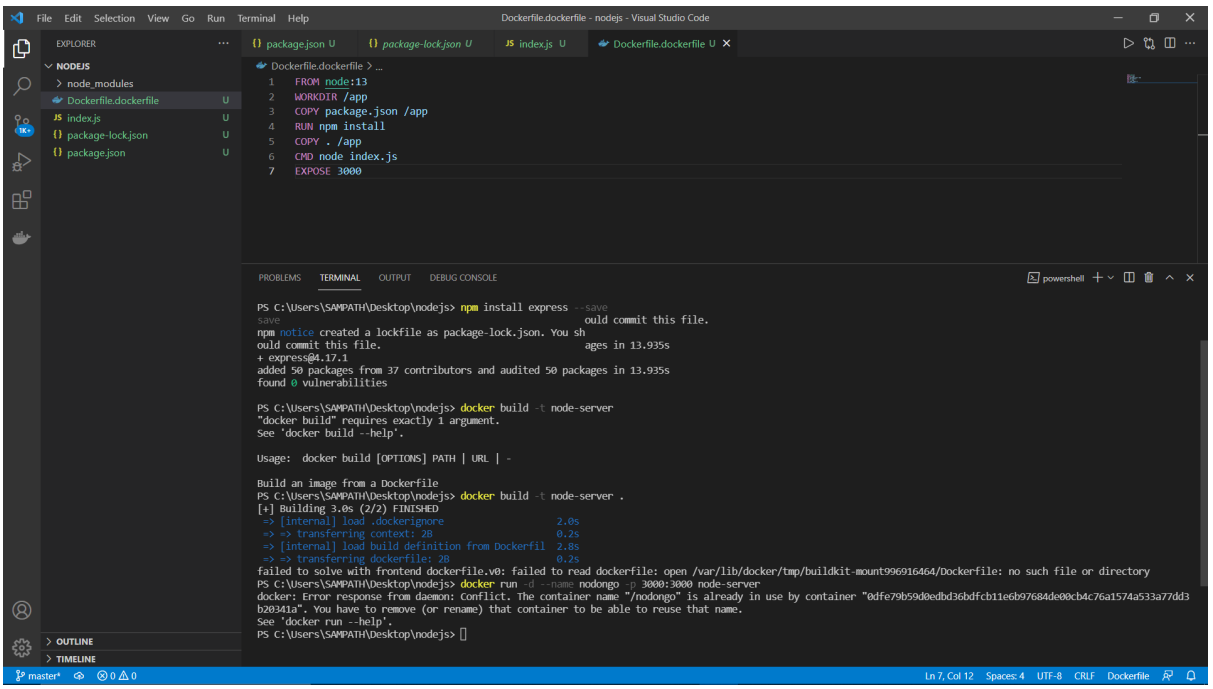
Configuring the application:



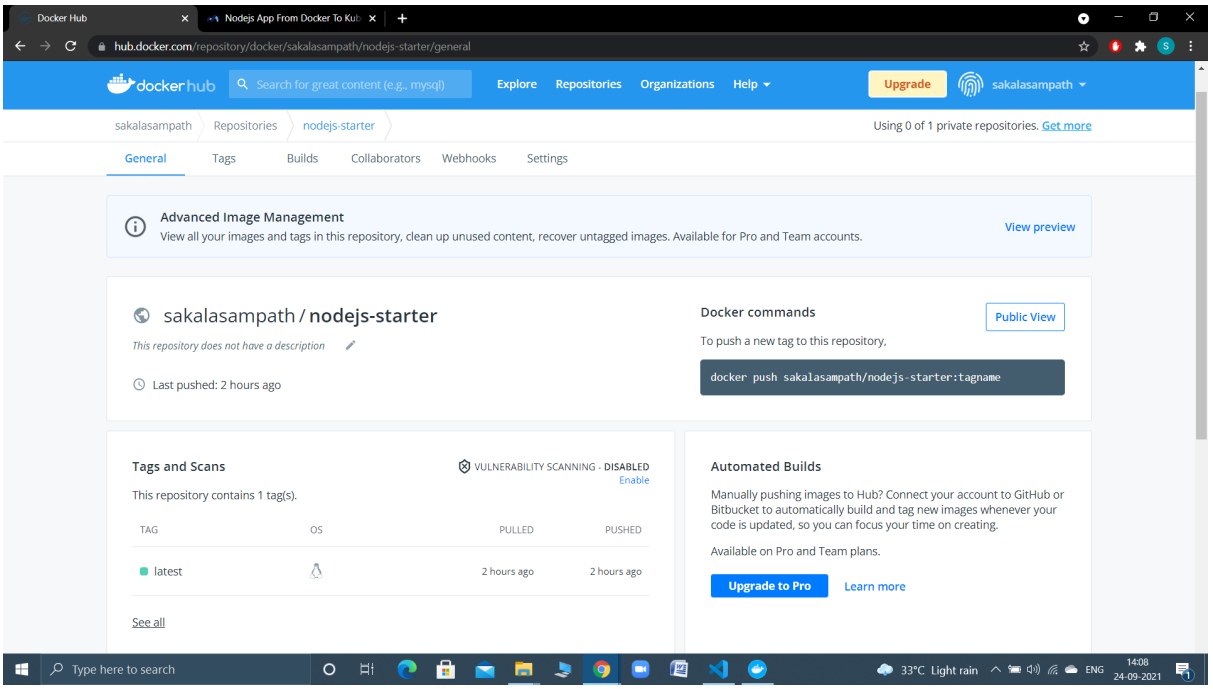
Nodejs web app by browsing localhost:3000/



Dockerizing the node-server and building the image:

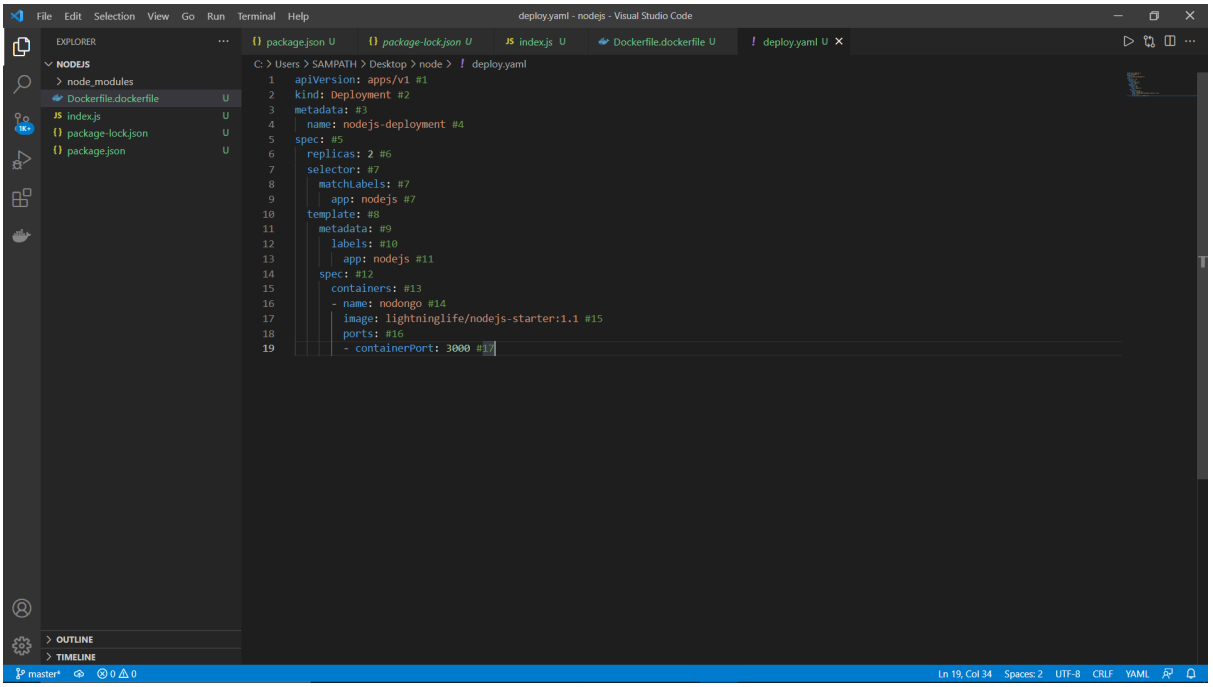


Create and Run the container and then upload the image to docker registry Docker-hub



Start the kubernete cluster using command:$ minikube start

Define YAML File To Create A Deployment In Kubernetes Cluster



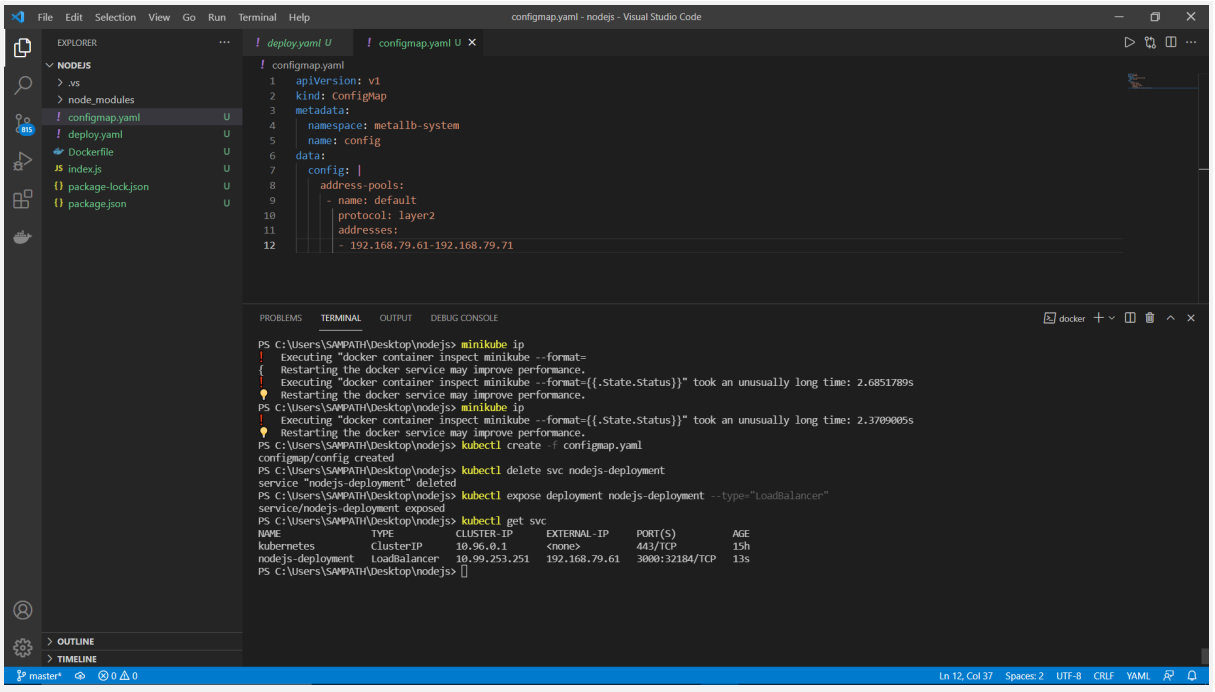
Creating Deployment in Kubernete cluster by using command:

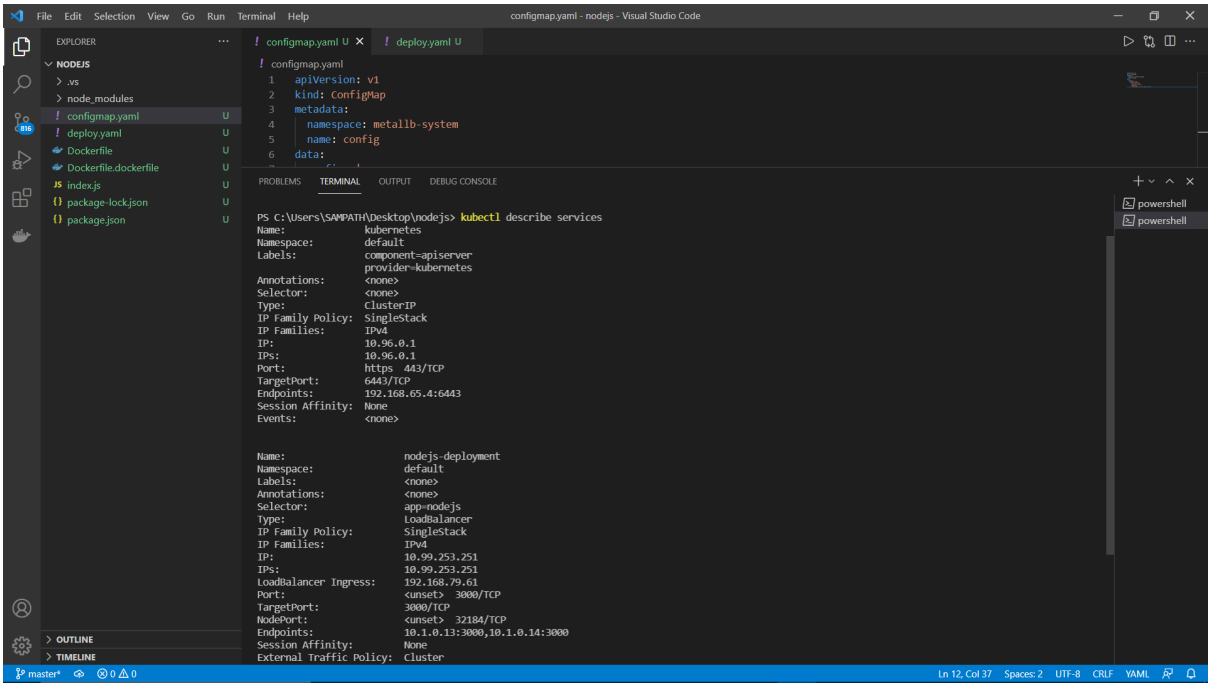
$ kubectl create -f deploy.yaml

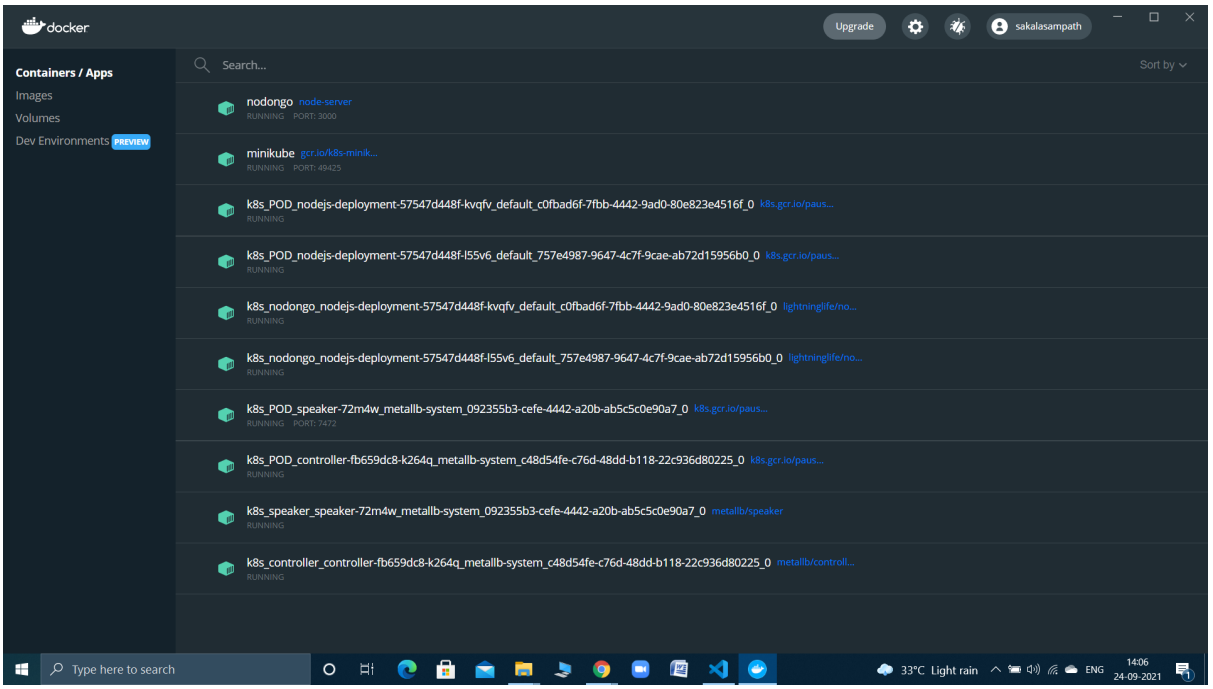
Expose Deployment to Internet:

$ kubectl expose deployment nodejs-deployment--type=”LoadBalancer”

Using MetalLB in Minikube environment and create a config map for the address pool:

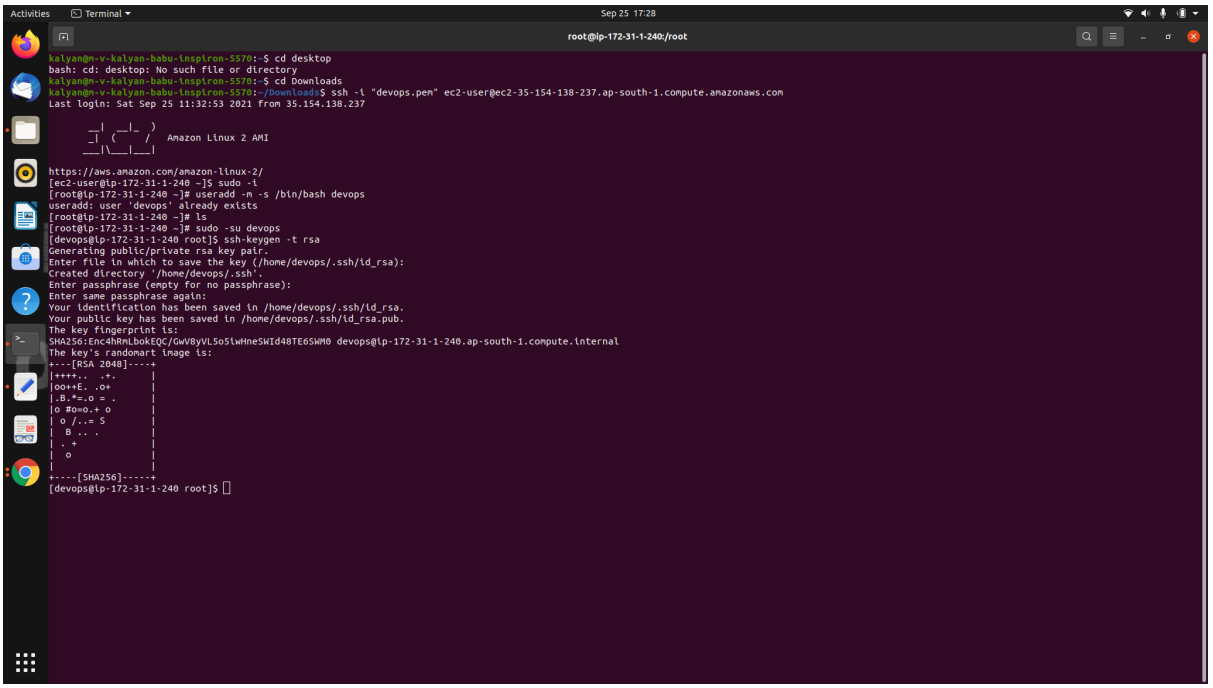



File Edit Selection View Go Run Terminal Help
configmap.yaml - nodejs - Visual Studio Code
EXPLORER
NODEJS
.vs
node_modules
configmap.yaml
deploy.yaml
Dockerfile
Dockerfile.dockerfile
index.js
package-lock.json
package.json
configmap.yaml U
deploy.yaml U
apiVersion: v1
kind: ConfigMap
metadata:
namespace: metallb-system
name: config
data:
PROBLEMS TERMINAL OUTPUT DEBUG CONSOLE
PS C:\Users\SAMPATH\Desktop\nodejs> kubectl describe services
Name: kubernetes
Namespace: default
Labels: component=apiserver
provider=kubernetes
Annotations: <none>
Selector: <none>
Type: ClusterIP
IP Family Policy: SingleStack
IP Families: IPv4
IP: 10.96.0.1
IPs: 10.96.0.1
Port: https 443/TCP
TargetPort: 6443/TCP
Endpoints: 192.168.65.4:6443
Session Affinity: None
Events: <none>
Name: nodejs-deployment
Namespace: default
Labels: <none>
Annotations: <none>
Selector: app=nodejs
Type: LoadBalancer
IP Family Policy: SingleStack
IP Families: IPv4
IP: 10.99.253.251
IPs: 10.99.253.251
LoadBalancer Ingress: 192.168.79.61
Port: <unset> 3000/TCP
TargetPort: 3000/TCP
NodePort: <unset> 32184/TCP
Endpoints: 10.1.0.13:3000,10.1.0.14:3000
Session Affinity: None
External Traffic Policy: Cluster
powershell
powershell
OUTLINE
TIMELINE
master*
Ln 12, Col 37 Spaces: 2 UTF-8 CRLF YAML


docker
Upgrade
sakalasampath
Containers / Apps
Images
Volumes
Dev Environments PREVIEW
Search...
Sort by
nodongo node-server
RUNNING PORT: 3000
minikube gcr.io/k8s-minik...
RUNNING PORT: 49425
k8s_POD_nodejs-deployment-57547d448f-kvqfv_default_c0fbad6f-7fbb-4442-9ad0-80e823e4516f_0 k8s.gcr.io/paus...
RUNNING
k8s_POD_nodejs-deployment-57547d448f-l55v6_default_757e4987-9647-4c7f-9cae-ab72d15956b0_0 k8s.gcr.io/paus...
RUNNING
k8s_nodongo_nodejs-deployment-57547d448f-kvqfv_default_c0fbad6f-7fbb-4442-9ad0-80e823e4516f_0 lightninglife/no...
RUNNING
k8s_nodongo_nodejs-deployment-57547d448f-l55v6_default_757e4987-9647-4c7f-9cae-ab72d15956b0_0 lightninglife/no...
RUNNING
k8s_POD_speaker-72m4w_metallb-system_092355b3-cefe-4442-a20b-ab5c5c0e90a7_0 k8s.gcr.io/paus...
RUNNING PORT: 7472
k8s_POD_controller-fb659dc8-k264q_metallb-system_c48d54fe-c76d-48dd-b118-22c936d80225_0 k8s.gcr.io/paus...
RUNNING
k8s_speaker_speaker-72m4w_metallb-system_092355b3-cefe-4442-a20b-ab5c5c0e90a7_0 metallb/speaker
RUNNING
k8s_controller_controller-fb659dc8-k264q_metallb-system_c48d54fe-c76d-48dd-b118-22c936d80225_0 metallb/controll...
RUNNING
Type here to search
33°C Light rain
ENG
14:06
24-09-2021

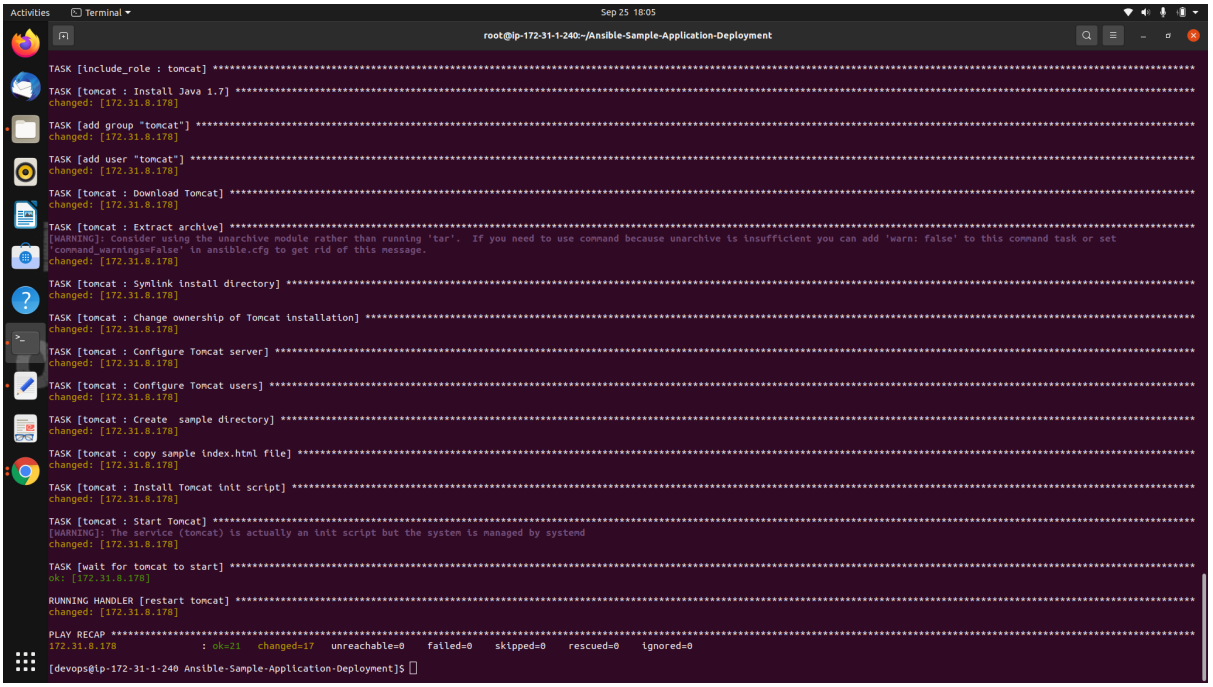
Task 3:

1.Creating Devops User and Generating SSH Key.

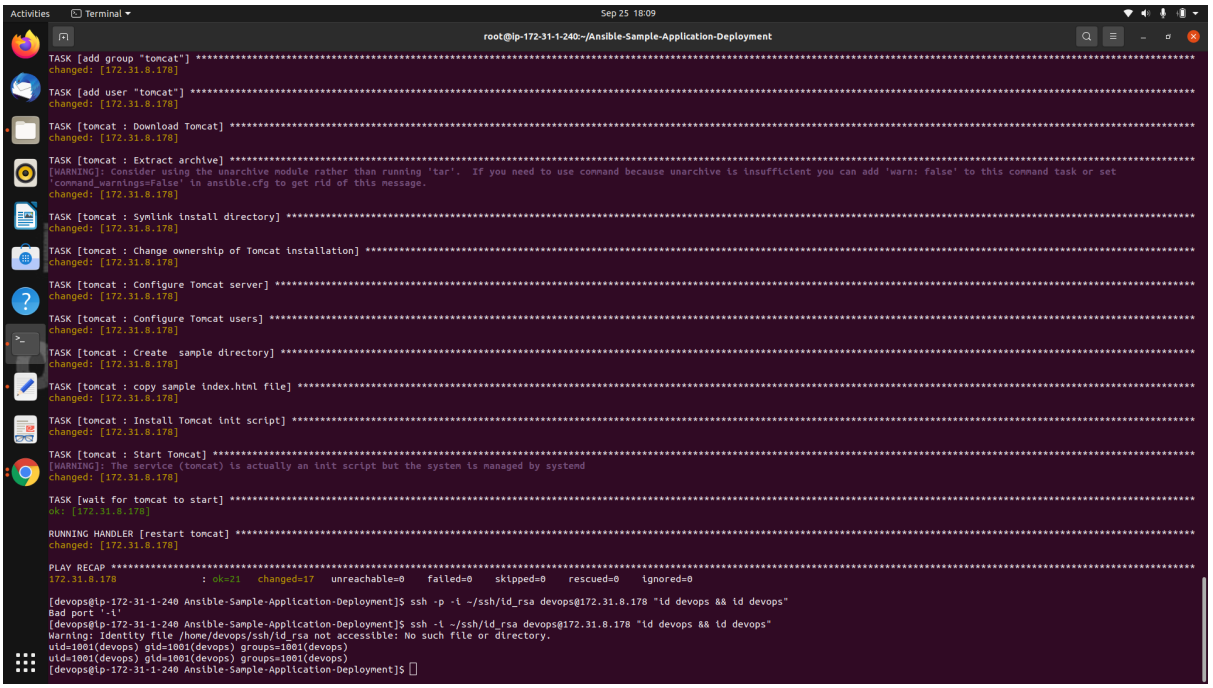


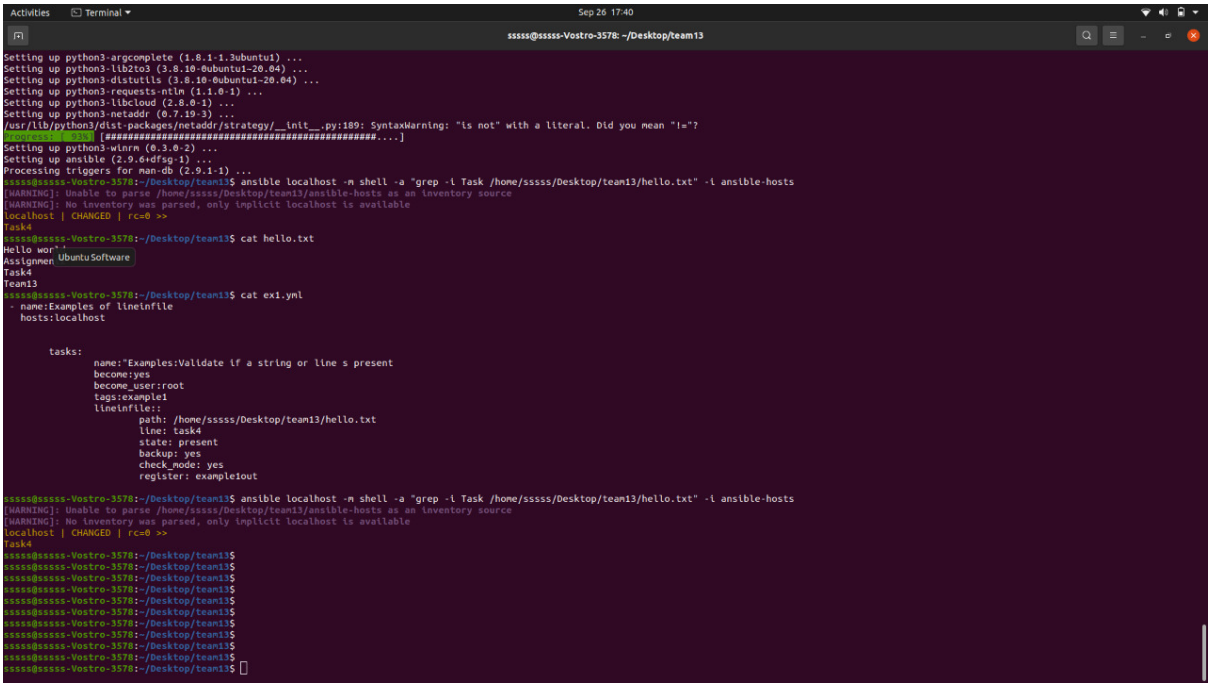
2.How to Run a Playbook

- You need to provide the user `ec2-user` and the key to connect to the remote host.
- I am assuming all the remote hosts have same keys
- You need to use the .pem file to connect initially
- PEM file need to have specific permission before you can use it directly. If the permission is not set properly you will see the error “It is required that your private key files are NOT accessible by others. This private key will be ignored.”



3.You can see that I am executing an id command with SSH connection and using my(Devops) private key file to login without password.



Task.2.2:

Validate if a line or string present or not