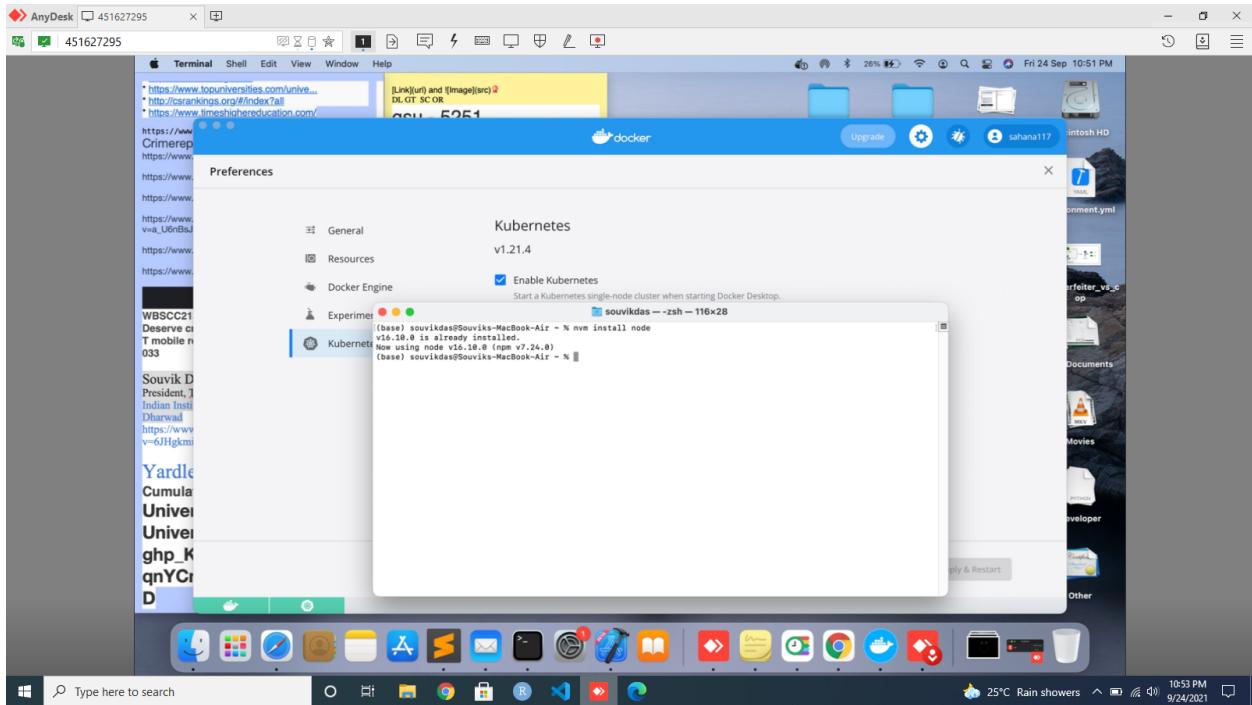
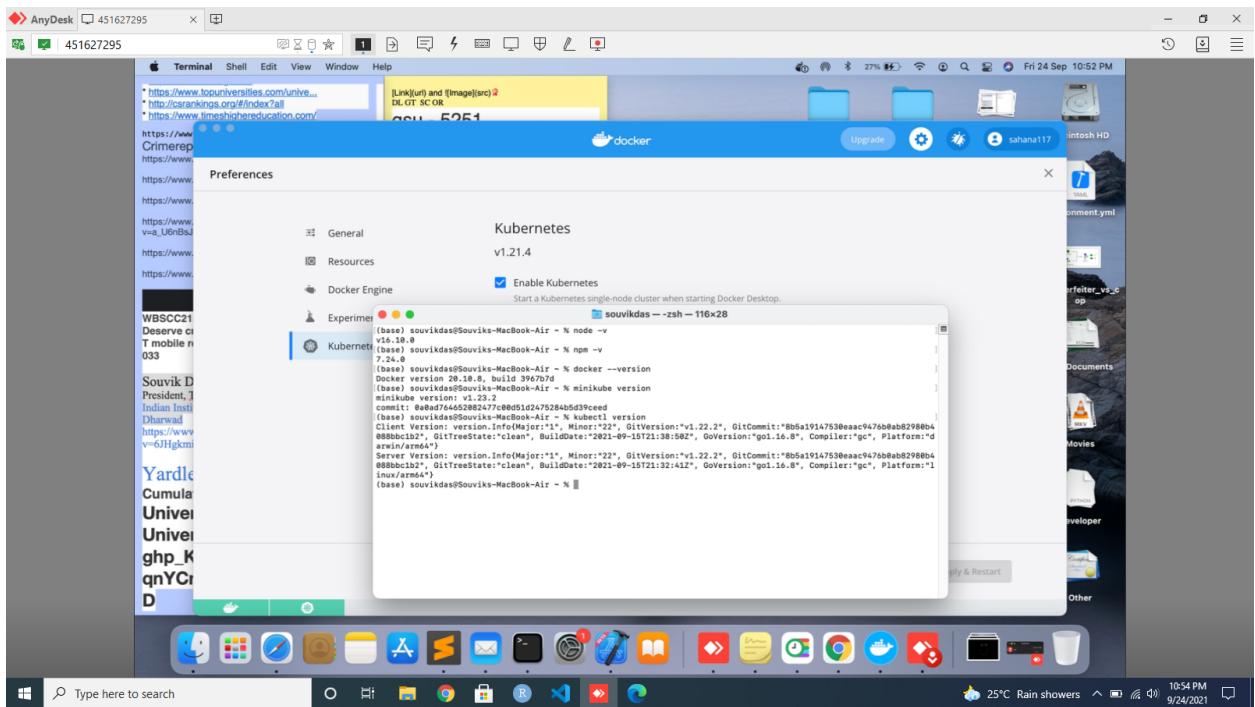


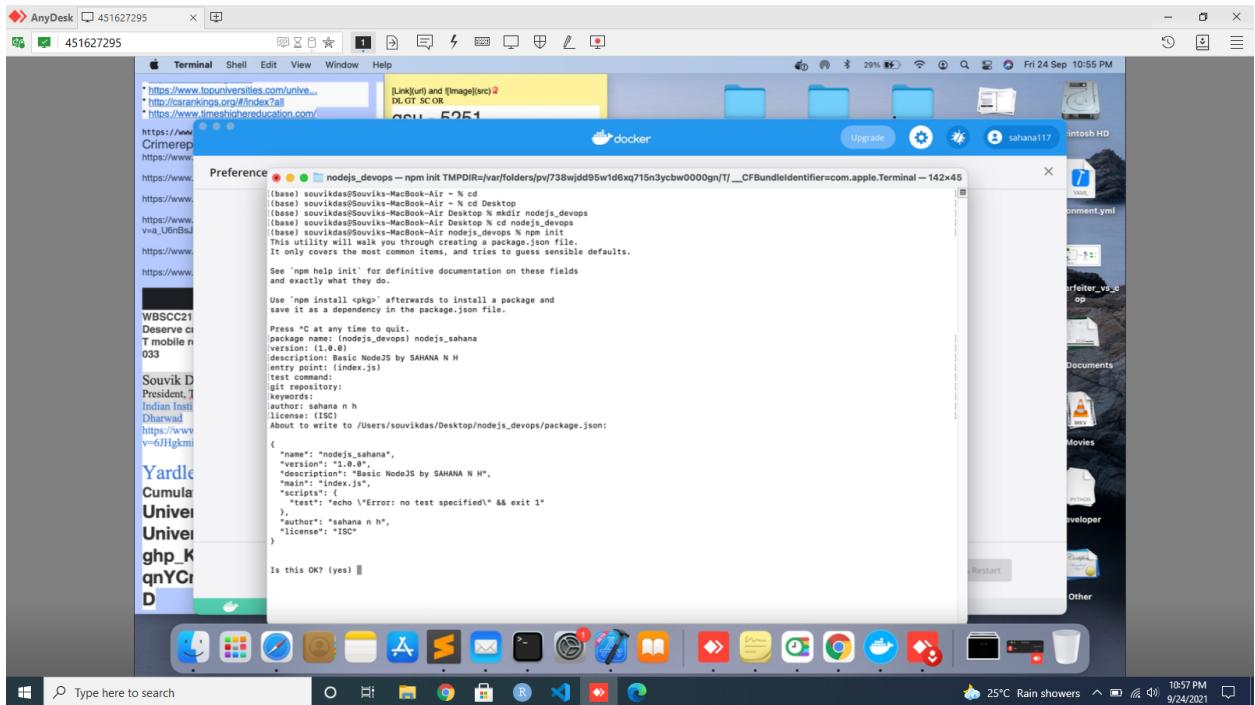
Team 11
Sahana N H
18BCS086
Assignment 1

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

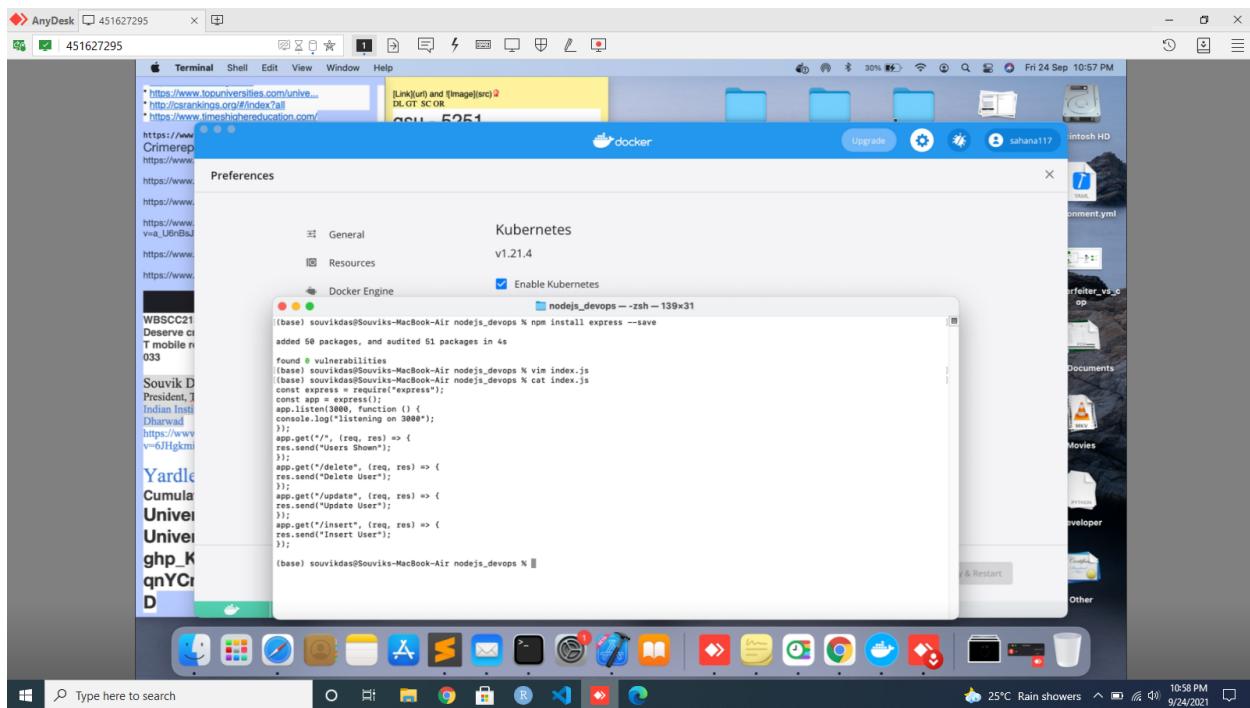




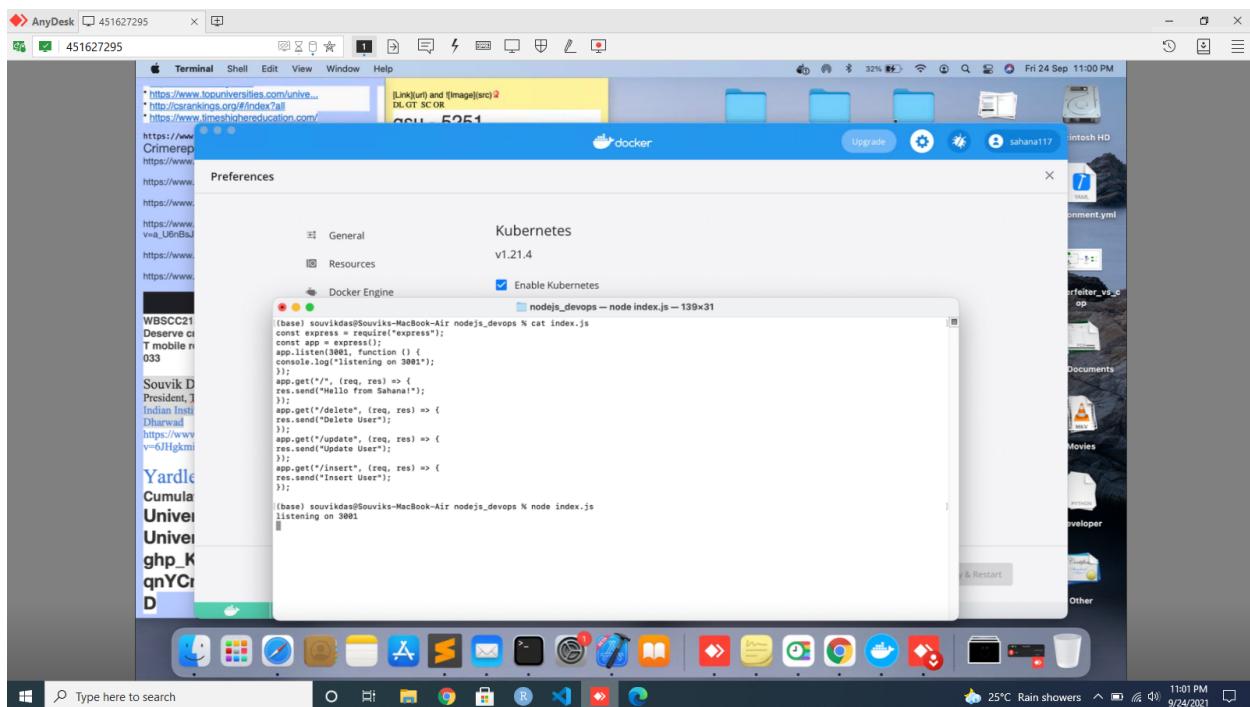
Step1: Make a separate directory and initialize the node application.



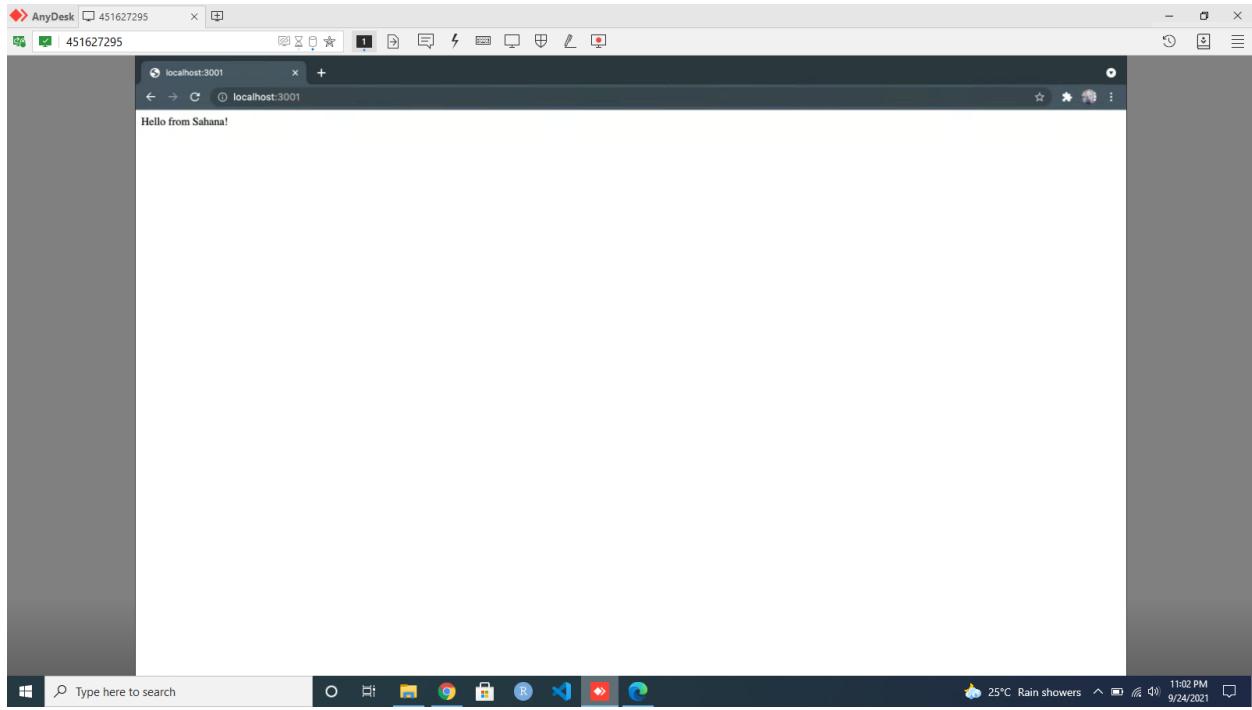
Step2: Installing express Step3: Make index.js file



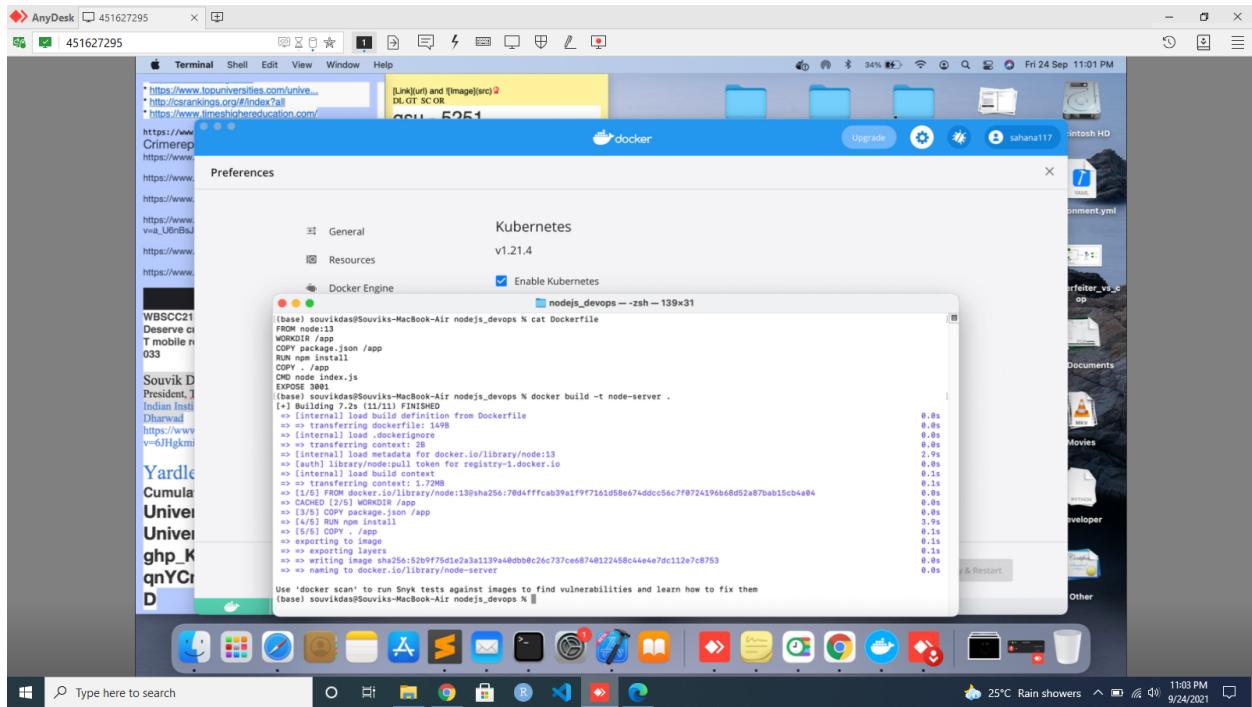
Edited the localhost:3000/

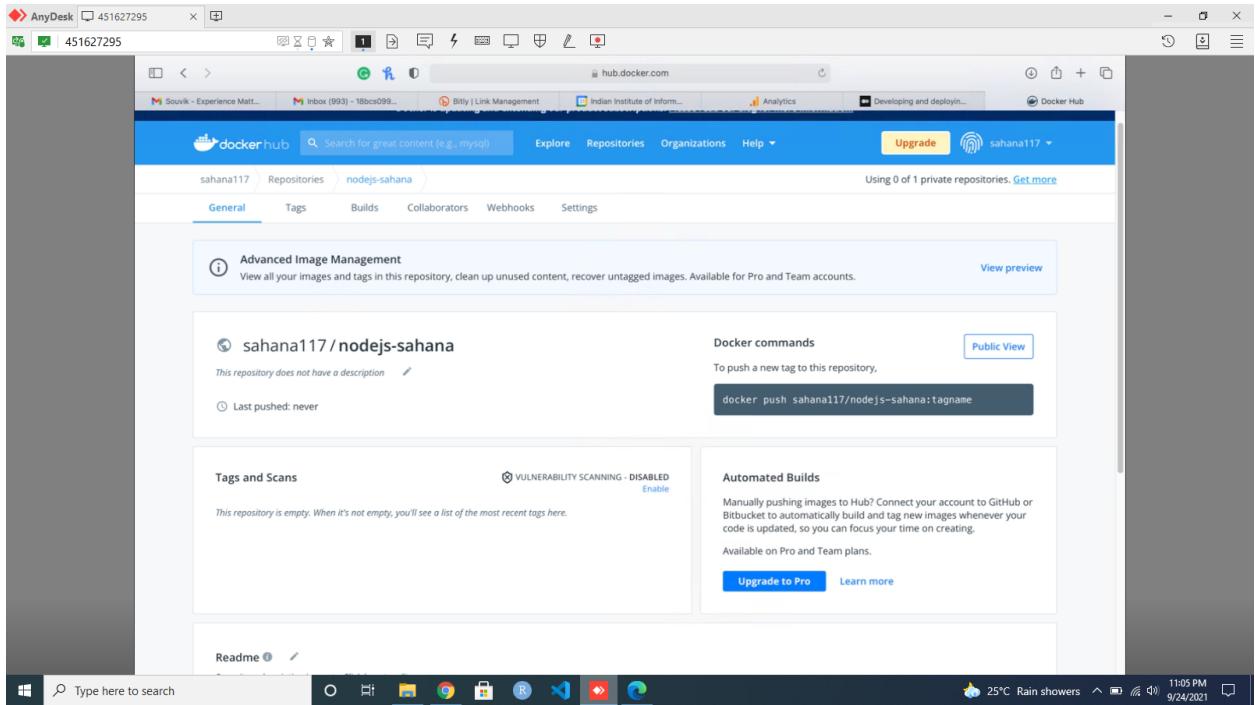


Checking the server by browsing localhost:3001/



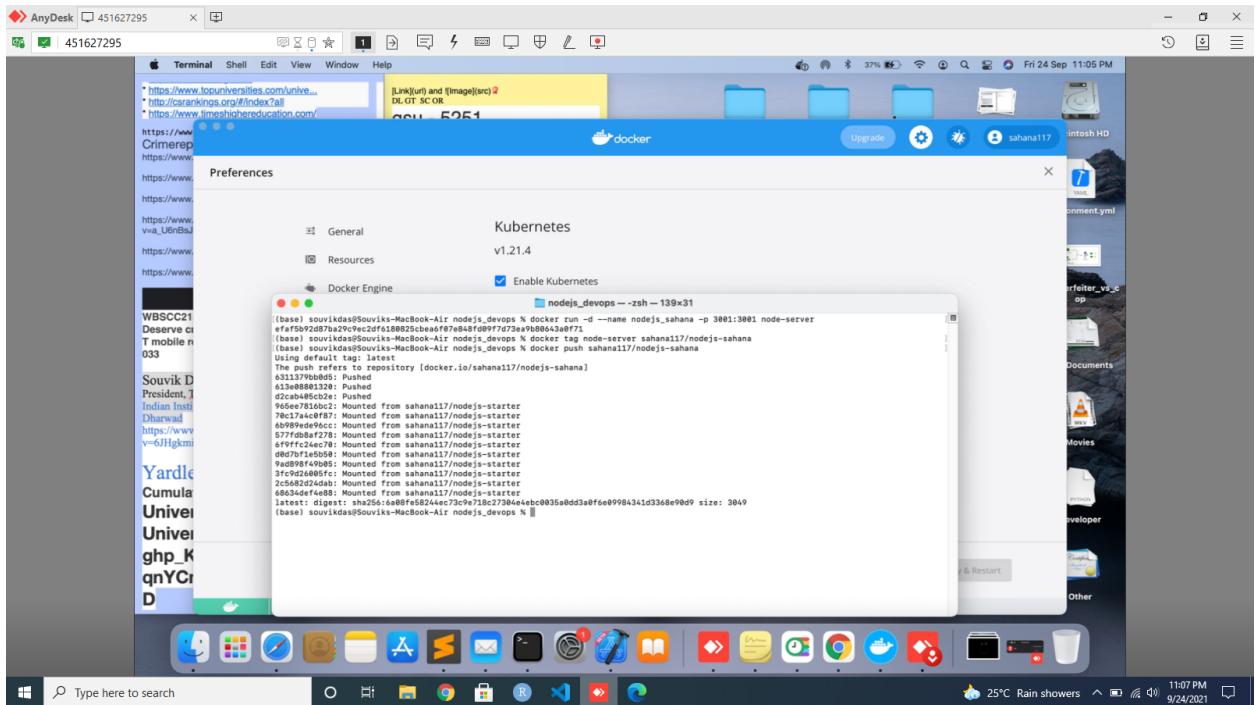
Step4: Dockerizing the node server.





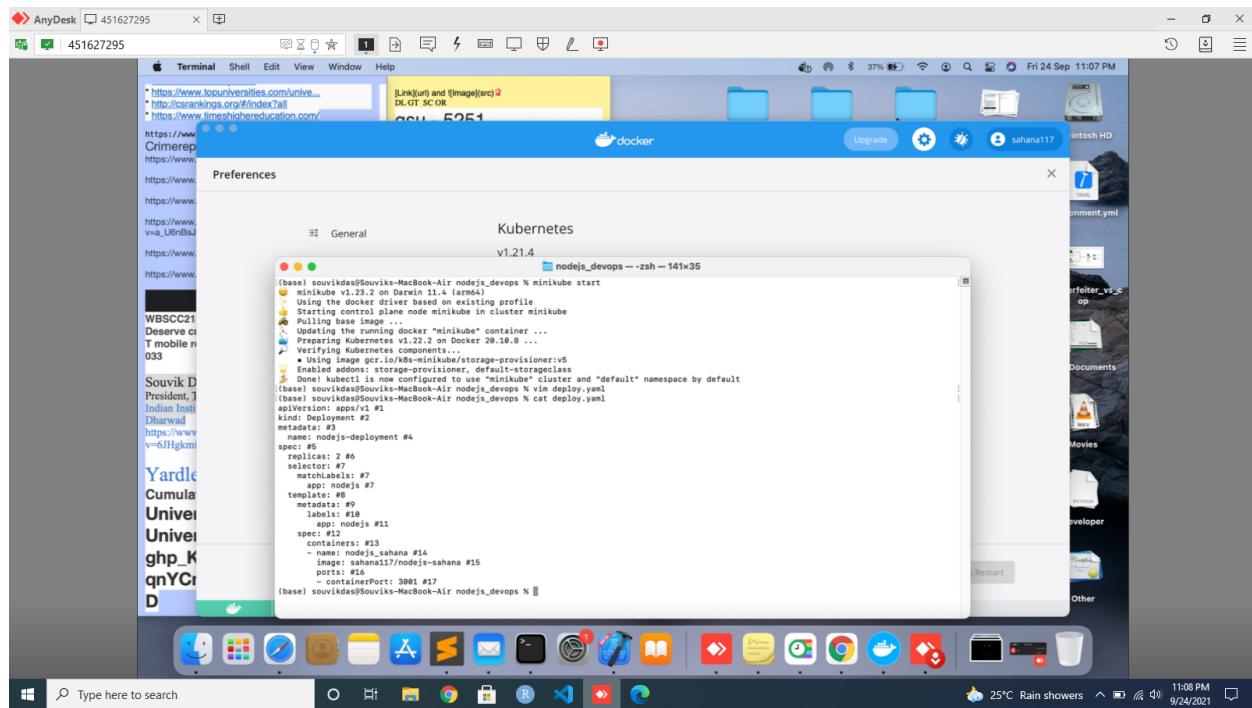
Step5: Create and run the container

Step6: Upload the image to docker registry.



Step7: Start the Kubernetes cluster

Step8: Define Yaml file to create a deployment in kubernetes cluster.

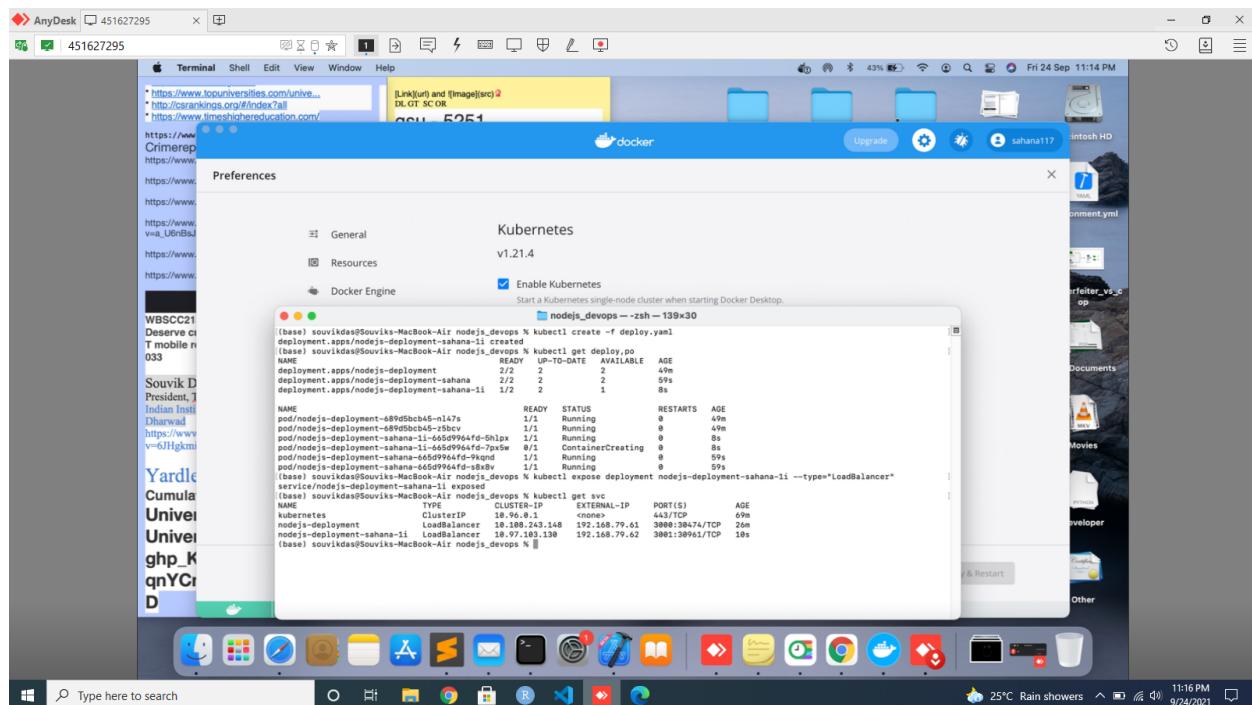


The screenshot shows the Docker Desktop application running on a Mac OS X desktop. The main window displays the 'Kubernetes' preferences, specifically the 'General' tab. A terminal window is open in the background, showing the command `nodejs_devsops` and its output, which includes the creation of a minikube cluster and the deployment of a 'nodejs' application. The Docker Engine tab is also visible, showing the status of the 'nodejs_deployment-sahana-11' pod.

```
(base) souvikdas@Souviks-MacBook-Air nodejs_devsops % minikube start
minikube v1.29.2 on Darwin 11.4 (arm64)
Using the docker driver based on existing profile
Starting minikube in cluster minikube
Pulling base image ...
Updating the running docker image in hub "minikube" container ...
Preparing Docker image for "minikube" on Docker 20.10.0 ...
Verifying Kubernetes components...
* Using image gcr.io/k8s-minikube/strategic-upgrader:v5
* Using image gcr.io/k8s-minikube/metrics-exporter:v1.0.0
* Using image gcr.io/k8s-minikube/default-storageclass:v1.0.0
Done! minikube is now configured to use "minikube" cluster and "default" namespace by default
(base) souvikdas@Souviks-MacBook-Air nodejs_devsops % vim deploy.yaml
apiversion: apps/v1
kind: Deployment
metadata: #3
  name: nodejs-deployment #4
spec: #5
  replicas: 2 #6
  selector: #7
    matchLabels: #7
      app: nodejs #7
  template: #8
    metadata: #9
      labels: #10
        app: nodejs #11
    spec: #12
      containers: #12
        - name: nodejs_sahana #14
          image: sahana117/nodejs-sahana #15
          ports: #16
            - containerPort: 3001 #17
(base) souvikdas@Souviks-MacBook-Air nodejs_devsops % cat deploy.yaml
```

Step9: Create deployment in kubernetes cluster.

Step10: Expose the deployment to the internet.



The screenshot shows the Docker Desktop application running on a Mac OS X desktop. The main window displays the 'Kubernetes' preferences, with the 'Enable Kubernetes' checkbox checked. A terminal window is open in the background, showing the command `kubectl create -f deploy.yaml` and its output, which includes the creation of a deployment named 'nodejs-deployment-sahana-11'. The Docker Engine tab is also visible, showing the status of the 'nodejs_deployment-sahana-11' service.

```
(base) souvikdas@Souviks-MacBook-Air nodejs_devsops % kubectl create -f deploy.yaml
deployment.apps/nodejs-deployment-sahana-11 created
(base) souvikdas@Souviks-MacBook-Air nodejs_devsops %
(base) souvikdas@Souviks-MacBook-Air nodejs_devsops % kubectl get deploy,po
NAME                                READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/nodejs-deployment-sahana-11   2/2     2           2           49m
deployment.apps/nodejs-deployment-sahana-11   2/2     2           2           59s
deployment.apps/nodejs-deployment-sahana-11   1/2     1           1           8s
(base) souvikdas@Souviks-MacBook-Air nodejs_devsops % kubectl expose deployment nodejs-deployment-sahana-11 --type="LoadBalancer"
service/nodejs-deployment-sahana-11 exposed
(base) souvikdas@Souviks-MacBook-Air nodejs_devsops %
(base) souvikdas@Souviks-MacBook-Air nodejs_devsops % kubectl get svc
NAME      TYPE        CLUSTER-IP   EXTERNAL-IP   PORT(S)   AGE
kubernetes   ClusterIP   10.96.0.1   <none>       443/TCP   69m
nodejs-deployment   LoadBalancer   18.188.243.148 192.168.79.61   3000:30474/TCP   26m
nodejs-deployment-sahana-11   LoadBalancer   18.97.185.138 192.168.79.62   3001:30961/TCP   10s
(base) souvikdas@Souviks-MacBook-Air nodejs_devsops %
```

