

Create a Kubernetes deployment and a NodePort service for the smitwaman/fastapi:v1 application within the "fastapi" namespace. Here are the steps:

1. **Create a Namespace:** First, create the "fastapi" namespace if it doesn't already exist:

```
apiVersion: v1
```

```
kind: Namespace
```

```
metadata:
```

```
  name: fastapi
```

Apply it using

```
kubectl apply -f namespace.yaml .
```

2. **Create a deployment:**

```
apiVersion: apps/v1
```

```
kind: Deployment
```

```
metadata:
```

```
  name: fastapi-deployment
```

```
  namespace: fastapi
```

```
spec:
```

```
  replicas: 3
```

```
  selector:
```

```
    matchLabels:
```

```
      app: fastapi
```

```
  template:
```

```
    metadata:
```

```
      labels:
```

```
        app: fastapi
```

```
    spec:
```

```
      containers:
```

```
        - name: fastapi-app
```

```
          image: smitwaman/fastapi:v1
```

```
ports:
  - containerPort: 9009

resources:
  limits:
    cpu: "0.5" # Set CPU limit (adjust as needed)
    memory: "256Mi" # Set memory limit (adjust as needed)
```

Apply it using

```
kubectl apply -f fastapi-deployment.yaml .
```

### 3. Service YAML (fastapi-service.yaml): Create a NodePort service YAML file (fastapi-service.yaml) with the following content:

```
apiVersion: v1
kind: Service
metadata:
  name: fastapi-svc
  namespace: fastapi
spec:
  type: LoadBalancer
  selector:
    app: fastapi
  ports:
    - protocol: TCP
      port: 9009
      targetPort: 9009
```

Apply it using

```
kubectl apply -f fastapi-service.yaml .
```

### 4. Access the FastAPI Application on minikube in browser :

Run following command

```
minikube start service fastapi-svc -n fastapi
```

```
sparx@DESKTOP-0N62A4P:~/Wobot_Assignment/fastapi_deployment$ ls
deployment.yaml namespace.yaml service.yaml
sparx@DESKTOP-0N62A4P:~/Wobot_Assignment/fastapi_deployment$ kubectl apply -f namespace.yaml
namespace/fastapi created
sparx@DESKTOP-0N62A4P:~/Wobot_Assignment/fastapi_deployment$ kubectl apply -f deployment.yaml
deployment.apps/fastapi-deployment created
sparx@DESKTOP-0N62A4P:~/Wobot_Assignment/fastapi_deployment$ kubectl apply -f service.yaml
service/fastapi-svc created
sparx@DESKTOP-0N62A4P:~/Wobot_Assignment/fastapi_deployment$ minikube service fastapi-svc -n fastapi
```

NAMESPACE	NAME	TARGET PORT	URL
fastapi	fastapi-svc	9009	http://192.168.58.2:31394

Starting tunnel for service fastapi-svc.

NAMESPACE	NAME	TARGET PORT	URL
fastapi	fastapi-svc		http://127.0.0.1:37547

Opening service fastapi/fastapi-svc in default browser...  
http://127.0.0.1:37547  
! Because you are using a Docker driver on linux, the terminal needs to be open to run it.

Here I have edited source code for adding more information

Access URL: <http://127.0.0.1:37847>

