Expose services in the cluster with node port, cluster IP, load balancer

In kubernetes, service can be expoaed in different ways such as follow:

1. Exposing a Service with ClusterIP:

In the cluster IP we will create a yaml file such as follow

a) Creating a Deployment

```
# nginx-deployment.yaml
apiVersion: apps/v1
kind: Deployment
metadata:
  name: nginx-deployment
spec:
  replicas: 2
  selector:
    matchLabels:
      app: nginx
  template:
    metadata:
      labels:
        app: nginx
    spec:
      containers:
      - name: nginx
        image: nginx:latest
        ports:
        - containerPort: 80
```

Now we apply the deployment:

```
$ kubectl apply -f nginx-deployment.yaml
```

b) Now expose the Deployment as a ClusterIP Service

```
# nginx-clusterip-service.yaml
apiVersion: v1
kind: Service
metadata:
  name: nginx-clusterip-service
spec:
  type: ClusterIP
  selector:
    app: nginx
  ports:
    - protocol: TCP
```

```
    port: 80
    targetPort: 80
```

Again applying the service:
$ kubectl apply -f nginx-clusterip-service.yaml

c) Now verifying the Service

$ kubectl get services

This will show details about service

2. Exposing a Service with NodePort

NodePort exposes the service on a static port on each node's IP.

a) Expose the Deployment as a NodePort Service

```
# nginx-nodeport-service.yaml
apiVersion: v1
kind: Service
metadata:
  name: nginx-nodeport-service
spec:
  type: NodePort
  selector:
    app: nginx
  ports:
    - protocol: TCP
      port: 80
      targetPort: 80
      nodePort: 30007
```

Now applying the service:
$ kubectl apply -f nginx-nodeport-service.yaml
```

b) Verifying the Service

$ kubectl get services
```

3. Exposing a Service with LoadBalancer

a) Expose the Deployment as a LoadBalancer Service

```
# nginx-loadbalancer-service.yaml
apiVersion: v1
kind: Service
metadata:
  name: nginx-loadbalancer-service
spec:
  type: LoadBalancer
  selector:
    app: nginx
  ports:
    - protocol: TCP
      port: 80
      targetPort: 80
```

Applying the service:

```
$ kubectl apply -f nginx-loadbalancer-service.yaml
```

b) Verify the Service

```
$ kubectl get services
```
```
```