**TASK 4**

**Start Minikube**

* + Minikube is a lightweight Kubernetes tool that runs on your local machine.
  + It is initialized using the **Docker driver**, allowing Kubernetes to run as containers inside Docker.
* **Deploy the Application**
  + A **Kubernetes deployment** is created to manage an **nginx** application.
  + This ensures the app is running with the desired number of replicas.
* **Expose via NodePort**
  + By default, Kubernetes pods are not accessible externally.
  + The **NodePort service** is used to assign a specific port, making the application accessible from outside the cluster.
* **Check Pods**
  + After deploying the application, verifying the running **pods** ensures that the deployment was successful.
  + If pods are in a **Running** state, the app is correctly deployed.
* **Get Service Details**
  + Kubernetes assigns a **NodePort**, which is needed to access the application.
  + Checking the service details helps find the correct port number.
* **Access the App**
  + The application can be accessed via **Minikube service URL** or using **curl** in the command line.
  + This confirms that the deployment is working properly.
* **Monitor Pods**
  + Continuously monitoring the pod status ensures stability.
  + If a pod crashes or restarts frequently, further troubleshooting is needed.
* **View Logs**
  + Application logs provide detailed information about errors or issues.
  + Checking logs helps in debugging any failures.
* **Review Commands**
  + Keeping track of executed commands allows easy troubleshooting.
  + It helps in reproducing the steps in future deployments.

