Kubernetes Task

Task Description:

Setup minikube at your local and explore creating namespaces (Go through official documentation).

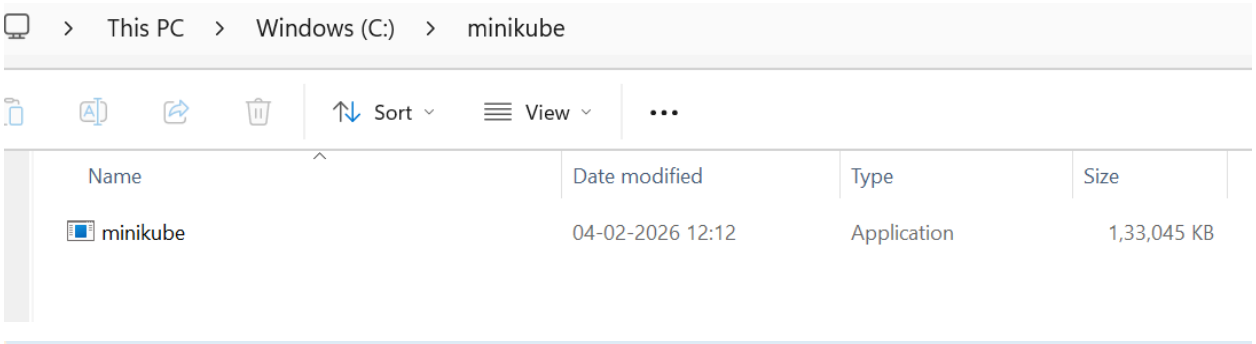
Techstacks needs to be used :

- Vbox, WSL
- Docker
- Minikube
- Kubectl

If the Local system has any issues you can use AWS.

- AWS EC2 (t2.medium)

MiniKube installation:




```
PS C:\WINDOWS\system32> $oldPath = [Environment]::GetEnvironmentVariable('Path', [EnvironmentVariableTarget]::Machine)
if ($oldPath.Split(';') -inotcontains 'C:\minikube'){
  [Environment]::SetEnvironmentVariable('Path', $('{0};C:\minikube' -f $oldPath), [EnvironmentVariableTarget]::Machine)
}


PS C:\WINDOWS\system32>
```

```
C:\Users\hp>minikube start
* minikube v1.38.0 on Microsoft Windows 11 Home Single Language 25H2
* Unable to pick a default driver. Here is what was considered, in preference order:
  - docker: Not healthy: deadline exceeded running "docker version --format {{.Server.Os}}-{{.Server.Version}}:{{.Server
.Platform.Name}}": exit status 1
  - docker: Suggestion: Restart the Docker service <https://minikube.sigs.k8s.io/docs/drivers/docker/>
  - hyperv: Not healthy: Hyper-V requires Administrator privileges
  - hyperv: Suggestion: Right-click the PowerShell icon and select Run as Administrator to open PowerShell in elevated m
ode. <>
* Alternatively you could install one of these drivers:
  - virtualbox: Not installed: unable to find VBoxManage in $PATH
  - podman: Not installed: exec: "podman": executable file not found in %PATH%
  - qemu2: Not installed: exec: "qemu-system-x86_64": executable file not found in %PATH%

X Exiting due to DRV_DOCKER_NOT_RUNNING: Found docker, but the docker service isn't running. Try restarting the docker s
ervice.
```

Namespaces and get clusters:

```
PS C:\WINDOWS\system32> kubectl get namespace
NAME              STATUS   AGE
default           Active   3m54s
kube-node-lease   Active   3m54s
kube-public       Active   3m54s
kube-system       Active   3m54s

PS C:\WINDOWS\system32> kubectl get namespaces
NAME              STATUS   AGE
default           Active   23m
kube-node-lease   Active   23m
kube-public       Active   23m
kube-system       Active   23m

PS C:\WINDOWS\system32> kubectl get ns
NAME              STATUS   AGE
default           Active   24m
kube-node-lease   Active   24m
kube-public       Active   24m
kube-system       Active   24m

PS C:\WINDOWS\system32> kubectl config get-contexts
CURRENT   NAME       CLUSTER    AUTHINFO   NAMESPACE
*         minikube   minikube   minikube   default

PS C:\WINDOWS\system32> kubectl create namespace dev
namespace/dev created

PS C:\WINDOWS\system32> kubectl get ns
NAME              STATUS   AGE
default           Active   26m
dev               Active   16s
kube-node-lease   Active   26m
kube-public       Active   26m
kube-system       Active   26m
```

Creating pod through nginx image:

```
PS C:\WINDOWS\system32> kubectl run nginx --image=nginx
pod/nginx created

PS C:\WINDOWS\system32> kubectl get pods
NAME    READY   STATUS              RESTARTS   AGE
nginx   0/1     ContainerCreating   0          10s

PS C:\WINDOWS\system32> kubectl get pods
NAME    READY   STATUS    RESTARTS   AGE
nginx   1/1     Running   0          38s

PS C:\WINDOWS\system32> kubectl get pod nginx
NAME    READY   STATUS    RESTARTS   AGE
nginx   1/1     Running   0          48s
```

Run the image in different namespace:

```
PS C:\WINDOWS\system32> kubectl run nginx --image=nginx --namespace=dev
pod/nginx created

PS C:\WINDOWS\system32> kubectl get pods
NAME    READY   STATUS    RESTARTS   AGE
nginx   1/1     Running   0          2m42s

PS C:\WINDOWS\system32> kubectl get pods --namespace=dev
NAME    READY   STATUS    RESTARTS   AGE
nginx   1/1     Running   0          47s
```

To get All the namespaces:

```
PS C:\WINDOWS\system32> kubectl get all
NAME            READY   STATUS    RESTARTS   AGE
pod/nginx       1/1     Running   0          6m6s

NAME                 TYPE        CLUSTER-IP   EXTERNAL-IP   PORT(S)   AGE
service/kubernetes   ClusterIP   10.96.0.1    <none>        443/TCP   37m

PS C:\WINDOWS\system32> kubectl get all -A
NAMESPACE     NAME                                       READY   STATUS    RESTARTS      AGE
default       pod/nginx                                  1/1     Running   0             6m14s
dev           pod/nginx                                  1/1     Running   0             3m36s
kube-system   pod/coredns-7d764666f9-wmfvx               1/1     Running   0             37m
kube-system   pod/etcd-minikube                          1/1     Running   0             37m
kube-system   pod/kube-apiserver-minikube                1/1     Running   0             37m
kube-system   pod/kube-controller-manager-minikube       1/1     Running   0             37m
kube-system   pod/kube-proxy-kszct                       1/1     Running   0             37m
kube-system   pod/kube-scheduler-minikube                1/1     Running   0             37m
kube-system   pod/storage-provisioner                    1/1     Running   1 (36m ago)   37m

NAMESPACE     NAME                 TYPE        CLUSTER-IP   EXTERNAL-IP   PORT(S)                  AGE
default       service/kubernetes   ClusterIP   10.96.0.1    <none>        443/TCP                  37m
kube-system   service/kube-dns     ClusterIP   10.96.0.10   <none>        53/UDP,53/TCP,9153/TCP   37m

NAMESPACE     NAME                        DESIRED   CURRENT   READY   UP-TO-DATE   AVAILABLE   NODE SE
LECTOR            AGE
kube-system   daemonset.apps/kube-proxy   1         1         1       1            1           kuberne
tes.io/os=linux   37m

NAMESPACE     NAME                      READY   UP-TO-DATE   AVAILABLE   AGE
kube-system   deployment.apps/coredns   1/1     1            1           37m

NAMESPACE     NAME                                 DESIRED   CURRENT   READY   AGE
kube-system   replicaset.apps/coredns-7d764666f9   1         1         1       37m
```

Delete pod and namespace:

```
PS C:\WINDOWS\system32> kubectl get pods
NAME    READY   STATUS    RESTARTS   AGE
nginx   1/1     Running   0          8m5s

PS C:\WINDOWS\system32> kubectl delete pod nginx
pod "nginx" deleted from default namespace

PS C:\WINDOWS\system32> kubectl delete pod nginx --namespace=dev
pod "nginx" deleted from dev namespace
```