Kubernetes Task

Task Description:

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

```
Windows PowerShell
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PS C:\Users\Junaid> wsl

junaid@LAPTOP-GU5B805P:/mnt/c/Users/Junaid$
junaid@LAPTOP-GU5B805P:/mnt/c/Users/Junaid$ sudo apt update && sudo apt upgrade -y
[sudo] password for junaid:
Get:1 https://apt.releases.hashicorp.com noble InRelease [12.9 kB]
Ign:2 https://pkg.jenkins.io/debian-stable binary/ InRelease
Get:3 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Hit:4 http://archive.ubuntu.com/ubuntu noble InRelease
Get:5 https://pkg.jenkins.io/debian-stable binary/ Release [2044 B]
Get:6 https://pkg.jenkins.io/debian-stable binary/ Release.gpg [833 B]
Get:7 http://archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Err:6 https://pkg.jenkins.io/debian-stable binary/ Release.gpg
  The following signatures couldn't be verified because the public key is not available: NO_PUBKEY 7198F
4B714ABFC68
Get:8 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [1409 kB]
Get:9 http://archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:10 http://security.ubuntu.com/ubuntu noble-security/main Translation-en [229 kB]
Get:11 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [1698 kB]
Get:12 http://archive.ubuntu.com/ubuntu noble-updates/main Translation-en [314 kB]
Get:13 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 Components [175 kB]
Get:14 http://security.ubuntu.com/ubuntu noble-security/main amd64 Components [21.5 kB]
Get:15 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 c-n-f Metadata [16.0 kB]
Get:16 http://security.ubuntu.com/ubuntu noble-security/main amd64 c-n-f Metadata [9800 B]
Get:17 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [1519 kB]
Get:18 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Packages [924 kB]
Get:19 http://archive.ubuntu.com/ubuntu noble-updates/universe Translation-en [310 kB]
Get:20 http://security.ubuntu.com/ubuntu noble-security/universe Translation-en [209 kB]
Get:21 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Components [74.2 kB]
Get:22 http://security.ubuntu.com/ubuntu noble-security/universe amd64 c-n-f Metadata [19.7 kB]
Get:23 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Components [212 B]
Get:24 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Packages [28.0 kB]
Get:25 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [386 kB]
Get:26 http://security.ubuntu.com/ubuntu noble-security/multiverse Translation-en [6472 B]
Get:27 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Components [212 B]
Get:28 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 c-n-f Metadata [31.6 kB]
Get:29 http://archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Packages [2458 kB]
Get:30 http://archive.ubuntu.com/ubuntu noble-updates/restricted Translation-en [563 kB]
Get:31 http://archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Components [212 B]
Get:32 http://archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Packages [30.9 kB]
Get:33 http://archive.ubuntu.com/ubuntu noble-updates/multiverse Translation-en [6340 B]
Get:34 http://archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [940 B]
Get:35 http://archive.ubuntu.com/ubuntu noble-backports/main amd64 Components [7284 B]
Get:36 http://archive.ubuntu.com/ubuntu noble-backports/universe amd64 Components [10.5 kB]
Get:37 http://archive.ubuntu.com/ubuntu noble-backports/restricted amd64 Components [216 B]
Get:38 http://archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 Components [212 B]
Fetched 10.9 MB in 11s (1010 kB/s)
```

```
Get:3 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 gir1.2-glib-2.0 amd64 2.80.0-6ubuntu3.7
[183 kB]
Get:4 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libglib2.0-0t64 amd64 2.80.0-6ubuntu3.7
[1545 kB]
Get:5 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 alsa-ucm-conf all 1.2.10-1ubuntu5.8 [66.
9 kB]
Get:6 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 snapd amd64 2.73+ubuntu24.04 [34.6 MB]
Fetched 36.5 MB in 7s (5097 kB/s)
(Reading database ... 44622 files and directories currently installed.)
Preparing to unpack .../0-libglib2.0-data_2.80.0-6ubuntu3.7_all.deb ...
Unpacking libglib2.0-data (2.80.0-6ubuntu3.7) over (2.80.0-6ubuntu3.6) ...
Preparing to unpack .../1-libglib2.0-bin_2.80.0-6ubuntu3.7_amd64.deb ...
Unpacking libglib2.0-bin (2.80.0-6ubuntu3.7) over (2.80.0-6ubuntu3.6) ...
Preparing to unpack .../2-gir1.2-glib-2.0_2.80.0-6ubuntu3.7_amd64.deb ...
Unpacking gir1.2-glib-2.0:amd64 (2.80.0-6ubuntu3.7) over (2.80.0-6ubuntu3.6) ...
Preparing to unpack .../3-libglib2.0-0t64_2.80.0-6ubuntu3.7_amd64.deb ...
Unpacking libglib2.0-0t64:amd64 (2.80.0-6ubuntu3.7) over (2.80.0-6ubuntu3.6) ...
Preparing to unpack .../4-alsa-ucm-conf_1.2.10-1ubuntu5.8_all.deb ...
Unpacking alsa-ucm-conf (1.2.10-1ubuntu5.8) over (1.2.10-1ubuntu5.7) ...
Preparing to unpack .../5-libavahi-client3_0.8-13ubuntu6.1_amd64.deb ...
Unpacking libavahi-client3:amd64 (0.8-13ubuntu6.1) over (0.8-13ubuntu6) ...
Preparing to unpack .../6-libavahi-common3_0.8-13ubuntu6.1_amd64.deb ...
Unpacking libavahi-common3:amd64 (0.8-13ubuntu6.1) over (0.8-13ubuntu6) ...
Preparing to unpack .../7-libavahi-common-data_0.8-13ubuntu6.1_amd64.deb ...
Unpacking libavahi-common-data:amd64 (0.8-13ubuntu6.1) over (0.8-13ubuntu6) ...
Preparing to unpack .../8-snapd_2.73+ubuntu24.04_amd64.deb ...
Unpacking snapd (2.73+ubuntu24.04) over (2.72+ubuntu24.04) ...
Setting up snapd (2.73+ubuntu24.04) ...
Installing new version of config file /etc/apparmor.d/usr.lib.snapd.snap-confine.real ...
Installing new version of config file /etc/profile.d/apps-bin-path.sh ...
snapd.failure.service is a disabled or a static unit not running, not starting it.
snapd.gpio-chardev-setup.target is a disabled or a static unit not running, not starting it.
snapd.snap-repair.service is a disabled or a static unit not running, not starting it.
Setting up alsa-ucm-conf (1.2.10-1ubuntu5.8) ...
Setting up libglib2.0-0t64:amd64 (2.80.0-6ubuntu3.7) ...
Setting up libglib2.0-data (2.80.0-6ubuntu3.7) ...
Setting up libavahi-common-data:amd64 (0.8-13ubuntu6.1) ...
Setting up gir1.2-glib-2.0:amd64 (2.80.0-6ubuntu3.7) ...
Setting up libavahi-common3:amd64 (0.8-13ubuntu6.1) ...
Setting up libglib2.0-bin (2.80.0-6ubuntu3.7) ...
Setting up libavahi-client3:amd64 (0.8-13ubuntu6.1) ...
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for dbus (1.14.10-4ubuntu4.1) ...
Processing triggers for libc-bin (2.39-0ubuntu8.6) ...
junaid@LAPTOP-GU5B805P:/mnt/c/Users/Junaid$
```

```
junaid@LAPTOP-GU5B805P:/mnt/c/Users/Junaid$ sudo apt install -y docker.io
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
docker.io is already the newest version (28.2.2-0ubuntu1~24.04.1).
The following package was automatically installed and is no longer required:
  libllvm19
Use 'sudo apt autoremove' to remove it.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
junaid@LAPTOP-GU5B805P:/mnt/c/Users/Junaid$ sudo service docker start
junaid@LAPTOP-GU5B805P:/mnt/c/Users/Junaid$ sudo usermod -aG docker $USER
newgrp docker
junaid@LAPTOP-GU5B805P:/mnt/c/Users/Junaid$ docker --version
docker ps
Docker version 28.2.2, build 28.2.2-0ubuntu1~24.04.1
CONTAINER ID    IMAGE       COMMAND     CREATED     STATUS      PORTS       NAMES
junaid@LAPTOP-GU5B805P:/mnt/c/Users/Junaid$
```

```
junaid@LAPTOP-GU5B805P:/mnt/c/Users/Junaid$ curl -LO https://dl.k8s.io/release/$(curl -Ls https://dl.k8s
.io/release/stable.txt)/bin/linux/amd64/kubectl
chmod +x kubectl
sudo mv kubectl /usr/local/bin/
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100   138  100   138    0     0    327      0 --:--:-- --:--:-- --:--:--   327
100 55.8M  100 55.8M    0     0   2486k      0  0:00:23  0:00:23 --:--:-- 6891k
junaid@LAPTOP-GU5B805P:/mnt/c/Users/Junaid$ kubectl version --client
Client Version: v1.35.0
Kustomize Version: v5.7.1
junaid@LAPTOP-GU5B805P:/mnt/c/Users/Junaid$ curl -LO https://storage.googleapis.com/minikube/releases/la
test/minikube-linux-amd64
chmod +x minikube-linux-amd64
sudo mv minikube-linux-amd64 /usr/local/bin/minikube
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100  133M  100  133M    0     0   8442k      0  0:00:16  0:00:16 --:--:-- 9076k
junaid@LAPTOP-GU5B805P:/mnt/c/Users/Junaid$ minikube version
minikube version: v1.37.0
commit: 65318f4cfff9c12cc87ec9eb8f4cdd57b25047f3
junaid@LAPTOP-GU5B805P:/mnt/c/Users/Junaid$
```

```
PS C:\Users\Junaid> & "C:\Program Files\Oracle\VirtualBox\VBoxManage.exe" --version
7.2.4r170995
PS C:\Users\Junaid> wsl


^[[C^[[D^[[A^[[Bjunaid@LAPTOP-GU5B805P:/mnt/c/Users/Junaid$
junaid@LAPTOP-GU5B805P:/mnt/c/Users/Junaid$
junaid@LAPTOP-GU5B805P:/mnt/c/Users/Junaid$
```

```
junaid@LAPTOP-GU5B805P:/mnt/c/Users/Junaid$ minikube start --driver=virtualbox
😄  minikube v1.37.0 on Ubuntu 24.04 (kvm/amd64)
✨  Using the virtualbox driver based on user configuration

🤷  Exiting due to PROVIDER_VIRTUALBOX_NOT_FOUND: The 'virtualbox' provider was not found: unable to fin
d VBoxManage in $PATH
💡  Suggestion: Install VirtualBox
📖  Documentation: https://minikube.sigs.k8s.io/docs/reference/drivers/virtualbox/

junaid@LAPTOP-GU5B805P:/mnt/c/Users/Junaid$ minikube start --driver=docker
😄  minikube v1.37.0 on Ubuntu 24.04 (kvm/amd64)
✨  Using the docker driver based on user configuration
🏃  Using Docker driver with root privileges
👍  Starting "minikube" primary control-plane node in "minikube" cluster
🚜  Pulling base image v0.0.48 ...
💾  Downloading Kubernetes v1.34.0 preload ...
    > gcr.io/k8s-minikube/kicbase...:  488.51 MiB / 488.52 MiB  100.00% 33.58 M
    > preloaded-images-k8s-v18-v1...:  337.07 MiB / 337.07 MiB  100.00% 12.72 M
🔥  Creating docker container (CPUs=2, Memory=3072MB) ...
🐳  Preparing Kubernetes v1.34.0 on Docker 28.4.0 ...
🔗  Configuring bridge CNI (Container Networking Interface) ...
🔎  Verifying Kubernetes components...
    ▪ Using image gcr.io/k8s-minikube/storage-provisioner:v5
🌟  Enabled addons: storage-provisioner, default-storageclass
🏄  Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default
junaid@LAPTOP-GU5B805P:/mnt/c/Users/Junaid$
```

```
junaid@LAPTOP-GU5B805P:/mnt/c/Users/Junaid$ minikube status
kubectl get nodes
minikube
type: Control Plane
host: Running
kubelet: Running
apiserver: Running
kubeconfig: Configured

NAME        STATUS    ROLES           AGE     VERSION
minikube    Ready     control-plane   78s     v1.34.0
junaid@LAPTOP-GU5B805P:/mnt/c/Users/Junaid$ kubectl get namespaces
NAME               STATUS    AGE
default            Active    97s
kube-node-lease    Active    97s
kube-public        Active    97s
kube-system        Active    97s
junaid@LAPTOP-GU5B805P:/mnt/c/Users/Junaid$ kubectl create namespace dev
namespace/dev created
junaid@LAPTOP-GU5B805P:/mnt/c/Users/Junaid$ kubectl describe namespace dev
Name:         dev
Labels:       kubernetes.io/metadata.name=dev
Annotations:  <none>
Status:       Active

No resource quota.

No LimitRange resource.
junaid@LAPTOP-GU5B805P:/mnt/c/Users/Junaid$ kubectl delete namespace dev
namespace "dev" deleted
junaid@LAPTOP-GU5B805P:/mnt/c/Users/Junaid$ minikube start --driver=docker
😄  minikube v1.37.0 on Ubuntu 24.04 (kvm/amd64)
✨  Using the docker driver based on existing profile
👍  Starting "minikube" primary control-plane node in "minikube" cluster
🚜  Pulling base image v0.0.48 ...
🏃  Updating the running docker "minikube" container ...
🐳  Preparing Kubernetes v1.34.0 on Docker 28.4.0 ...
🔎  Verifying Kubernetes components...
    ▪ Using image gcr.io/k8s-minikube/storage-provisioner:v5
🌟  Enabled addons: storage-provisioner, default-storageclass
🏄  Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default
junaid@LAPTOP-GU5B805P:/mnt/c/Users/Junaid$
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