Lab 8: Installation of Kubernetes on Windows Platform

Objectives:

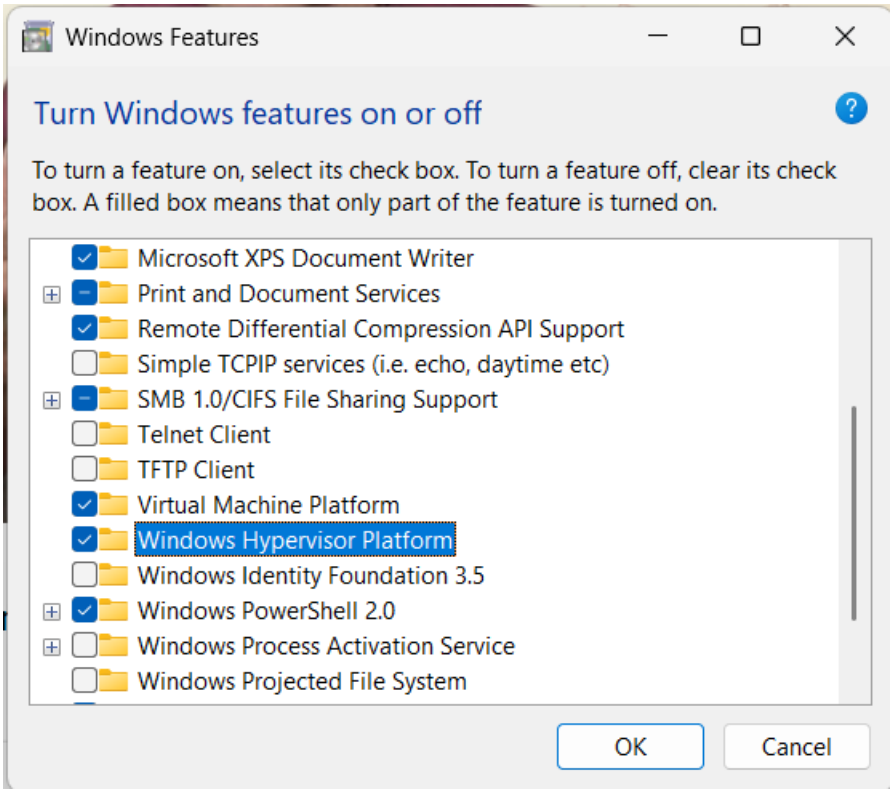
On successful completion of this lab, students will learn how to download, install, configure and run Kubernetes on windows platform.

Installation of Kubernetes on windows is not straight forward, in its simplest form, which we are going to follow, has two steps-

a. Installation of Kubernetes Cluster (Kubernetes Instance)
b. Installation of **kubectl** (Command Line Interface for interaction with Kubernetes)

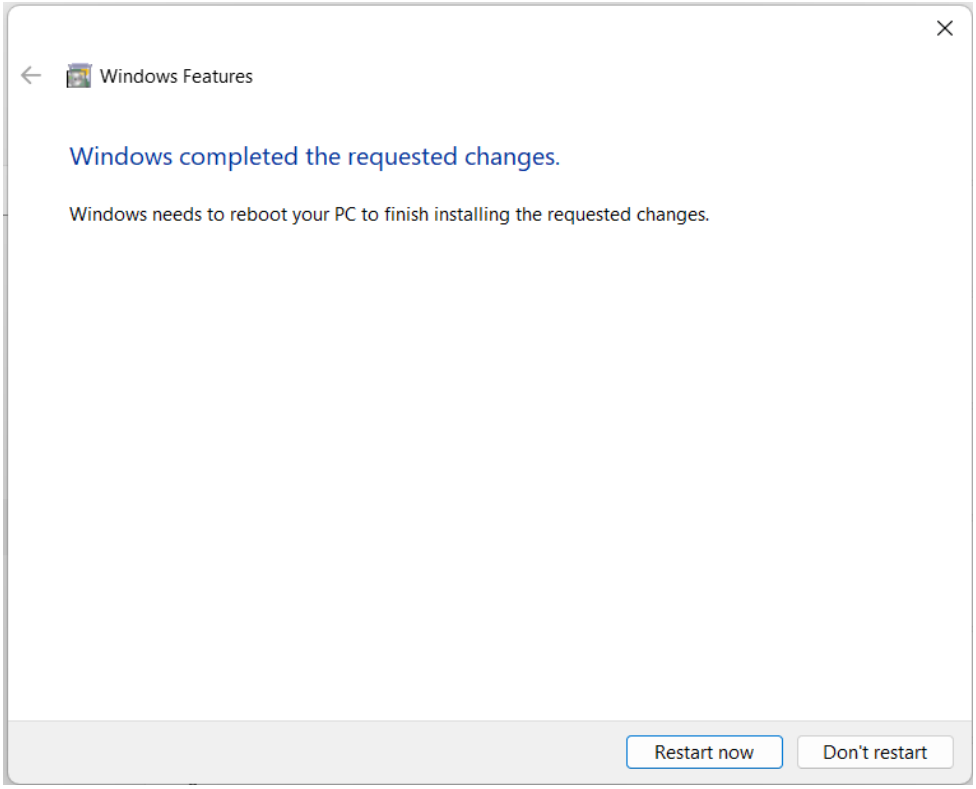
Pre-requisite: As Kubernetes from scratch is an application natively designed for the Linux, few setting needs to be confirmed before we proceed with installation.

1. For windows 11, In the Search bar, search for "apps", and select Apps and features. Select Optional features → Add a feature→scroll down to Windows features.
   or
   For windows 10, You can also press Windows Key + R to open the Run dialog, type **"optionalfeatures"**, and press Enter

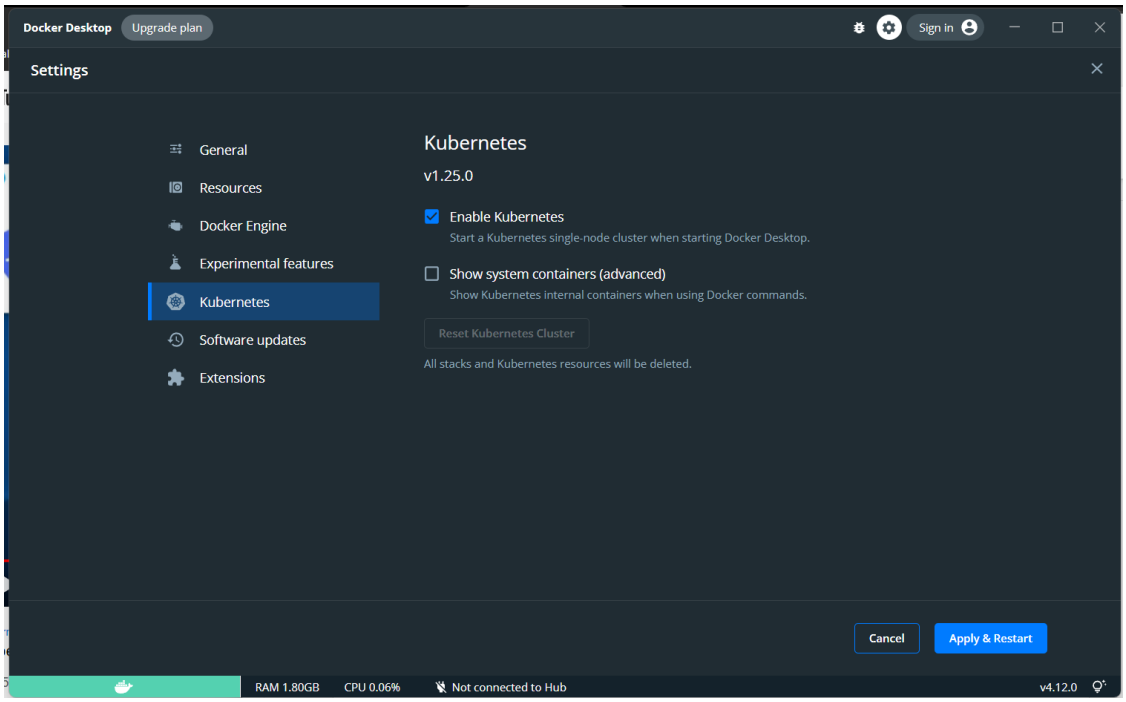


Select Windows Hypervisor Platform

After completion of installation, following screen will appear

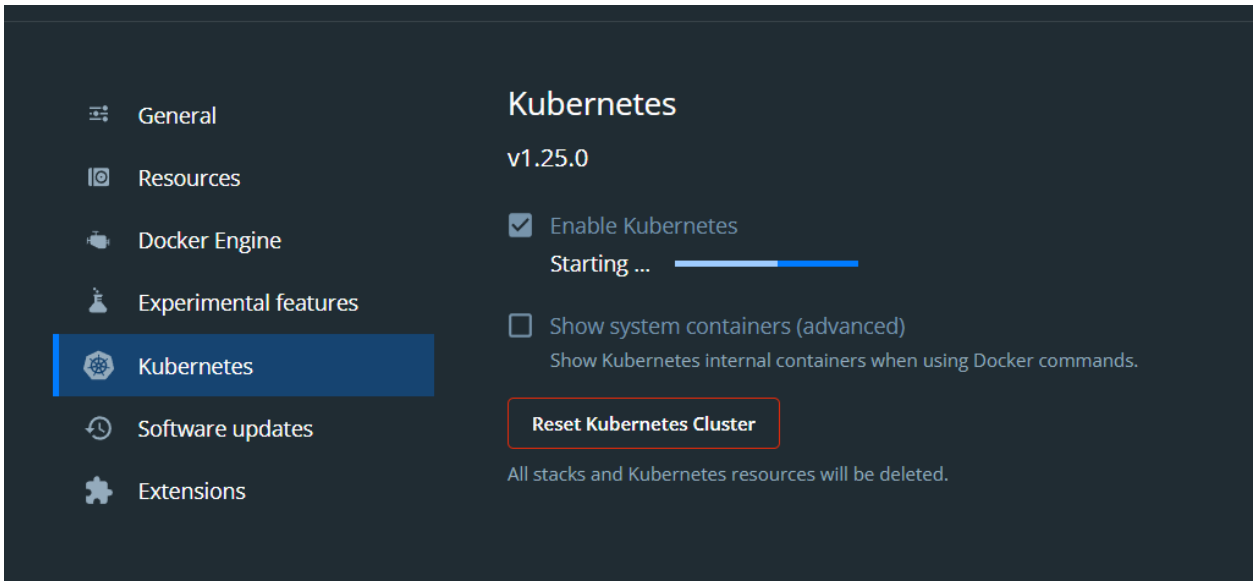


2. Now start the Docker desktop, and browse to the setting pane of the docker, click on Kubernetes, then check Enable Kubernetes, this will install standalone cluster of Kubernetes.

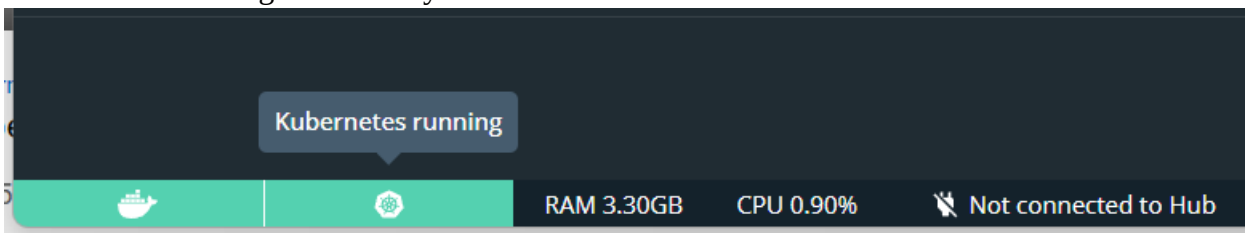


3. Click on apply and restart, this will install additional components required for running Kubernetes.

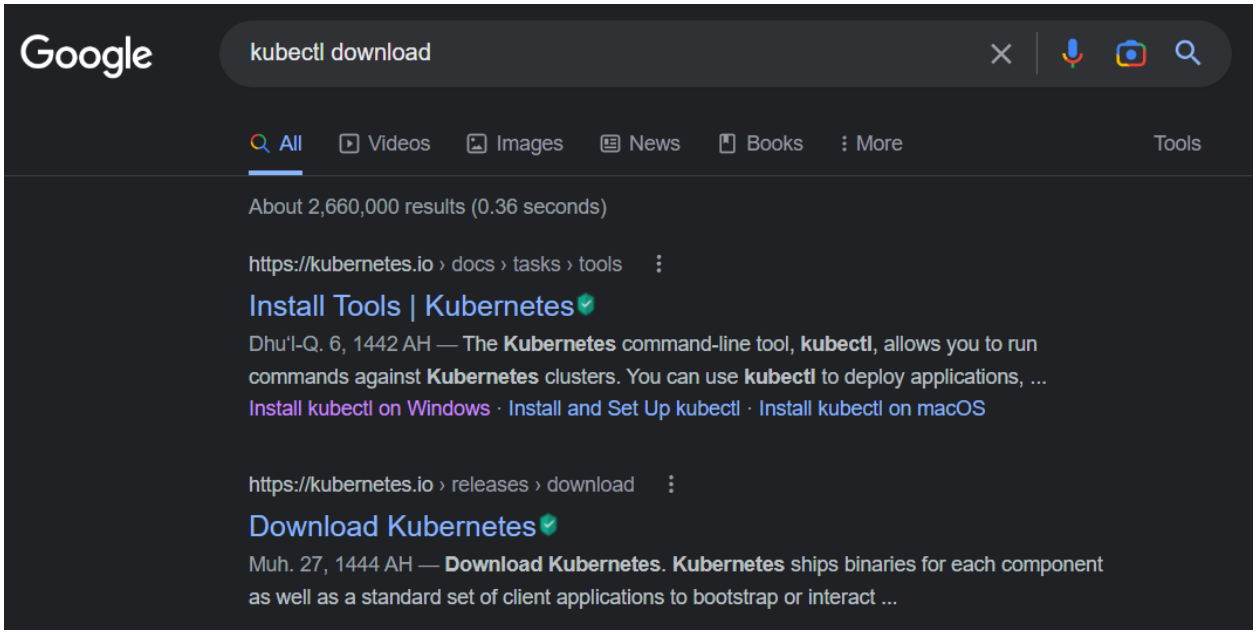
An internet connection is required for downloading and installing required components.



4. Once finished, you can see bottom left corner of the Docker desktop interface, Kubernetes icon appears in green along with whale icon of the docker, indicating Kubernetes has been installed and running successfully.

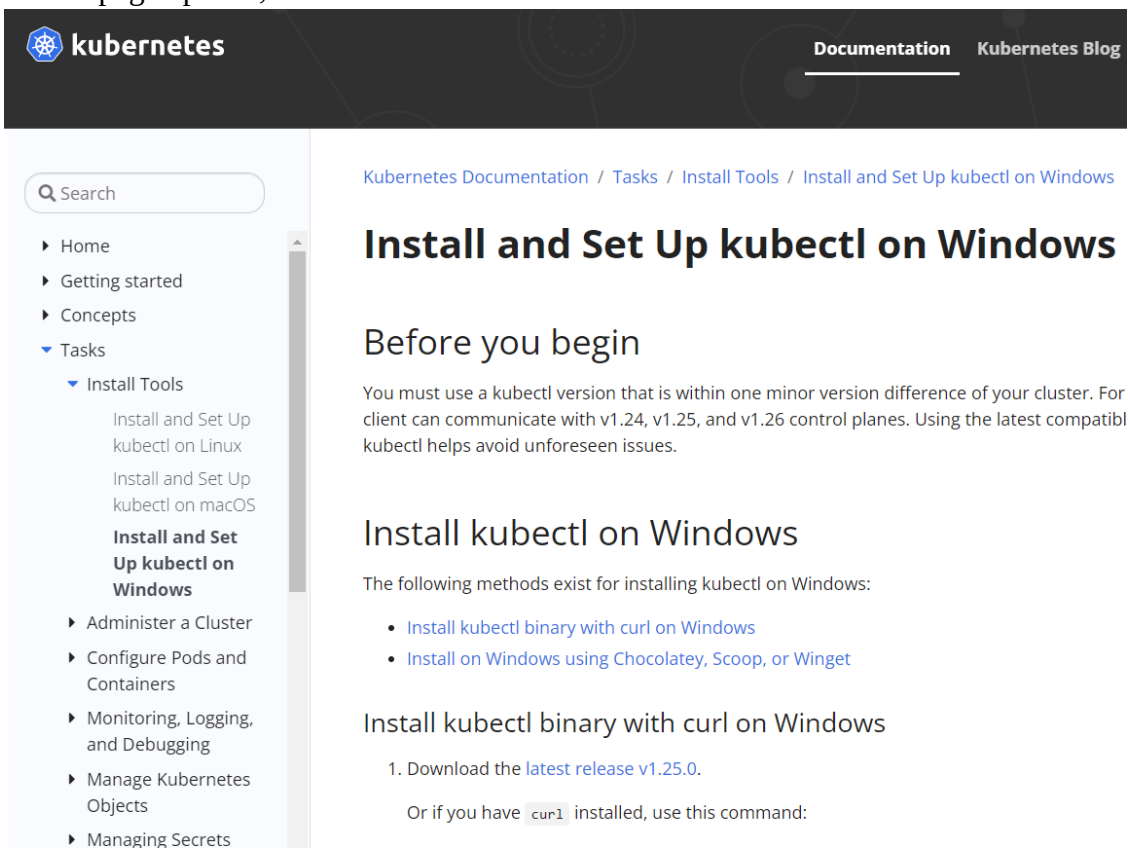


5. Now for installation of **kubectl**, a CLI interface for the Kubernetes, search for **`kubectl`** on the google

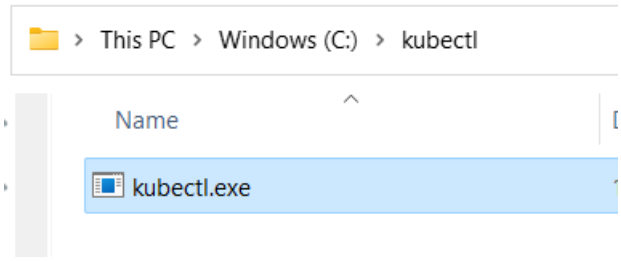


click install on windows.

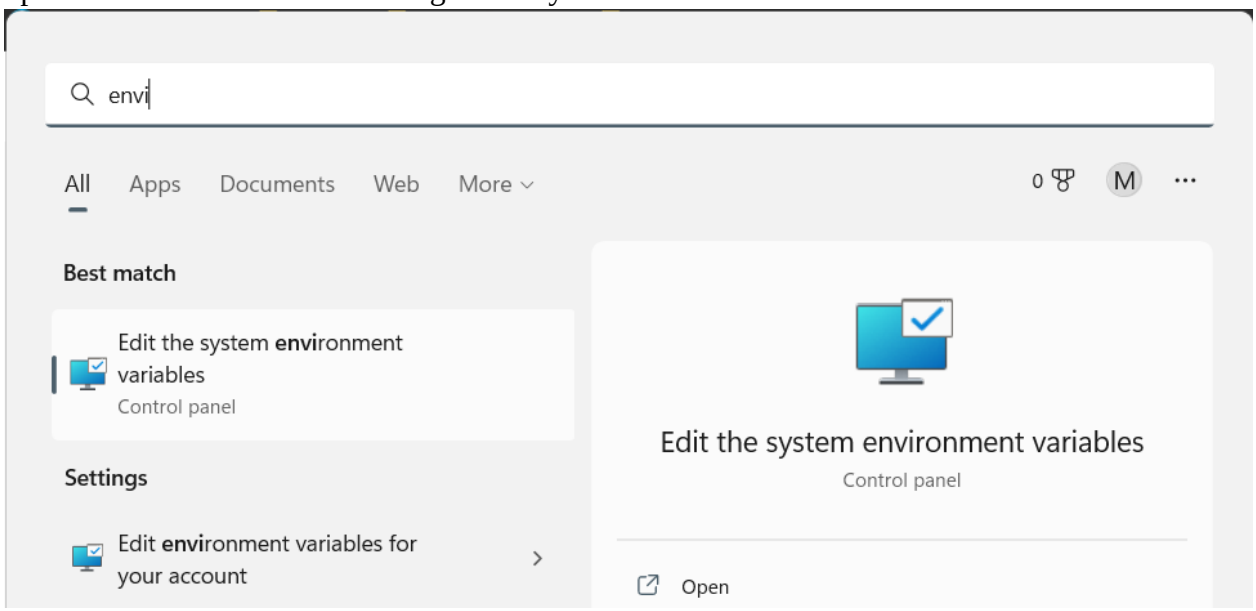
6. On the page opened, click on **latest release**



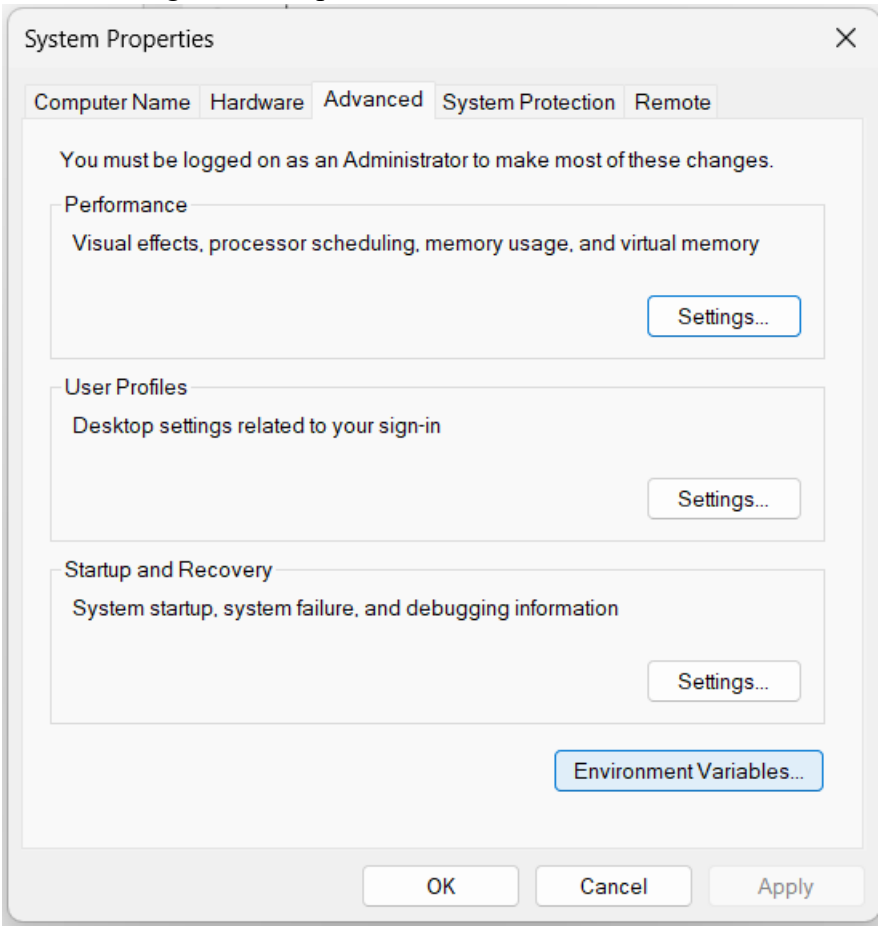
save kubectl binary somewhere in your system, a preferred location is **C:\kubectl**



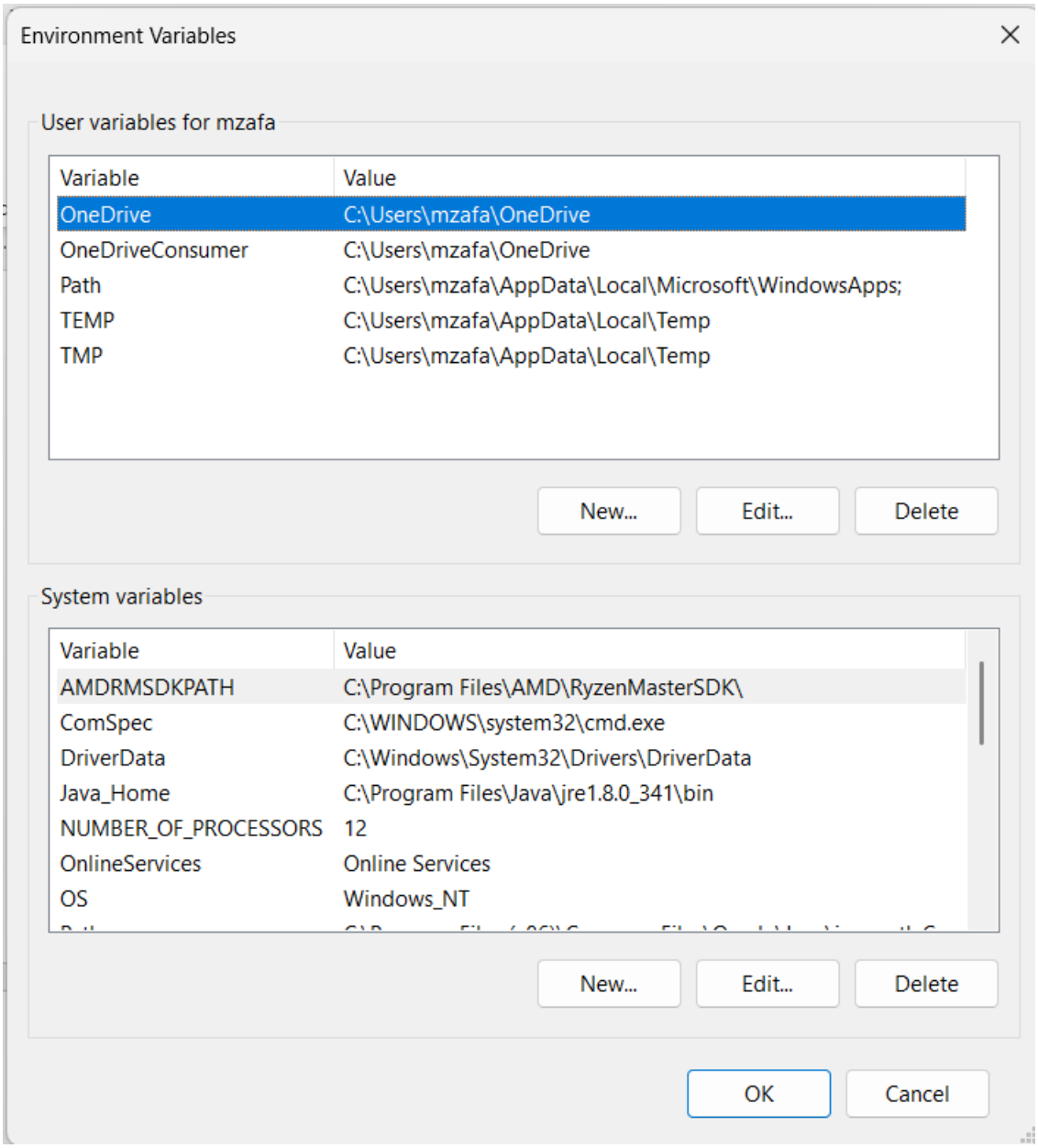
7. Now, on search, look for “Environment”, Environment Variable link will appear, click and open Environment variable setting of the system.



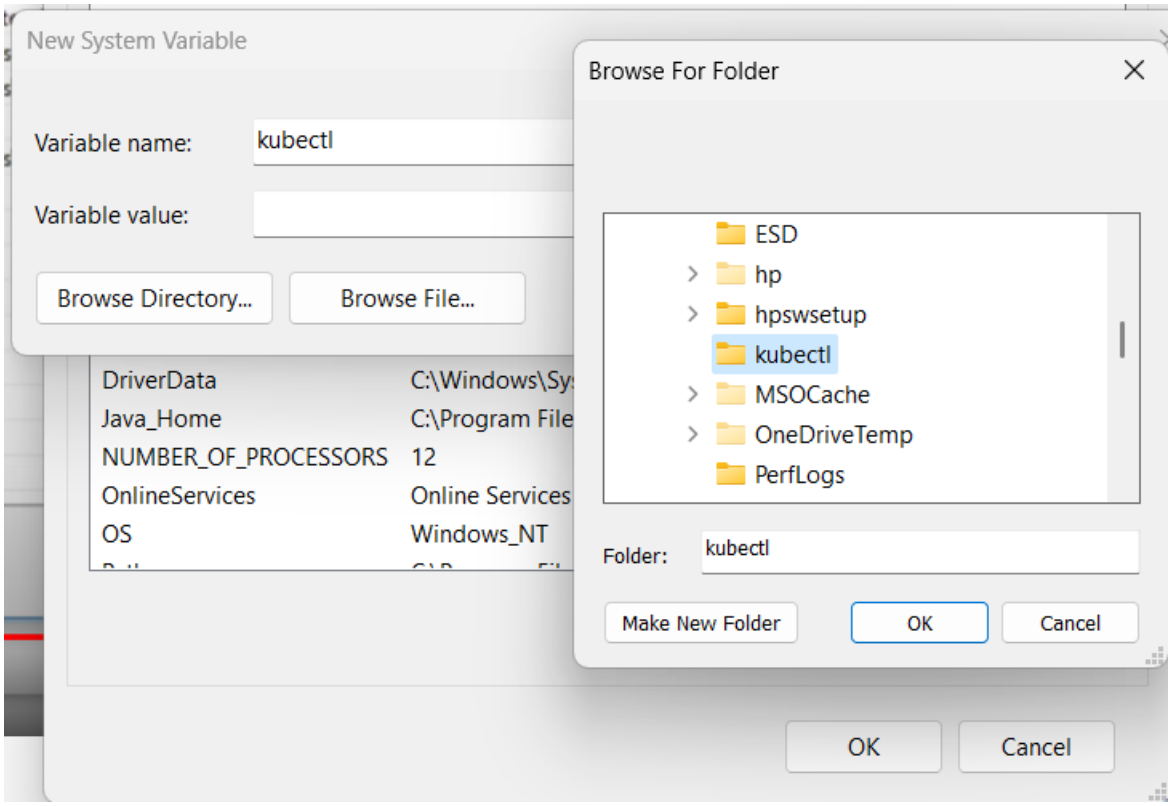
8. On the setting window opened thus, click on “Environment Variables” at the bottom



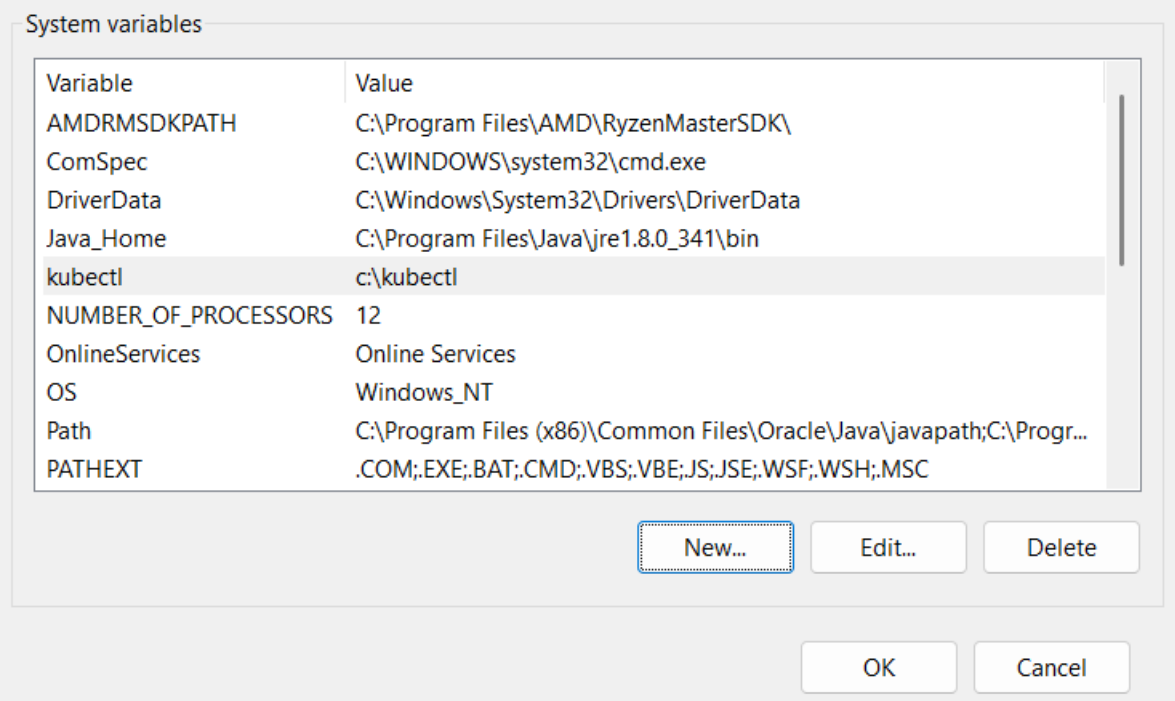
9. On the subsequent window opened, either select **New** on User variables section (if you want to make changes for current user only) or select **New** on System variables section (this will make changes system wise for all user of the system)



10. Add variable, write kubectl for the variable name and either provide value for this or browse to the location where **kubectl.exe** file was saved.

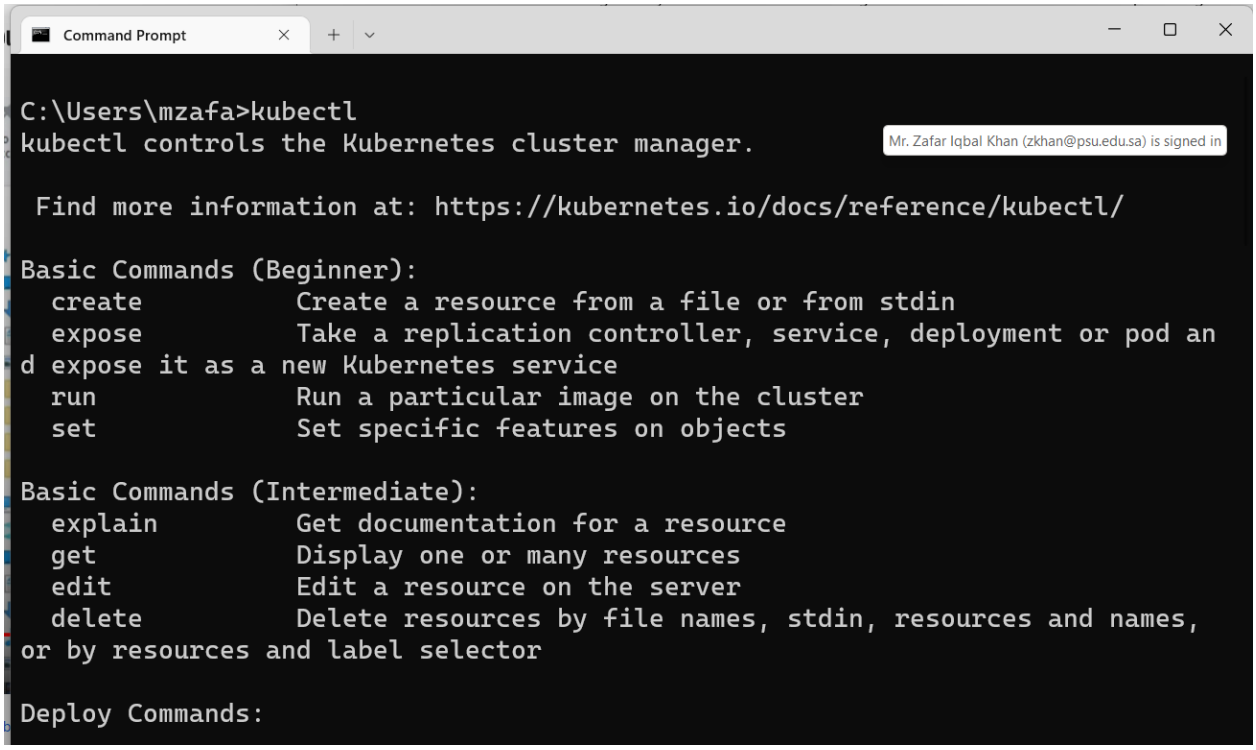


Once done, click on Ok, a new Environment Variable entry has been made, and it should be visible as well.



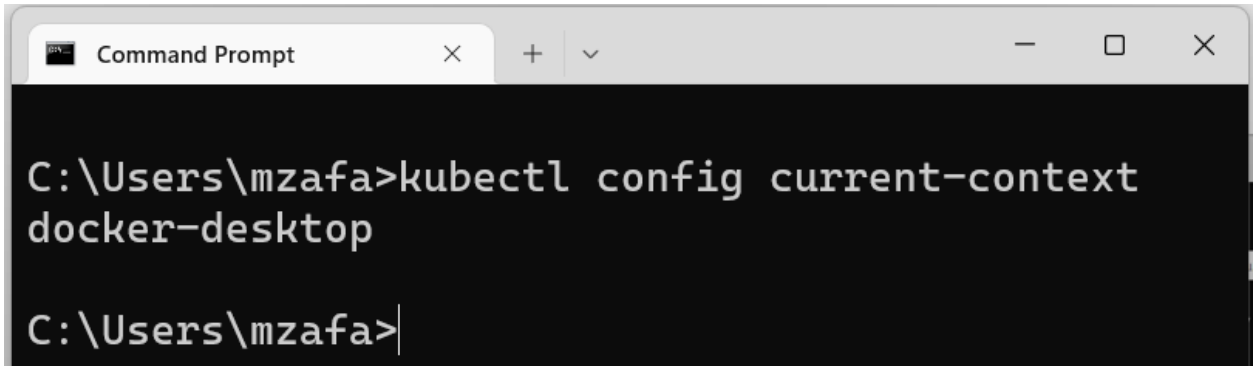
Click on OK to finalize everything.

11. Open command prompt, and type **kubectl,** if it responds with a verbose screen like below, means you have set everything perfectly.



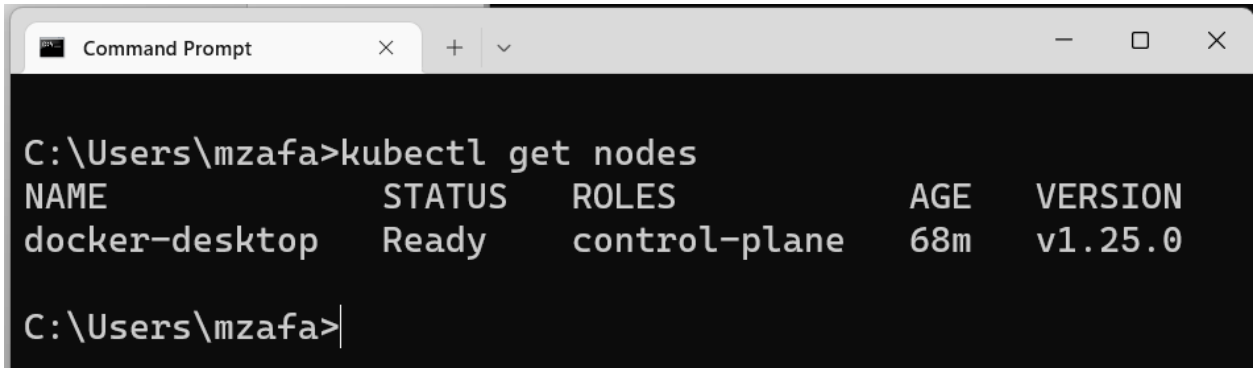
Some basic commands

12. On command window, write **`kubectl config current-context`**



it shows current context of the Kubernetes instance, which in turn reveals that it is going to run on docker-desktop cluster

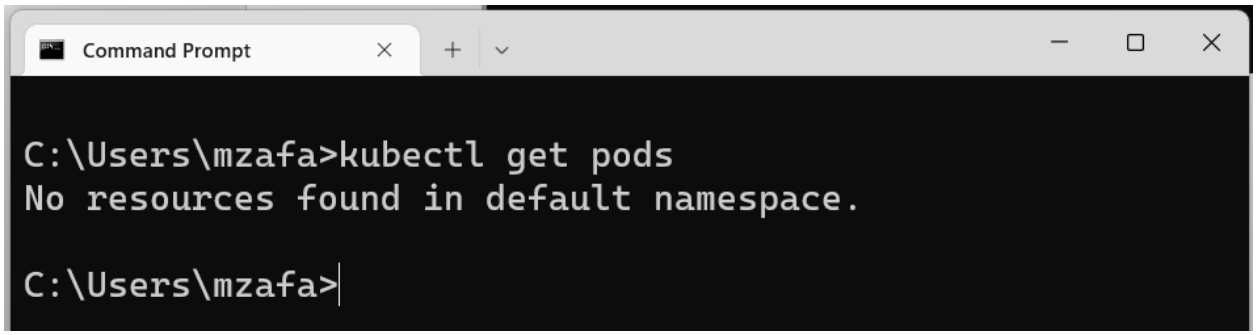
13. To know the information about the nodes available on current cluster, run these commands



it shows that only one machine is running

14. To know about pods available on the current cluster, use this command

`kubectl get pods`



it shows that currently no pods are available

15. To know about all the details of the Kubernetes cluster, use this command
    `kubectl version –output=yaml`