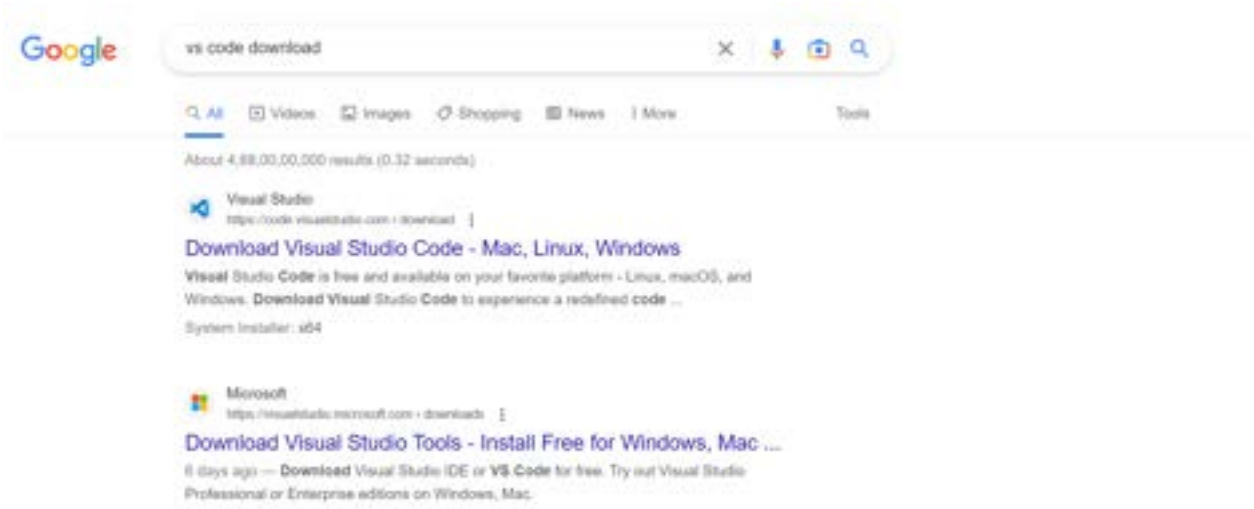
Integrating Visual Studio Code with kubernetes cluster

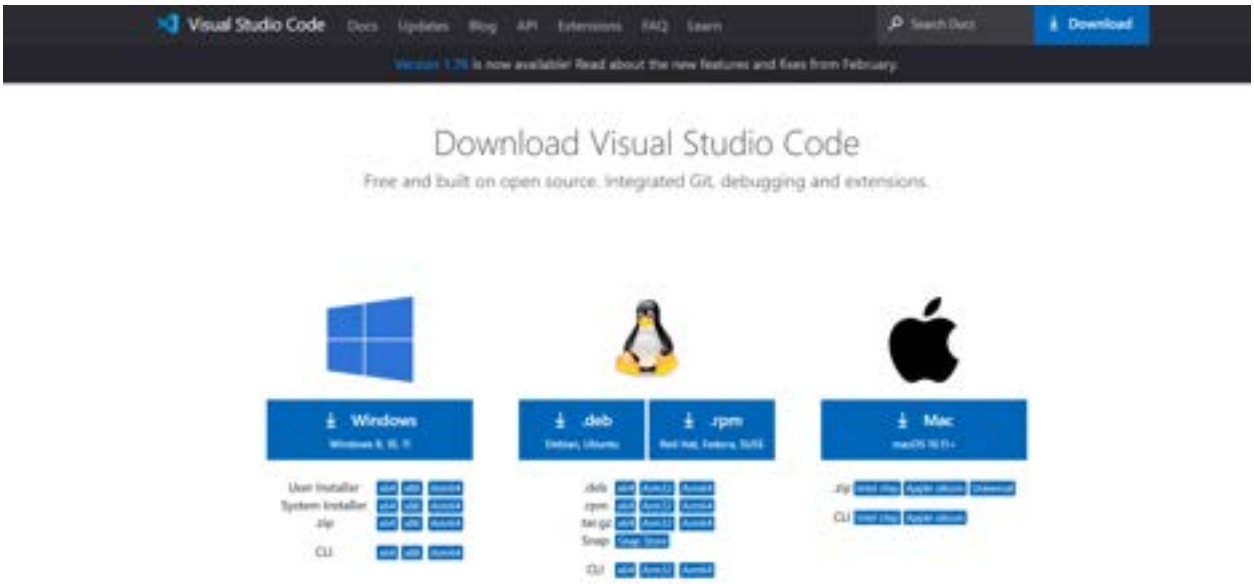
In the oracle virtual box, we have set up the single node kubernetes cluster. Let us start the virtual machine and to have remote access to login to the remote machine from the base machine, here we are using visual studio code as the remote machine.

Login to the virtual machine by providing username and password.

To install a visual studio application on your machine, Go to any browser search for VS code download and install the application by clicking on the official link https://code.visualstudio.com.

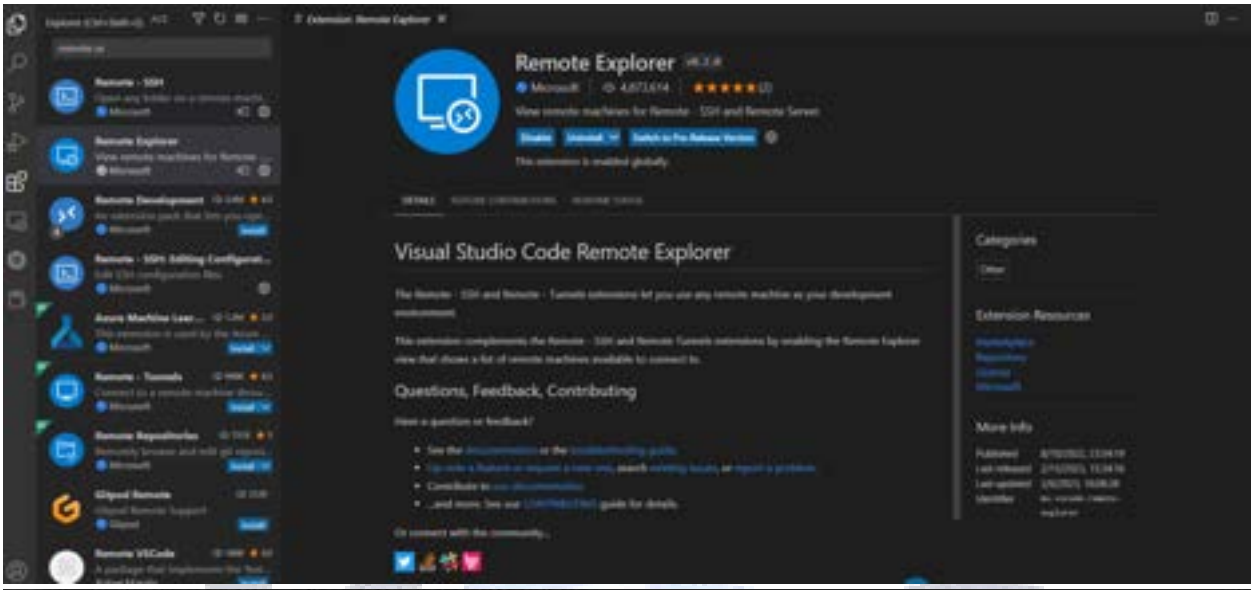


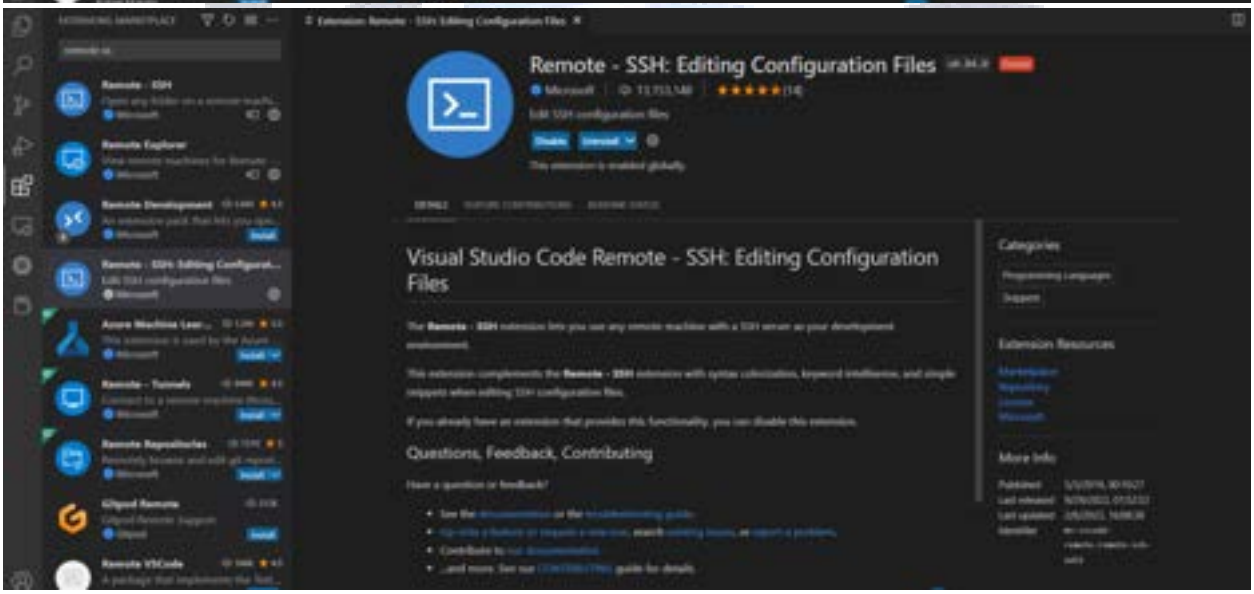
Depending on the base machine operating system, download the application.



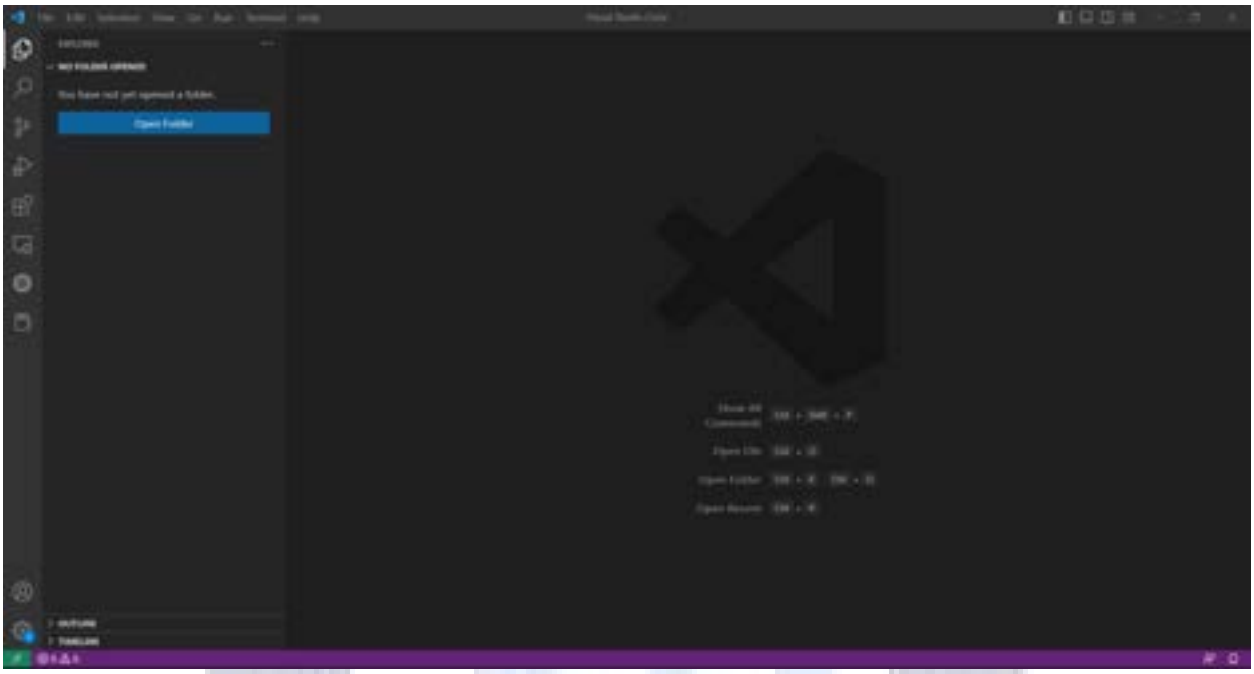
As a virtual machine is a server edition, we cannot install vs code in it. In order to write and execute yaml files in kubernetes, initially we will write those files in the VS code and then they will run in the virtual machine where kubernetes is pre installed.

For supporting remote access phenomenon from vs code to the virtual machine, we need to install some of the plugins in the vs code which are namely Remote-SSH, Remote Explorer and Remote-SSH: Editing configuration files. These can be found by searching on the left side of the vs code dashboard.





On the left side bottom, there will be a popup called open to the remote window. Click on that popup.



Open the terminal and generate the ssh keys by executing the command ssh-keygen.exe without entering the passphrase. The public and private keys are generated.

Now open the git bash and run ls -al .ssh command to list the hidden files present under .ssh directory.

```
saranshravani@LAPTOP-TQJ5VK2P MINGW64 ~
$ ls -al .ssh
total 90
drwxr-xr-x 1 saranshravani 197121     0 Feb 28 17:18 ./
drwxr-xr-x 1 saranshravani 197121     0 Mar  4 18:53 ../
-rw-r--r-- 1 saranshravani 197121    84 Feb 24 16:47 config
-rw-r--r-- 1 saranshravani 197121  2622 Mar 13 11:53 id_rsa
-rw-r--r-- 1 saranshravani 197121   584 Mar 13 11:53 id_rsa.pub
-rw-r--r-- 1 saranshravani 197121 25585 Mar  4 15:59 known_hosts
-rw-r--r-- 1 saranshravani 197121 24651 Feb 28 17:18 known_hosts.old
```

Execute ssh-copy-id username@ipaddress of the virtual machine command to copy the ssh key to the remote machine and login with the key based authentication instead of password based authentication.

```
saranshravani@LAPTOP-TQJ5VK2P MINGW64 ~
$ ssh-copy-id testuser@192.168.1.100
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/c/Users/saranshravani/.ssh/id_rsa.pub"
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompted now it is to install the new keys
testuser@192.168.1.100's password:

Number of key(s) added: 1

Now try logging into the machine, with:   "ssh 'testuser@192.168.1.100'"
and check to make sure that only the key(s) you wanted were added.
```

Open the file .ssh/config using the file editor vim using the below command.

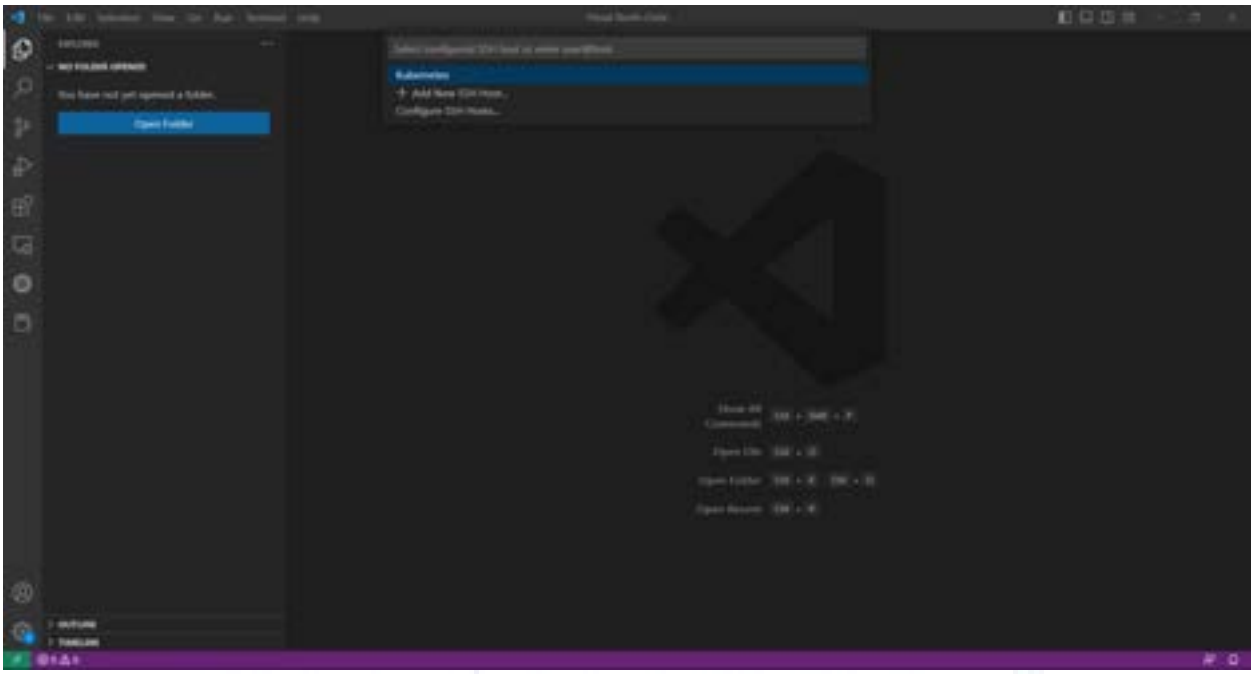
```
saranshravani@LAPTOP-TQJ5VK2P MINGW64 ~
$ vim .ssh/config
```

Verify the host details inside the file and check whether any corrections need to be done and save the file.

```
Host Kubernetes
  HostName 192.168.1.100
  User testuser
  ForwardAgent yes

~
~
~
~
```

Now go to the vs code search to connect to host machine, then click on kubernetes(host of the virtual machine) and click on the Linux to connect to the kubernetes server.



With this, the vs code terminal is connected to the virtual machine where kubernetes is running. Go to the root user by using the command sudo -i and password of that virtual machine.

Now you can run the kubectl commands on vs code which is connected to the kubernetes installed virtual machine. This is how we integrate the visual studio code to the virtual machine running in the oracle virtual box.