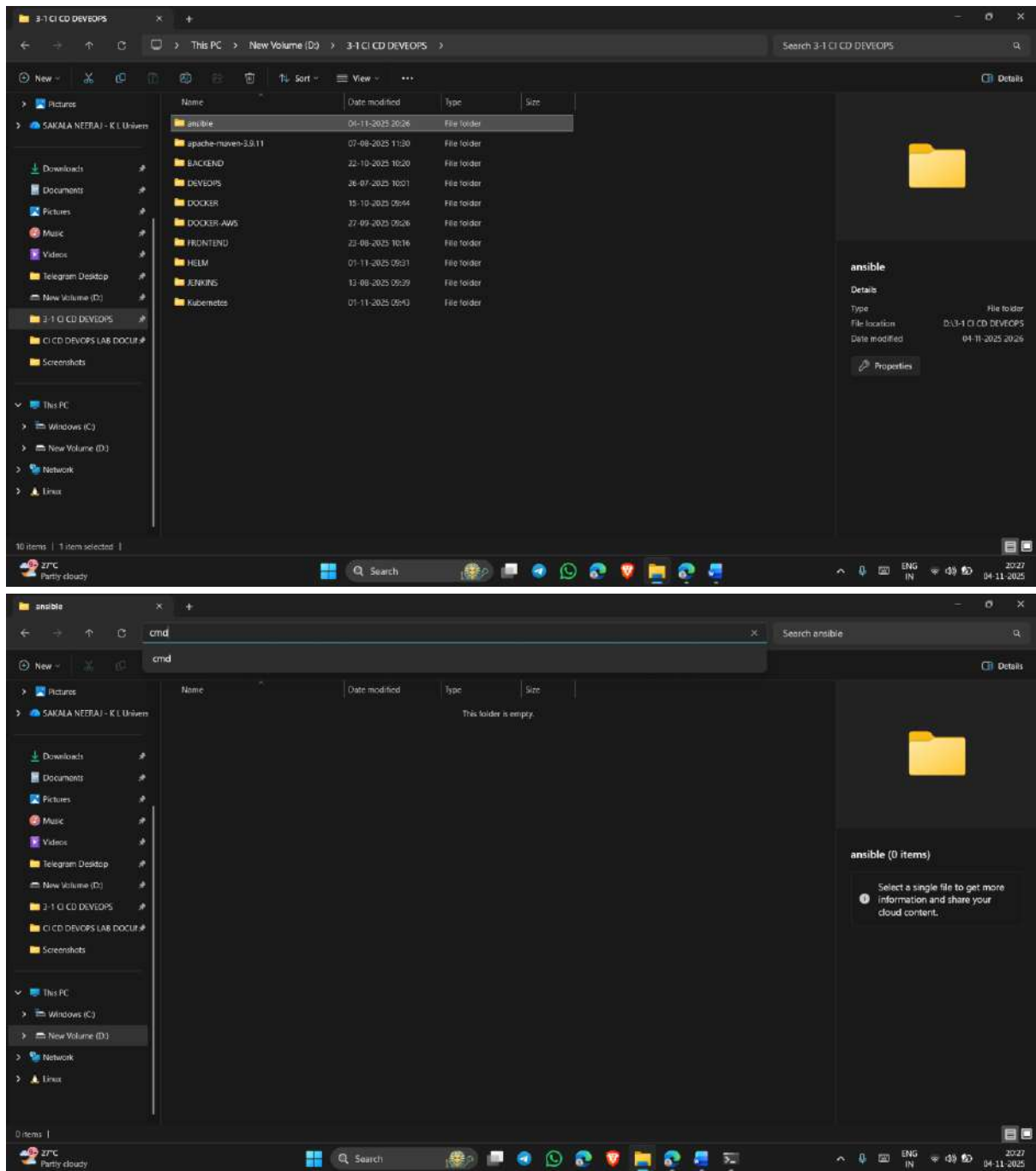


LAB 15 Ansible

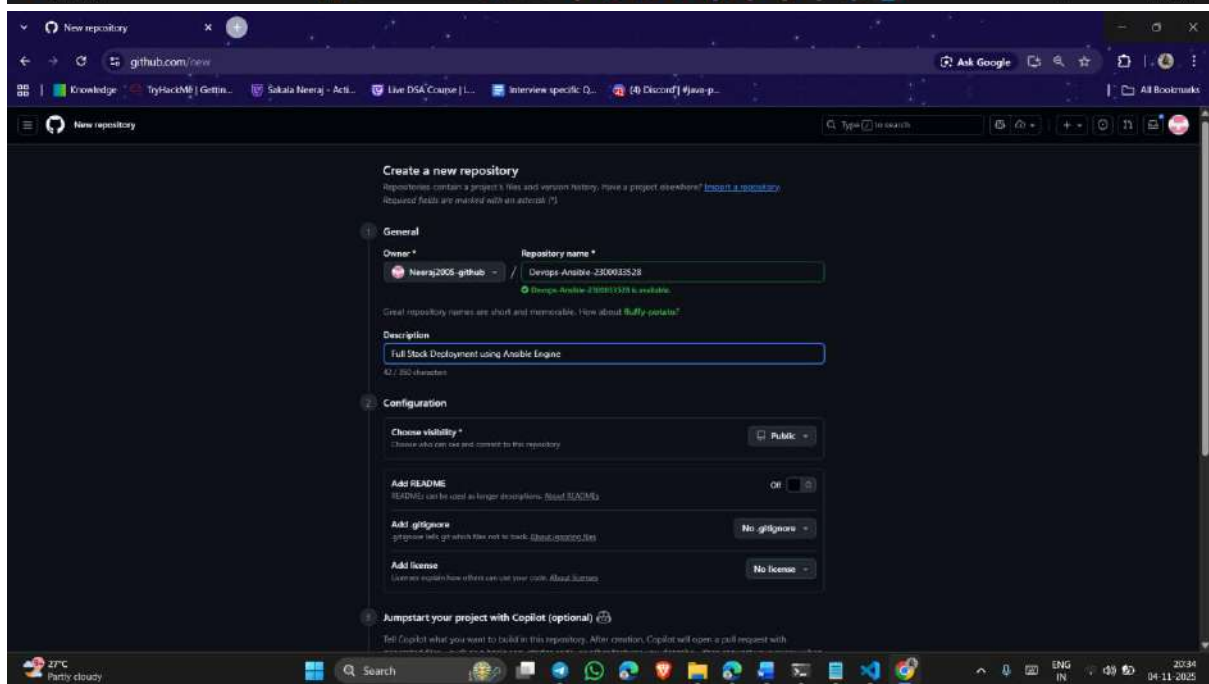
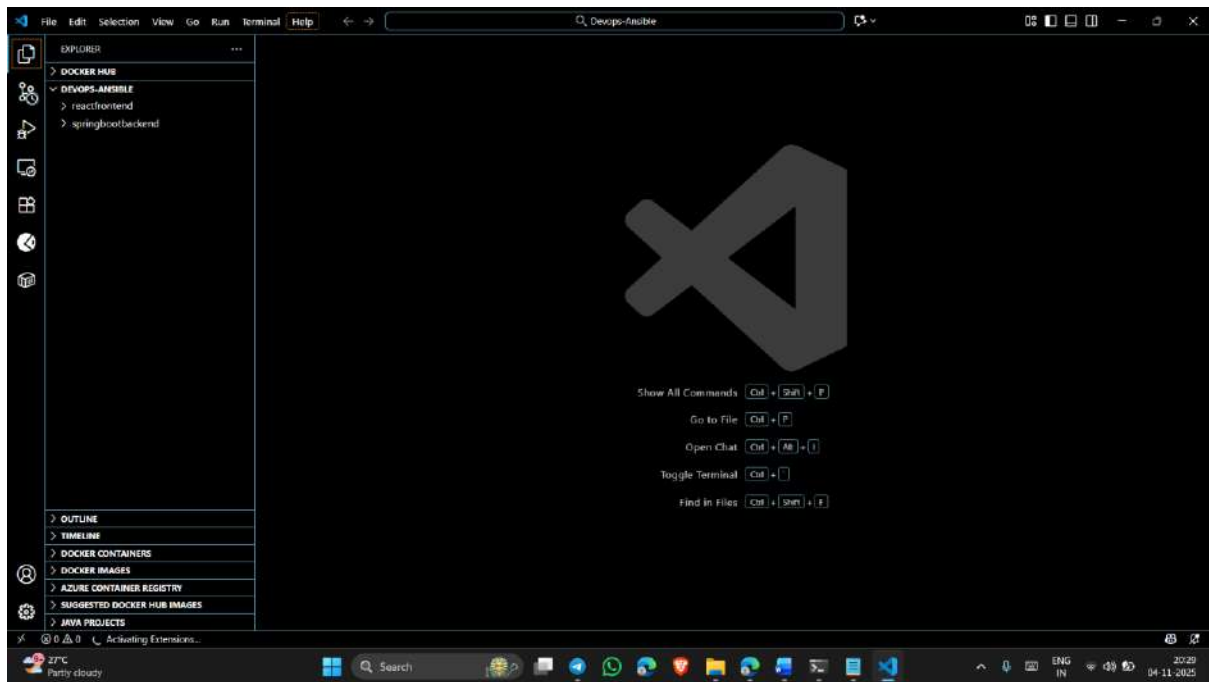


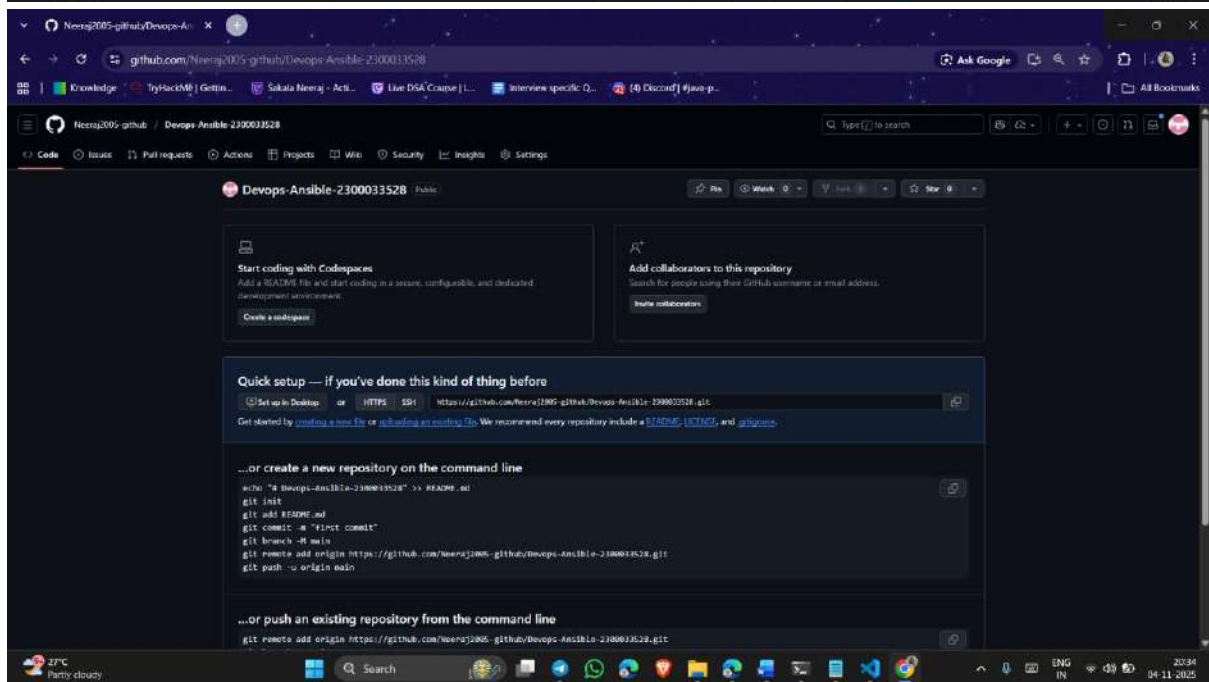
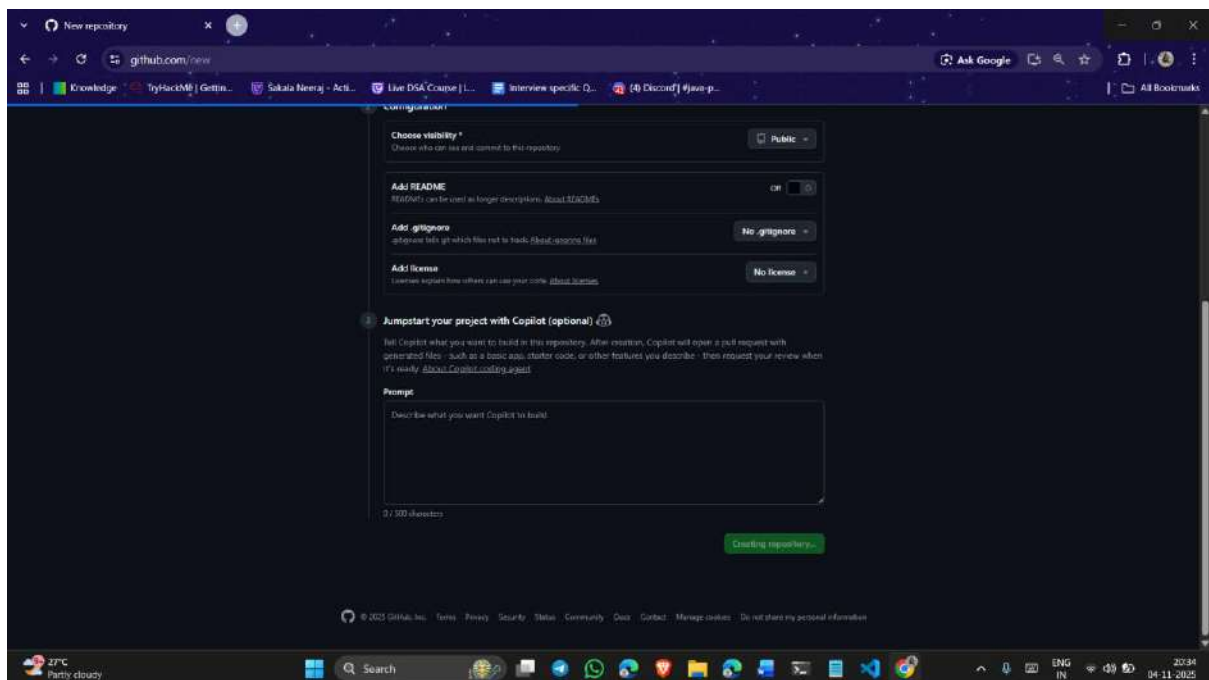
```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.26200.6899]
(c) Microsoft Corporation. All rights reserved.

D:\3-1 CI CD DEVOPS\ansible>git clone https://github.com/suryakiran1993/Devops-Ansible
Cloning into 'Devops-Ansible'...
remote: Enumerating objects: 118, done.
remote: Counting objects: 100% (118/118), done.
remote: Compressing objects: 100% (88/88), done.
remote: Total 118 (delta 13), reused 64 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (118/118), 63.49 KiB | 68.00 KiB/s, done.
Resolving deltas: 100% (13/13), done.

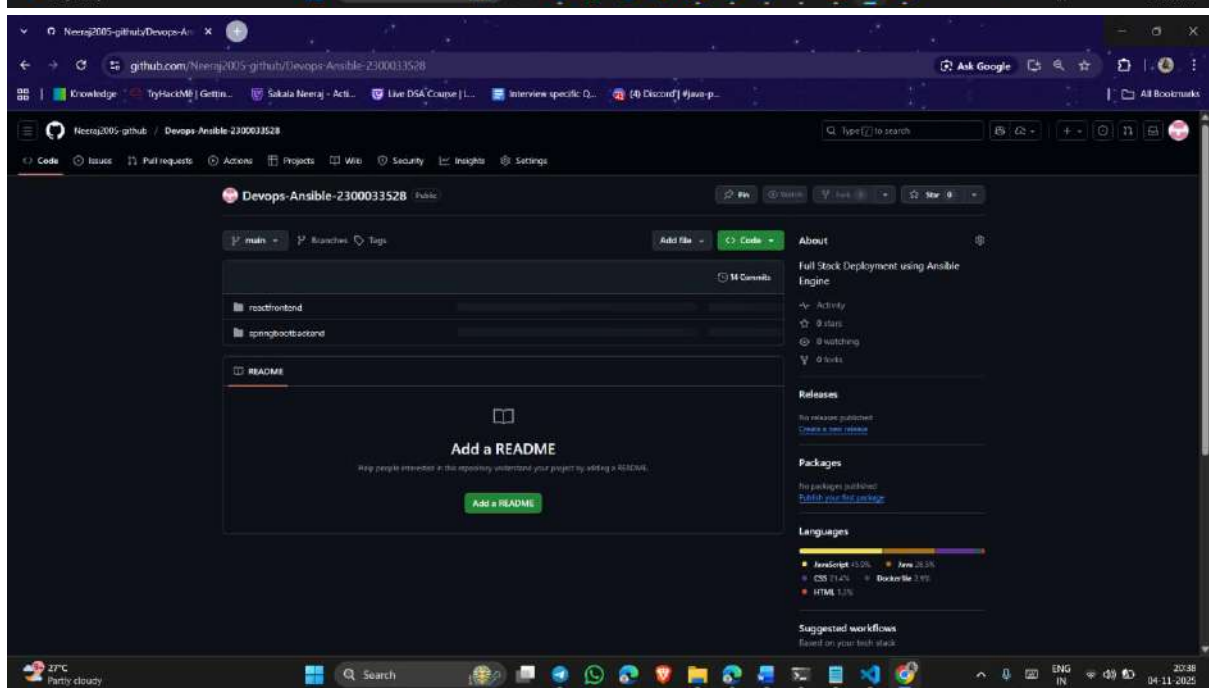
D:\3-1 CI CD DEVOPS\ansible>

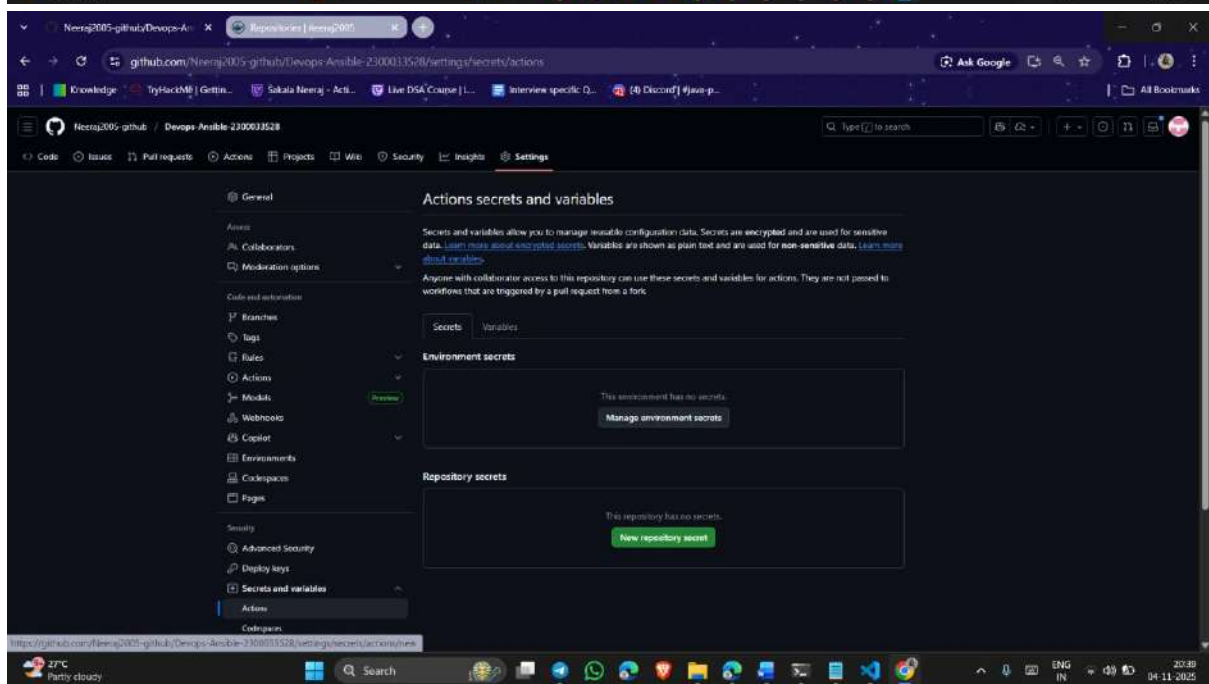
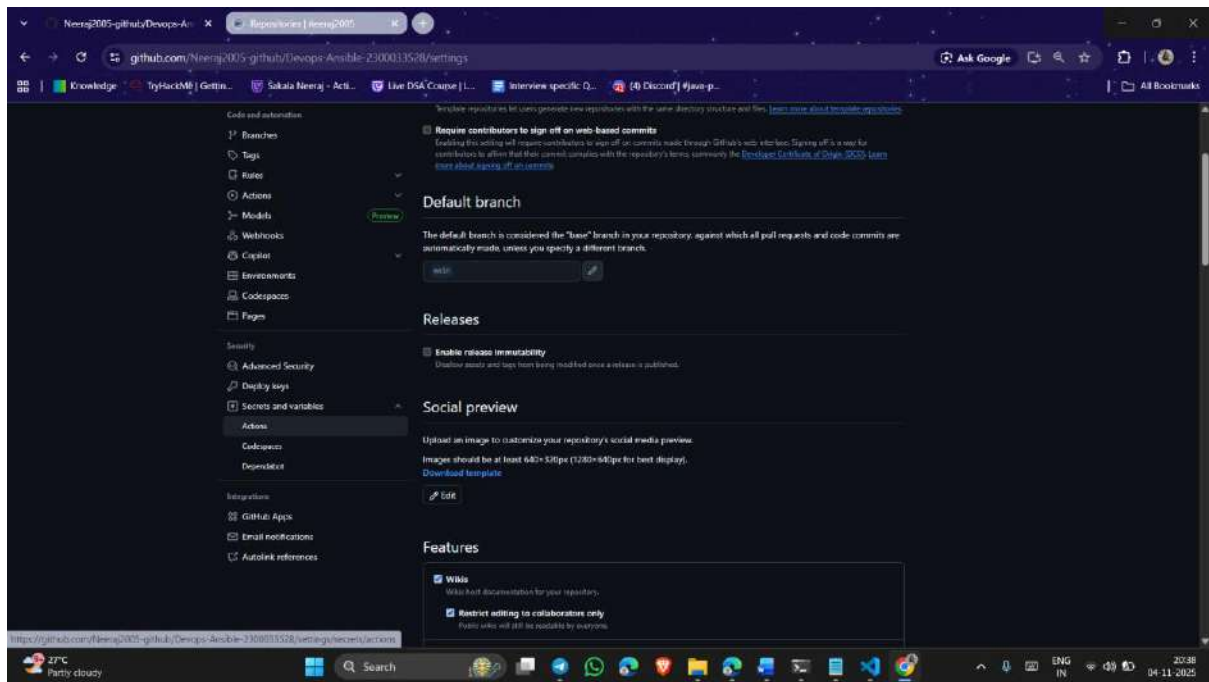
D:\3-1 CI CD DEVOPS\ansible>cd Devops-Ansible
D:\3-1 CI CD DEVOPS\ansible\Devops-Ansible>code .
```

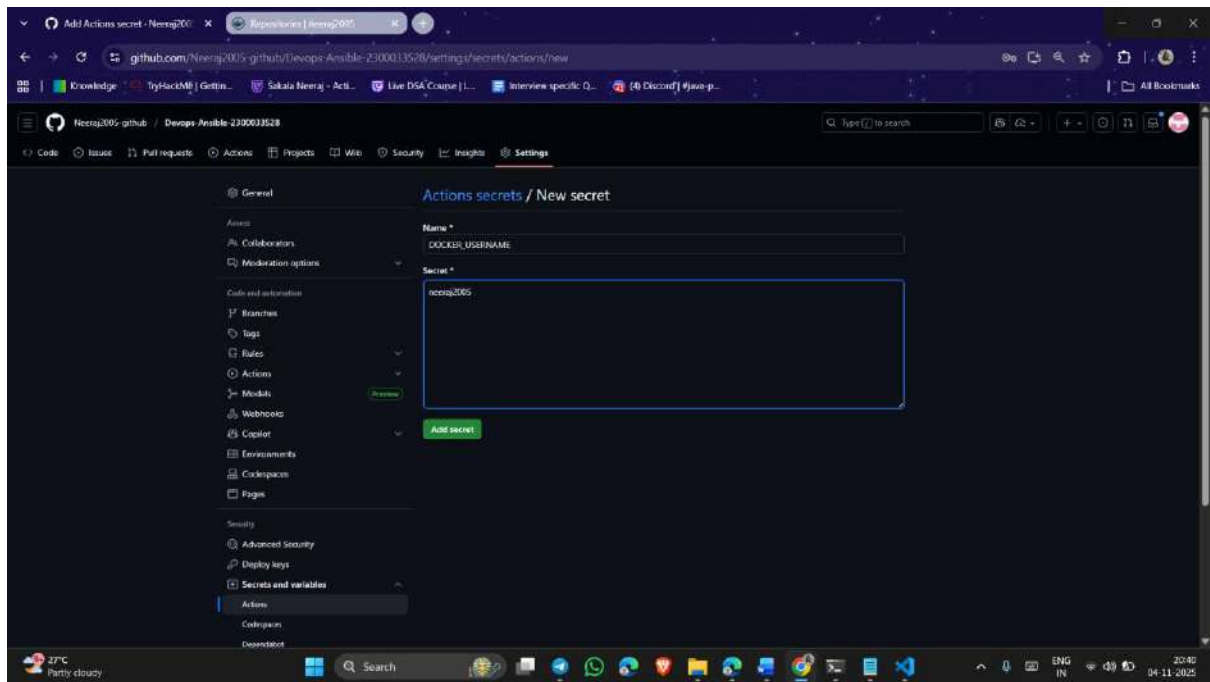




```
File Edit Selection View Go Run ... Devops-Ansible
PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS POSTMAN CONSOLE SPELL CHECKER powershell + - - - - -
PS D:\3-1 CI CD DEVEOPS\ansible\Devops-Ansible> git remote remove origin
PS D:\3-1 CI CD DEVEOPS\ansible\Devops-Ansible> git remote add origin https://github.com/Neeraj2005-github/Devops-Ansible-2300033528.git
PS D:\3-1 CI CD DEVEOPS\ansible\Devops-Ansible> git branch
* main
PS D:\3-1 CI CD DEVEOPS\ansible\Devops-Ansible> git add .
PS D:\3-1 CI CD DEVEOPS\ansible\Devops-Ansible> git commit -m "project updated"
On branch main
nothing to commit, working tree clean
PS D:\3-1 CI CD DEVEOPS\ansible\Devops-Ansible> git push -u origin main
Enumerating objects: 118, done.
Counting objects: 100% (118/118), done.
Delta compression using up to 12 threads
Compressing objects: 100% (75/75), done.
Writing objects: 100% (118/118), 63.49 KiB | 5.29 MiB/s, done.
Total 118 (delta 13), reused 118 (delta 13), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (13/13), done.
To https://github.com/Neeraj2005-github/Devops-Ansible-2300033528.git
 * [new branch] main -> main
branch 'main' set up to track 'origin/main'.
PS D:\3-1 CI CD DEVEOPS\ansible\Devops-Ansible>
```







NSNEERAJ SAKALA
Docker Personal

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Hub

Build Cloud

Hardened Images

Scout

Testcontainers Cloud

Docker Desktop

Settings

Account information

Email

Password

2FA

Personal access tokens

You can use a personal access token instead of a password for Docker CLI authentication. Create multiple tokens, control their scope.

Description	Scope	Status	Source	Created	Last used	
Doctor Kubernetes git acti...	Read, Write, Delete	Active	Manual	Nov 04, 2025 at 10:34:58	Nov 04, 2025	
Generated through deskto...	Read, Write, Delete	Active	Auto-generated	Oct 30, 2025 at 11:24:01	Oct 30, 2025	
Generated through deskto...	Read, Write, Delete	Active	Auto-generated	Oct 08, 2025 at 20:56:32	Oct 30, 2025 at 11:23:00	Never
Task Manager	Read, Write, Delete	Active	Manual	Oct 17, 2025 at 21:59:01	Oct 17, 2025 at 23:18:29	Never
Docker AWS	Read, Write, Delete	Active	Manual	Oct 15, 2025 at 10:28:34	Oct 15, 2025 at 11:01:22	Never
Practice	Read, Write, Delete	Active	Manual	Oct 15, 2025 at 07:18:36	Oct 15, 2025 at 07:53:53	Never

N

neeraj2005

What's new

My profile

Account settings

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Personal access tokens / New access token

Create access token

A personal access token is similar to a password except you can have many tokens and revoke access to each one at any time. [Learn more](#)

Access token description

Ansible demo

Expiration date

None

Optional

Access permissions

Read, Write, Delete

Read, Write, Delete tokens allow you to manage your repositories.

Cancel

Generate

Personal access tokens | Docker

Copy access token

Use this token as a password when you sign in from the Docker CLI client. [Learn more](#)

Make sure you copy your personal access token now. Your personal access token is only displayed once. It isn't stored and can't be retrieved later.

Access token description
Ansible demo

Expires on
Never

Access permissions
Read, Write, Delete

To use the access token from your Docker CLI client:

1. Run

```
$ docker login -u neeraj2005
```

[Copy](#)
2. At the password prompt, enter the personal access token.

```
docker_pat_7C8HixxBPdARYNEK1j_uIfkcmuT24
```

[Copy](#)

[Back to access tokens](#)

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27°C Partly cloudy

Search

github.com/neeraj2005-github/Devops-Ansible-2300013528/settings/secrets/actions/new

neeraj2005-github / Devops-Ansible-2300013528

Code Issues Pull requests Actions Projects Wiki Security Insights Settings

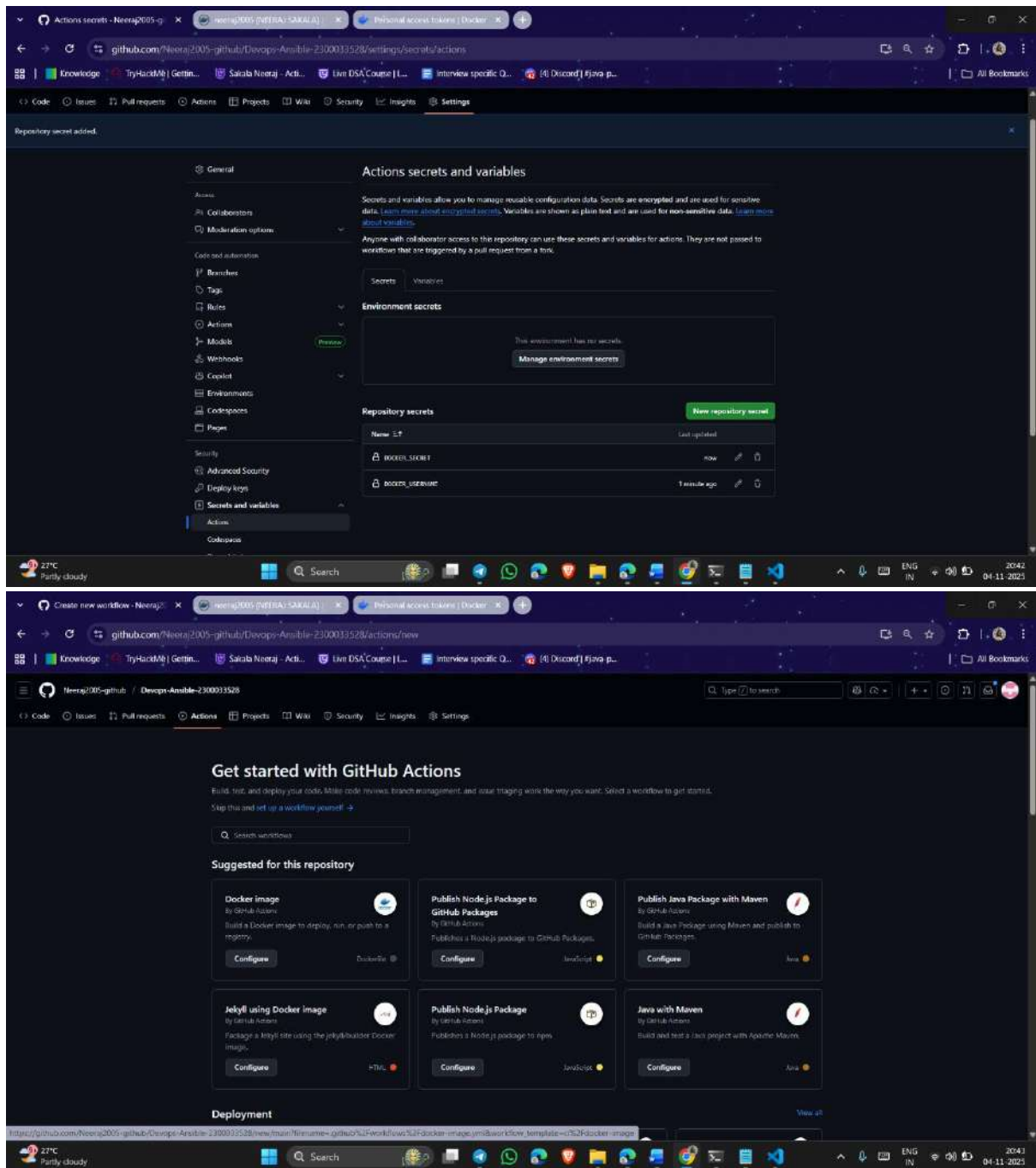
Actions secrets / New secret

Name *
DOCKER_SECRET

Secret *
docker_pat_7C8HixxBPdARYNEK1j_uIfkcmuT24

[Add secret](#)

General
Access
Collaborators
Moderation options
Code and automation
Branches
Tags
Rules
Actions
Models
Webhooks
Copilot
Environments
Code spaces
Pages
Security
Advanced Security
Deploy keys
Secrets and variables
Actions
Code spaces
Devcontainer



name: CI Build and Push Docker Images

on:

push:

branches:

- main

jobs:

build-and-push:

runs-on: ubuntu-latest

steps:

Step 1 — Checkout code

- name: Checkout Repository

uses: actions/checkout@v4

Step 2 — Set up Docker Buildx

- name: Set up Docker Buildx

uses: docker/setup-buildx-action@v3

Step 3 — Login to DockerHub

- name: Login to DockerHub

uses: docker/login-action@v3

with:

username: \${{ secrets.DOCKER_USERNAME }}

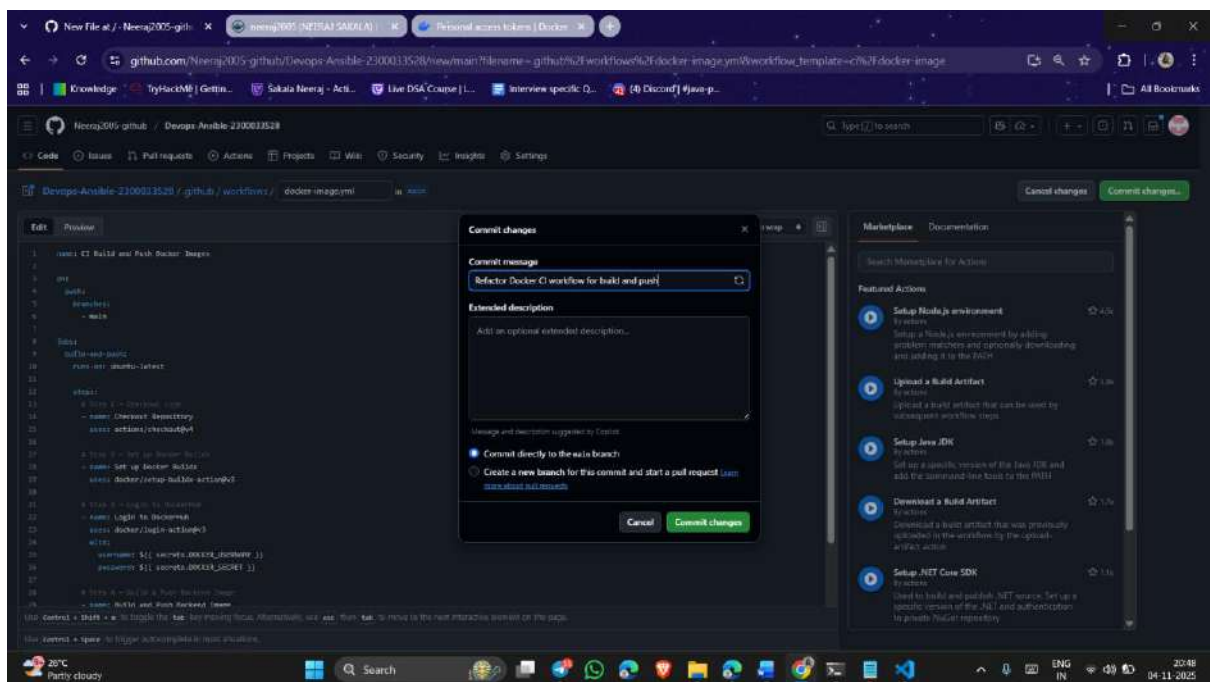
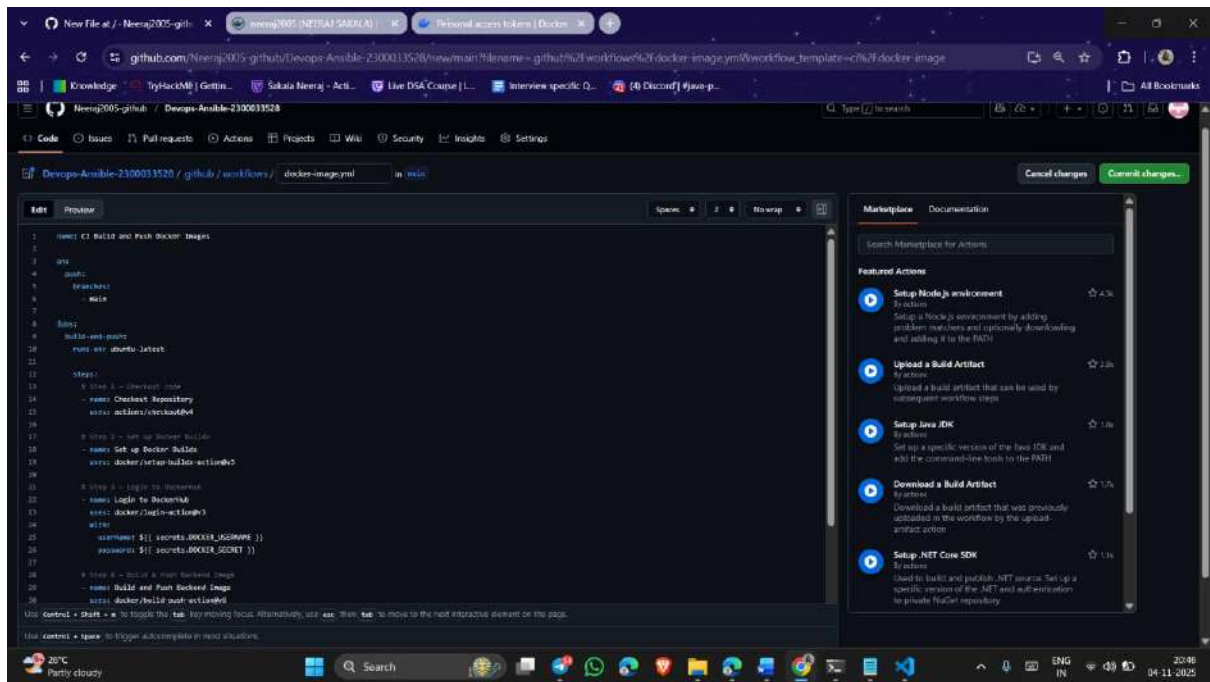
password: \${{ secrets.DOCKER_SECRET }}

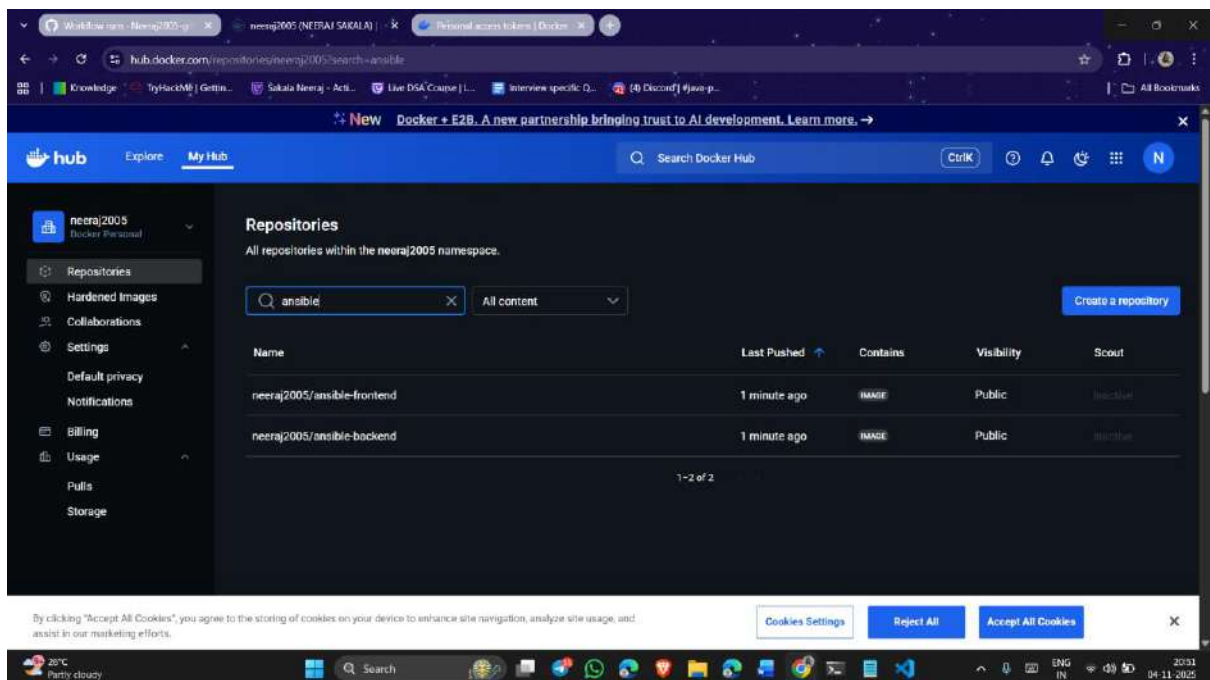
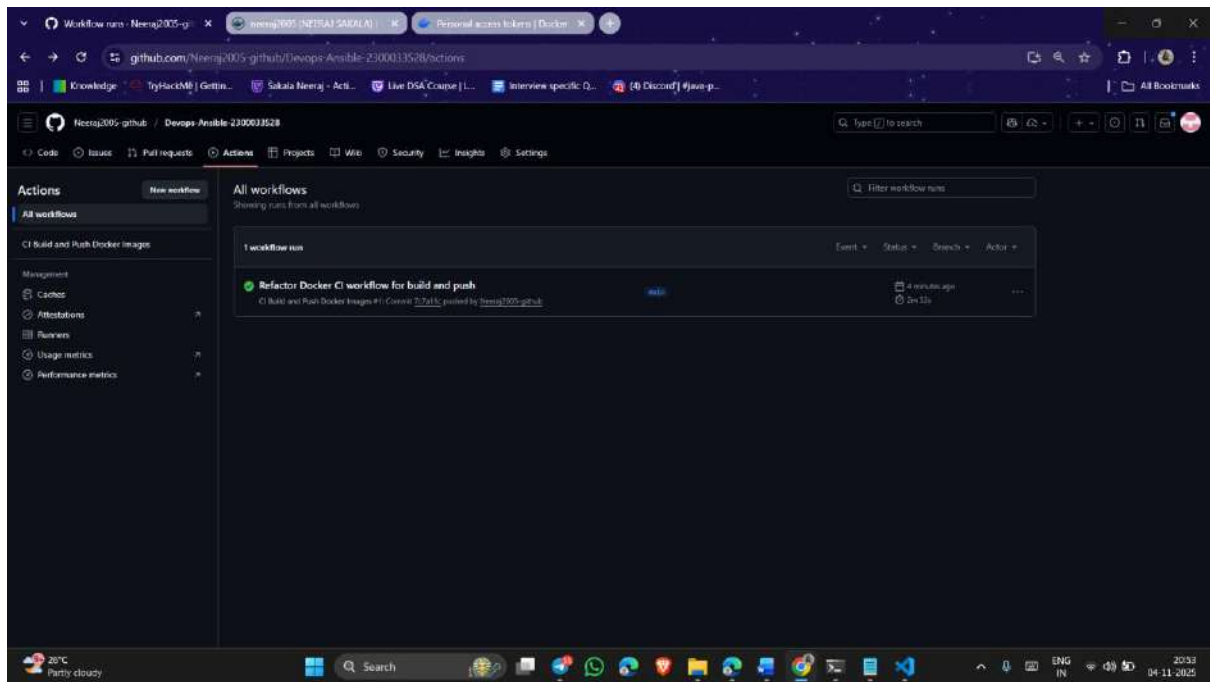
Step 4 — Build & Push Backend Image

```
- name: Build and Push Backend Image
  uses: docker/build-push-action@v6
  with:
    context: ./springbootbackend
    file: ./springbootbackend/backend.Dockerfile
    push: true
    tags: ${{ secrets.DOCKER_USERNAME }}/ansible-
backend:latest
```

Step 5 — Build & Push Frontend Image

```
- name: Build and Push Frontend Image
  uses: docker/build-push-action@v6
  with:
    context: ./reactfrontend
    file: ./reactfrontend/frontend.Dockerfile
    push: true
    tags: ${{ secrets.DOCKER_USERNAME }}/ansible-
frontend:latest
```






```
Windows PowerShell
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Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\sakal> wsl --update
Checking for updates.
The most recent version of Windows Subsystem for Linux is already installed.
PS C:\Users\sakal> |

PS C:\Users\sakal> wsl --update
Checking for updates.
The most recent version of Windows Subsystem for Linux is already installed.
PS C:\Users\sakal> wsl --list --online
The following is a list of valid distributions that can be installed.
Install using 'wsl.exe --install <Distro>'.

NAME                                FRIENDLY NAME
-----                                -
AlmaLinux-8                         AlmaLinux OS 8
AlmaLinux-9                         AlmaLinux OS 9
AlmaLinux-Kitten-10                 AlmaLinux OS Kitten 10
AlmaLinux-10                        AlmaLinux OS 10
Debian                              Debian GNU/Linux
FedoraLinux-43                      Fedora Linux 43
FedoraLinux-42                      Fedora Linux 42
SUSE-Linux-Enterprise-15-SP6        SUSE Linux Enterprise 15 SP6
SUSE-Linux-Enterprise-15-SP7        SUSE Linux Enterprise 15 SP7
Ubuntu                              Ubuntu
Ubuntu-24.04                        Ubuntu 24.04 LTS
archlinux                           Arch Linux
kali-linux                           Kali Linux Rolling
openSUSE-Tumbleweed                  openSUSE Tumbleweed
openSUSE-Leap-16.0                   openSUSE Leap 16.8
Ubuntu-20.04                        Ubuntu 20.04 LTS
Ubuntu-22.04                        Ubuntu 22.04 LTS
OracleLinux_7.9                     Oracle Linux 7.9
OracleLinux_8.10                    Oracle Linux 8.10
OracleLinux_9.5                     Oracle Linux 9.5
openSUSE-Leap-15.6                   openSUSE Leap 15.6
PS C:\Users\sakal> |
```

```
Windows PowerShell
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Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\sakal> wsl
Neeraj:/mnt/host/c/Users/sakal#

Windows PowerShell
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Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\sakal> wsl
Neeraj:/mnt/host/c/Users/sakal# sudo apt update && sudo apt upgrade -y
sh: sudo: not found
Neeraj:/mnt/host/c/Users/sakal#
```



```
Setting up openssl (3.0.13-0ubuntu3.6) ...
Setting up libcups2t64:amd64 (2.4.7-1.2ubuntu7.4) ...
Setting up libxml2:amd64 (2.9.14+dfsg-1.3ubuntu3.6) ...
Setting up systemd-resolved (255.4-1ubuntu0.11) ...
Setting up libetf0:amd64 (2.42-4ubuntu2.6) ...
Setting up python3.12-minimal (3.12.3-1ubuntu0.8) ...
Setting up snapd (2.71+ubuntu24.04) ...
Installing new version of config file /etc/apparmor.d/usr.lib.snapd.snap-confine.real ...
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 libpython3.12-stdlib:amd64 (3.12.3-1ubuntu0.8) ...
Setting up python3.12 (3.12.3-1ubuntu0.8) ...
Setting up dconf-service (0.40.0-4ubuntu0.1) ...
Setting up vim-tiny (2.9.1.0016-1ubuntu7.9) ...
Setting up software-properties-common (0.99.49.3) ...
Setting up libpython3.12t64:amd64 (3.12.3-1ubuntu0.8) ...
Setting up libgprofng0:amd64 (2.42-4ubuntu2.6) ...
Setting up libllvm20:amd64 (1:20.1.2-0ubuntu1-24.04.2) ...
Setting up binutils-x86-64-linux-gnu (2.42-4ubuntu2.6) ...
Setting up mesa-vulkan-drivers:amd64 (25.0.7-0ubuntu0.24.04.2) ...
Setting up mesa-libgallium:amd64 (25.0.7-0ubuntu0.24.04.2) ...
Setting up vim (2.9.1.0016-1ubuntu7.9) ...
Setting up dconf-gsettings-backend:amd64 (0.40.0-4ubuntu0.1) ...
Setting up libghml:amd64 (25.0.7-0ubuntu0.24.04.2) ...
Setting up libgl1-mesa-dri:amd64 (25.0.7-0ubuntu0.24.04.2) ...
Setting up binutils (2.42-4ubuntu2.6) ...
Setting up libegl-mesa0:amd64 (25.0.7-0ubuntu0.24.04.2) ...
Setting up libglx-mesa0:amd64 (25.0.7-0ubuntu0.24.04.2) ...
Processing triggers for libc-bin (2.39-0ubuntu8.6) ...
Processing triggers for rsyslog (8.2312.0-3ubuntu9.1) ...
Processing triggers for systemd (255.4-1ubuntu8.11) ...
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for liblib2.0-0:amd64 (2.38.0-6ubuntu3.4) ...
Processing triggers for dbus (1.14.10-4ubuntu1) ...
Processing triggers for install-info (7.1-3build2) ...
Processing triggers for hicolor-icon-theme (0.17-2) ...
klu@Neeraj:/mnt/c/Users/sakal$ sudo apt install -y python3 python3-pip python3-venv
python3 --version
pip3 --version
```

```
Preparing to unpack .../20-libhwasa0_14.2.0-4ubuntu2-24.04_and64.deb ...
Unpacking libhwasa0:amd64 (14.2.0-4ubuntu2-24.04) ...
Selecting previously unselected package libquadmath0:amd64.
Preparing to unpack .../21-libquadmath0_14.2.0-4ubuntu2-24.04_and64.deb ...
Unpacking libquadmath0:amd64 (14.2.0-4ubuntu2-24.04) ...
Selecting previously unselected package libgcc-13-dev:amd64.
Preparing to unpack .../22-libgcc-13-dev_13.3.0-6ubuntu2-24.04_and64.deb ...
Unpacking libgcc-13-dev:amd64 (13.3.0-6ubuntu2-24.04) ...
Selecting previously unselected package gcc-13-x86-64-linux-gnu.
Preparing to unpack .../23-gcc-13-x86-64-linux-gnu_13.3.0-6ubuntu2-24.04_and64.deb ...
Unpacking gcc-13-x86-64-linux-gnu (13.3.0-6ubuntu2-24.04) ...
Selecting previously unselected package gcc-13.
Preparing to unpack .../24-gcc-13_13.3.0-6ubuntu2-24.04_and64.deb ...
Unpacking gcc-13 (13.3.0-6ubuntu2-24.04) ...
Selecting previously unselected package gcc-x86-64-linux-gnu.
Preparing to unpack .../25-gcc-x86-64-linux-gnu_4:13.2.0-7ubuntu1_and64.deb ...
Unpacking gcc-x86-64-linux-gnu (4:13.2.0-7ubuntu1) ...
Selecting previously unselected package gcc.
Preparing to unpack .../26-gcc_4:13.2.0-7ubuntu1_and64.deb ...
Unpacking gcc (4:13.2.0-7ubuntu1) ...
Selecting previously unselected package libstdc++-13-dev:amd64.
Preparing to unpack .../27-libstdc++-13-dev_13.3.0-6ubuntu2-24.04_and64.deb ...
Unpacking libstdc++-13-dev:amd64 (13.3.0-6ubuntu2-24.04) ...
Selecting previously unselected package g++-13-x86-64-linux-gnu.
Preparing to unpack .../28-g++-13-x86-64-linux-gnu_13.3.0-6ubuntu2-24.04_and64.deb ...
Unpacking g++-13-x86-64-linux-gnu (13.3.0-6ubuntu2-24.04) ...
Selecting previously unselected package g++-13.
Preparing to unpack .../29-g++-13_13.3.0-6ubuntu2-24.04_and64.deb ...
Unpacking g++-13 (13.3.0-6ubuntu2-24.04) ...
Selecting previously unselected package g++-x86-64-linux-gnu.
Preparing to unpack .../30-g++-x86-64-linux-gnu_4:13.2.0-7ubuntu1_and64.deb ...
Unpacking g++-x86-64-linux-gnu (4:13.2.0-7ubuntu1) ...
Selecting previously unselected package g++.
Preparing to unpack .../31-g++_4:13.2.0-7ubuntu1_and64.deb ...
Unpacking g++ (4:13.2.0-7ubuntu1) ...
Selecting previously unselected package make.
Preparing to unpack .../32-make_4.3-4.1build2_and64.deb ...
Unpacking make (4.3-4.1build2) ...
Selecting previously unselected package libdpkg-perl.
klu@Neeraj:~$ [0.25%] [*****]
```



```
Setting up libitm1:amd64 (14.2.0-4ubuntu2-24.04) ...
Setting up libjs-underscore (1.13.4-dfs+~1.11.4-3) ...
Setting up libalgorithm-merge-perl (0.08-5) ...
Setting up python3.12-venv (3.12.3-1ubuntu0.8) ...
Setting up cpp-x86-64-linux-gnu (13.3.0-6ubuntu2-24.04) ...
Setting up dpkg-dev (1.22.6ubuntu6.5) ...
Setting up python3-venv (3.12.3-0ubuntu2) ...
Setting up libjs-sphinxdoc (7.2.6-6) ...
Setting up libgcc-13-dev:amd64 (13.3.0-6ubuntu2-24.04) ...
Setting up libc6-dev:amd64 (2.39-0ubuntu8.6) ...
Setting up libstdc++-13-dev:amd64 (13.3.0-6ubuntu2-24.04) ...
Setting up cpp-x86-64-linux-gnu (4:13.2.0-7ubuntu1) ...
Setting up cpp-13 (13.3.0-6ubuntu2-24.04) ...
Setting up gcc-x86-64-linux-gnu (13.3.0-6ubuntu2-24.04) ...
Setting up libexpat1-dev:amd64 (2.6.1-2ubuntu0.3) ...
Setting up gcc-13 (13.3.0-6ubuntu2-24.04) ...
Setting up zlibc-dev:amd64 (1:1.3.dfsg-3.1ubuntu2.1) ...
Setting up cpp (4:13.2.0-7ubuntu1) ...
Setting up g++-13-x86-64-linux-gnu (13.3.0-6ubuntu2-24.04) ...
Setting up gcc-x86-64-linux-gnu (4:13.2.0-7ubuntu1) ...
Setting up libpython3.12-dev:amd64 (3.12.3-1ubuntu0.8) ...
Setting up gcc (4:13.2.0-7ubuntu1) ...
Setting up python3.12-dev (3.12.3-1ubuntu0.8) ...
Setting up g++-x86-64-linux-gnu (4:13.2.0-7ubuntu1) ...
Setting up g++-13 (13.3.0-6ubuntu2-24.04) ...
Setting up libpython3-dev:amd64 (3.12.3-0ubuntu2) ...
Setting up python3-dev (3.12.3-0ubuntu2) ...
Setting up g++ (4:13.2.0-7ubuntu1) ...
update-alternatives: using /usr/bin/g++ to provide /usr/bin/c++ (c++) in auto mode
Setting up build-essential (12.10ubuntu1) ...
Setting up libheif1:amd64 (1.17.6-1ubuntu4.1) ...
Setting up libgd3:amd64 (2.3.3-9ubuntu5) ...
Setting up libc-devtools (2.39-0ubuntu8.6) ...
Setting up libheif-plugin-aomdec:amd64 (1.17.6-1ubuntu4.1) ...
Setting up libheif-plugin-libde265:amd64 (1.17.6-1ubuntu4.1) ...
Setting up libheif-plugin-aomenc:amd64 (1.17.6-1ubuntu4.1) ...
Processing triggers for libc-bin (2.39-0ubuntu8.6) ...
Processing triggers for man-db (2.12.0-4build2) ...
Python 3.12.3
pip 24.0 from /usr/lib/python3/dist-packages/pip (python 3.12)
klu@Neeraj:/mnt/c/Users/sakal$ sudo apt install -y software-properties-common git curl apt-transport-https ca-certificates gnupg lsb-release

Setting up libheif-plugin-aomdec:amd64 (1.17.6-1ubuntu4.1) ...
Setting up libheif-plugin-libde265:amd64 (1.17.6-1ubuntu4.1) ...
Setting up libheif-plugin-aomenc:amd64 (1.17.6-1ubuntu4.1) ...
Processing triggers for libc-bin (2.39-0ubuntu8.6) ...
Processing triggers for man-db (2.12.0-4build2) ...
Python 3.12.3
pip 24.0 from /usr/lib/python3/dist-packages/pip (python 3.12)
klu@Neeraj:/mnt/c/Users/sakal$ sudo apt install -y software-properties-common git curl apt-transport-https ca-certificates gnupg lsb-release
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
software-properties-common is already the newest version (0.99.49.3).
software-properties-common set to manually installed.
git is already the newest version (1:2.43.0-1ubuntu7.3).
git set to manually installed.
curl is already the newest version (8.5.0-2ubuntu10.6).
curl set to manually installed.
ca-certificates is already the newest version (20240203).
ca-certificates set to manually installed.
gnupg is already the newest version (2.4.4-2ubuntu17.3).
gnupg set to manually installed.
lsb-release is already the newest version (12.0-2).
lsb-release set to manually installed.
The following package was automatically installed and is no longer required:
  liblvm2
Use 'sudo apt autoremove' to remove it.
The following NEW packages will be installed:
  apt-transport-https
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 3970 B of archives.
After this operation, 36.9 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 apt-transport-https all 2.8.3 [3970 B]
Fetched 3970 B in 1s (5942 B/s)
Selecting previously unselected package apt-transport-https.
(Reading database ... 47786 files and directories currently installed.)
Preparing to unpack .../apt-transport-https_2.8.3_all.deb ...
Unpacking apt-transport-https (2.8.3) ...
Setting up apt-transport-https (2.8.3) ...
klu@Neeraj:/mnt/c/Users/sakal$
```

```
kl@Neeraj:/mnt/c/Users/sakal$ sudo apt autoremove
The following package was automatically installed and is no longer required:
  liblvm19
Use 'sudo apt autoremove' to remove it.
The following NEW packages will be installed:
  apt-transport-https
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 3970 B of archives.
After this operation, 36.9 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 apt-transport-https all 2.8.3 [3970 B]
Fetched 3970 B in 1s (5942 B/s)
Selecting previously unselected package apt-transport-https.
(Reading database ... 47786 files and directories currently installed.)
Preparing to unpack .../apt-transport-https_2.8.3_all.deb ...
Unpacking apt-transport-https (2.8.3) ...
Setting up apt-transport-https (2.8.3) ...
kl@Neeraj:/mnt/c/Users/sakal$ sudo add-apt-repository --yes --update ppa:ansible/ansible
Repository: 'types: deb
URIs: https://ppa.launchpadcontent.net/ansible/ansible/ubuntu/
Suites: noble
Components: main
'
Description:
Ansible is a radically simple IT automation platform that makes your applications and systems easier to deploy. Avoid writing scripts or custom code to depl
oy and update your applications- automate in a language that approaches plain English, using SSH, with no agents to install on remote systems.

http://ansible.com/

If you Face any issues while installing Ansible PPA, file an issue here:
https://github.com/ansible-community/ppa/issues
More info: https://launchpad.net/~ansible/+archive/ubuntu/ansible
Adding repository.
Hit:1 http://archive.ubuntu.com/ubuntu noble InRelease
Hit:2 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:3 http://archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:4 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Get:5 https://ppa.launchpadcontent.net/ansible/ansible/ubuntu noble InRelease [17.8 kB]
Get:6 https://ppa.launchpadcontent.net/ansible/ansible/ubuntu noble/main amd64 Packages [776 B]
Get:7 https://ppa.launchpadcontent.net/ansible/ansible/ubuntu noble/main Translation-en [472 B]
Fetched 19.1 kB in 2s (8804 B/s)
Reading package lists... Done
kl@Neeraj:/mnt/c/Users/sakal$
```

```
kl@Neeraj:/mnt/c/Users/sakal$ sudo apt install -y ansible
Hit:1 http://archive.ubuntu.com/ubuntu noble InRelease
Hit:2 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:3 http://archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:4 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Get:5 https://ppa.launchpadcontent.net/ansible/ansible/ubuntu noble InRelease [17.8 kB]
Get:6 https://ppa.launchpadcontent.net/ansible/ansible/ubuntu noble/main amd64 Packages [776 B]
Get:7 https://ppa.launchpadcontent.net/ansible/ansible/ubuntu noble/main Translation-en [472 B]
Fetched 19.1 kB in 2s (8804 B/s)
Reading package lists... Done
kl@Neeraj:/mnt/c/Users/sakal$ sudo apt install -y ansible
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following package was automatically installed and is no longer required:
  liblvm19
Use 'sudo apt autoremove' to remove it.
The following additional packages will be installed:
  ansible-core python3-jmespath python3-kerberos python3-nacl python3-ntlm-auth python3-packaging python3-paramiko python3-requests-ntlm
  python3-resolve-lib python3-winrm python3-xmldict sshpass
Suggested packages:
  python-nacl-doc python3-gssapi python3-invoke
The following NEW packages will be installed:
  ansible ansible-core python3-jmespath python3-kerberos python3-nacl python3-ntlm-auth python3-packaging python3-paramiko python3-requests-ntlm
  python3-resolve-lib python3-winrm python3-xmldict sshpass
0 upgraded, 13 newly installed, 0 to remove and 0 not upgraded.
Need to get 20.3 MB of archives.
After this operation, 224 MB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu noble/main amd64 python3-packaging all 24.0-1 [41.1 kB]
Get:2 http://archive.ubuntu.com/ubuntu noble/universe amd64 python3-resolve-lib all 1.0.1-1 [25.7 kB]
Get:3 https://ppa.launchpadcontent.net/ansible/ansible/ubuntu noble/main amd64 ansible-core all 2.19.3-1ppa-noble [1133 kB]
Get:4 http://archive.ubuntu.com/ubuntu noble/main amd64 python3-jmespath all 1.0.1-1 [21.3 kB]
Get:5 http://archive.ubuntu.com/ubuntu noble/universe amd64 python3-kerberos amd64 1.1.14-3.1build9 [21.2 kB]
Get:6 http://archive.ubuntu.com/ubuntu noble/main amd64 python3-nacl amd64 1.5.0-4build1 [57.9 kB]
Get:7 http://archive.ubuntu.com/ubuntu noble/universe amd64 python3-ntlm-auth all 1.5.0-1 [21.3 kB]
Get:8 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 python3-paramiko all 2.12.0-2ubuntu4.1 [137 kB]
Get:9 http://archive.ubuntu.com/ubuntu noble/universe amd64 python3-requests-ntlm all 1.1.0-3 [5388 B]
Get:10 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 python3-xmldict all 0.13.0-lubuntu8.24.04.1 [14.3 kB]
Get:11 http://archive.ubuntu.com/ubuntu noble/universe amd64 python3-winrm all 0.4.3-2 [31.9 kB]
Get:12 http://archive.ubuntu.com/ubuntu noble/universe amd64 sshpass amd64 1.09-1 [11.7 kB]
Get:13 https://ppa.launchpadcontent.net/ansible/ansible/ubuntu noble/main amd64 ansible all 2.19.3-1ppa-noble [18.7 MB]
27% [13 ansible 755 kB/18.7 MB 4%]
120 kB/s 2min 29s
```



```
kl@Neeraj:/mnt/c/Users/sakal$ sudo apt-get install python3-kerberos python3-nacl python3-ntlm-auth python3-paramiko python3-requests-ntlm python3-xmldict python3-winrm sshpass
Selecting previously unselected package python3-kerberos.
Preparing to unpack .../85-python3-kerberos_1.1.14-3.1build9_amd64.deb ...
Unpacking python3-kerberos (1.1.14-3.1build9) ...
Selecting previously unselected package python3-nacl.
Preparing to unpack .../86-python3-nacl_1.5.0-4build1_amd64.deb ...
Unpacking python3-nacl (1.5.0-4build1) ...
Selecting previously unselected package python3-ntlm-auth.
Preparing to unpack .../87-python3-ntlm-auth_1.5.0-1_all.deb ...
Unpacking python3-ntlm-auth (1.5.0-1) ...
Selecting previously unselected package python3-paramiko.
Preparing to unpack .../88-python3-paramiko_2.12.0-2ubuntu4.1_all.deb ...
Unpacking python3-paramiko (2.12.0-2ubuntu4.1) ...
Selecting previously unselected package python3-requests-ntlm.
Preparing to unpack .../89-python3-requests-ntlm_1.1.0-3_all.deb ...
Unpacking python3-requests-ntlm (1.1.0-3) ...
Selecting previously unselected package python3-xmldict.
Preparing to unpack .../10-python3-xmldict_0.13.0-lubuntu0.24.04.1_all.deb ...
Unpacking python3-xmldict (0.13.0-lubuntu0.24.04.1) ...
Selecting previously unselected package python3-winrm.
Preparing to unpack .../11-python3-winrm_0.4.3-2_all.deb ...
Unpacking python3-winrm (0.4.3-2) ...
Selecting previously unselected package sshpass.
Preparing to unpack .../12-sshpass_1.09-1_amd64.deb ...
Unpacking sshpass (1.09-1) ...
Setting up python3-ntlm-auth (1.5.0-1) ...
Setting up python3-resolvlib (1.0.1-1) ...
Setting up python3-kerberos (1.1.14-3.1build9) ...
Setting up sshpass (1.09-1) ...
Setting up python3-xmldict (0.13.0-lubuntu0.24.04.1) ...
Setting up python3-packaging (24.0-1) ...
Setting up python3-jmespath (1.0.1-1) ...
Setting up python3-nacl (1.5.0-4build1) ...
Setting up python3-requests-ntlm (1.1.0-3) ...
Setting up ansible-core (2.19.3-lppa-noble) ...
Setting up python3-winrm (0.4.3-2) ...
Setting up ansible (2.19.3-lppa-noble) ...
Setting up python3-paramiko (2.12.0-2ubuntu4.1) ...
Processing triggers for man-db (2.12.0-4build2) ...
kl@Neeraj:/mnt/c/Users/sakal$
```

```
kl@Neeraj:/mnt/c/Users/sakal$ ansible --version
ansible [core 2.19.3]
  config file = /etc/ansible/ansible.cfg
  configured module search path = ['/home/kl/.ansible/plugins/modules', '/usr/share/ansible/plugins/modules']
  ansible python module location = /usr/lib/python3/dist-packages/ansible
  ansible collection location = /home/kl/.ansible/collections:/usr/share/ansible/collections
  executable location = /usr/bin/ansible
  python version = 3.12.3 (main, Aug 14 2025, 17:47:21) [GCC 13.3.0] (/usr/bin/python3)
  jinja version = 3.1.2
  pyyaml version = 6.0.1 (with libyaml v0.2.5)
kl@Neeraj:/mnt/c/Users/sakal$
```

```
kl@Neeraj:/mnt/c/Users/sakal$ sudo mkdir -p /etc/apt/keyrings
curl -fsSL https://pkgs.k8s.io/core:stable/v1.30/deb/Release.key | \
sudo gpg --dearmor -o /etc/apt/keyrings/kubernetes-apt-keyring.gpg

echo "deb [signed-by=/etc/apt/keyrings/kubernetes-apt-keyring.gpg] \
https://pkgs.k8s.io/core:stable/v1.30/deb/ ." | \
sudo tee /etc/apt/sources.list.d/kubernetes.list

deb [signed-by=/etc/apt/keyrings/kubernetes-apt-keyring.gpg] https://pkgs.k8s.io/core:stable/v1.30/deb/ /
kl@Neeraj:/mnt/c/Users/sakal$
```

```
kl@Neeraj:/mnt/c/Users/sakal$ sudo apt update
Hit:1 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:3 http://archive.ubuntu.com/ubuntu noble InRelease
Hit:4 https://ppa.launchpadcontent.net/ansible/ansible/ubuntu noble InRelease
Hit:5 http://archive.ubuntu.com/ubuntu noble-updates InRelease
Get:2 https://prod-cdn.packages.k8s.io/repositories/isc/kubernetes:core:stable/v1.30/deb InRelease [1192 B]
Get:6 https://prod-cdn.packages.k8s.io/repositories/isc/kubernetes:core:stable/v1.30/deb Packages [20.3 kB]
Hit:7 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Fetched 21.5 kB in 2s (12.8 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
kl@Neeraj:/mnt/c/Users/sakal$
```

```
klu@Neeraj:/mnt/c/Users/sakal$ sudo apt install -y kubect1
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following package was automatically installed and is no longer required:
  libllvm19
Use 'sudo apt autoremove' to remove it.
The following NEW packages will be installed:
  kubect1
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 10.9 MB of archives.
After this operation, 52.8 MB of additional disk space will be used.
Get:1 https://prod-cdn.packages.k8s.io/repositories/isy/kubernetes:/core:/stable:/v1.30/deb kubect1 1.30.14-1.1 [10.9 MB]
Fetched 10.9 MB in 7s (1518 kB/s)
Selecting previously unselected package kubect1.
(Reading database ... 72822 files and directories currently installed.)
Preparing to unpack .../kubect1.1.30.14-1.1.amd64.deb ...
Unpacking kubect1 (1.30.14-1.1) ...
Setting up kubect1 (1.30.14-1.1) ...
klu@Neeraj:/mnt/c/Users/sakal$
```

```
klu@Neeraj:/mnt/c/Users/sakal$ kubect1 version --client
Client Version: v1.30.14
Kustomize Version: v5.0.4-0.20238601165947-6ce0bf390ce3
klu@Neeraj:/mnt/c/Users/sakal$
```

```
klu@Neeraj:/mnt/c/Users/sakal$ curl -sfl https://get.k3s.io | sh -
[INFO] Finding release for channel stable
[INFO] Using v1.33.5+k3s1 as release
[INFO] Downloading hash https://github.com/k3s-io/k3s/releases/download/v1.33.5+k3s1/sha256sum-amd64.txt
[INFO] Downloading binary https://github.com/k3s-io/k3s/releases/download/v1.33.5+k3s1/k3s
[INFO] Verifying binary download
[INFO] Installing k3s to /usr/local/bin/k3s
[INFO] Skipping installation of SELinux RPM
[INFO] Skipping /usr/local/bin/kubect1 symlink to k3s, command exists in PATH at /usr/bin/kubect1
[INFO] Creating /usr/local/bin/crictl symlink to k3s
[INFO] Creating /usr/local/bin/ctr symlink to k3s
[INFO] Creating killall script /usr/local/bin/k3s-killall.sh
[INFO] Creating uninstall script /usr/local/bin/k3s-uninstall.sh
[INFO] env: Creating environment file /etc/systemd/system/k3s.service.env
[INFO] systemd: Creating service file /etc/systemd/system/k3s.service
[INFO] systemd: Enabling k3s unit
Created symlink /etc/systemd/system/multi-user.target.wants/k3s.service + /etc/systemd/system/k3s.service.
[INFO] Host iptables-save/iptables-restore tools not found
[INFO] Host ip6tables-save/ip6tables-restore tools not found
[INFO] systemd: Starting k3s
klu@Neeraj:/mnt/c/Users/sakal$
```

```
[INFO] Creating /usr/local/bin/ctr symlink to k3s
[INFO] Creating killall script /usr/local/bin/k3s-killall.sh
[INFO] Creating uninstall script /usr/local/bin/k3s-uninstall.sh
[INFO] env: Creating environment file /etc/systemd/system/k3s.service.env
[INFO] systemd: Creating service file /etc/systemd/system/k3s.service
[INFO] systemd: Enabling k3s unit
Created symlink /etc/systemd/system/multi-user.target.wants/k3s.service + /etc/systemd/system/k3s.service.
[INFO] Host iptables-save/iptables-restore tools not found
[INFO] Host ip6tables-save/ip6tables-restore tools not found
[INFO] systemd: Starting k3s
klu@Neeraj:/mnt/c/Users/sakal$ sudo systemctl status k3s
● k3s.service - Lightweight Kubernetes
   Loaded: loaded (/etc/systemd/system/k3s.service; enabled; preset: enabled)
   Active: active (running) since Tue 2025-11-04 16:01:46 UTC; 24s ago
     Docs: https://k3s.io
   Process: 5754 ExecStartPre=/sbin/modprobe br_netfilter (code=exited, status=0/SUCCESS)
   Process: 5755 ExecStartPre=/sbin/modprobe overlay (code=exited, status=0/SUCCESS)
   Main PID: 5758 (k3s-server)
    Tasks: 157
   Memory: 650.0M (peak: 661.4M)
     CPU: 23.10s
   CGroup: /system.slice/k3s.service
           └─5758 /usr/local/bin/k3s server
             └─5823 "containerd"
               └─6667 /var/lib/rancher/k3s/data/86a616cda0fb57fa13670ac5a16f1699f4b2be4772e842d97984c69698ffdc2/bin/containerd-shim-runc-v2 --namespace k8s.i
               └─6697 /var/lib/rancher/k3s/data/86a616cda0fb57fa13670ac5a16f1699f4b2be4772e842d97984c69698ffdc2/bin/containerd-shim-runc-v2 --namespace k8s.i
               └─6728 /var/lib/rancher/k3s/data/86a616cda0fb57fa13670ac5a16f1699f4b2be4772e842d97984c69698ffdc2/bin/containerd-shim-runc-v2 --namespace k8s.i
               └─6753 /var/lib/rancher/k3s/data/86a616cda0fb57fa13670ac5a16f1699f4b2be4772e842d97984c69698ffdc2/bin/containerd-shim-runc-v2 --namespace k8s.i
               └─6769 /var/lib/rancher/k3s/data/86a616cda0fb57fa13670ac5a16f1699f4b2be4772e842d97984c69698ffdc2/bin/containerd-shim-runc-v2 --namespace k8s.i

Nov 04 16:01:53 Neeraj k3s[5758]: time="2025-11-04T16:01:53Z" level=info msg="Started tunnel to 172.29.5.50:6443"
Nov 04 16:01:53 Neeraj k3s[5758]: time="2025-11-04T16:01:53Z" level=info msg="Stopped tunnel to 127.0.0.1:6443"
Nov 04 16:01:53 Neeraj k3s[5758]: time="2025-11-04T16:01:53Z" level=info msg="Connecting to proxy" url="wss://172.29.5.50:6443/v1-k3s/connect"
Nov 04 16:01:53 Neeraj k3s[5758]: time="2025-11-04T16:01:53Z" level=info msg="Proxy done" err="context canceled" url="wss://127.0.0.1:6443/v1-k3s/connect"
Nov 04 16:01:53 Neeraj k3s[5758]: time="2025-11-04T16:01:53Z" level=info msg="error in remotetunnel server [000]: websocket: close 1006 (abnormal closure):"
Nov 04 16:01:53 Neeraj k3s[5758]: time="2025-11-04T16:01:53Z" level=info msg="Handling backend connection request [neeraj]"
Nov 04 16:01:53 Neeraj k3s[5758]: time="2025-11-04T16:01:53Z" level=info msg="Connected to proxy" url="wss://172.29.5.50:6443/v1-k3s/connect"
Nov 04 16:01:53 Neeraj k3s[5758]: time="2025-11-04T16:01:53Z" level=info msg="Remotedialer connected to proxy" url="wss://172.29.5.50:6443/v1-k3s/connect"
Nov 04 16:01:57 Neeraj k3s[5758]: I1104 16:01:57.197286 5758 kuberuntime_manager.go:1746 "Updating runtime config through cri with podcidr" CIDR="10.42
Nov 04 16:01:57 Neeraj k3s[5758]: I1104 16:01:57.288832 5758 kubelet_network.go:61 "Updating Pod CIDR" originalPodCIDR="" newPodCIDR="10.42.0.0/24"
lines 1-29/29 (END)
```

```
klu@Neeraj:/mnt/c/Users/sakal$ sudo systemctl status k3s
[INFO] env: Creating environment file /etc/systemd/system/k3s.service.env
[INFO] systemd: Creating service file /etc/systemd/system/k3s.service
[INFO] systemd: Enabling k3s unit
Created symlink /etc/systemd/system/multi-user.target.wants/k3s.service → /etc/systemd/system/k3s.service.
[INFO] Host iptables-save/iptables-restore tools not found
[INFO] Host ip6tables-save/ip6tables-restore tools not found
[INFO] systemd: Starting k3s
klu@Neeraj:/mnt/c/Users/sakal$ sudo systemctl status k3s
● k3s.service - Lightweight Kubernetes
   Loaded: loaded (/etc/systemd/system/k3s.service; enabled; preset: enabled)
   Active: active (running) since Tue 2025-11-04 16:01:46 UTC; 24s ago
     Docs: https://k3s.io
   Process: 5754 ExecStartPre=/sbin/modprobe br_netfilter (code=exited, status=0/SUCCESS)
   Process: 5755 ExecStartPre=/sbin/modprobe overlay (code=exited, status=0/SUCCESS)
   Main PID: 5758 (k3s-server)
      Tasks: 157
     Memory: 650.0M (peak: 661.4M)
        CPU: 23.101s
    CGroup: /system.slice/k3s.service
            └─5758 /usr/local/bin/k3s server"
               └─5823 "containerd "
                  └─6667 /var/lib/rancher/k3s/data/86a616cda0fb57fa13670ac5a16f1699f4b2be4772e842d97984c69698ffdc2/bin/containerd-shim-runc-v2 -namespace k8s.i
                     └─6697 /var/lib/rancher/k3s/data/86a616cda0fb57fa13670ac5a16f1699f4b2be4772e842d97984c69698ffdc2/bin/containerd-shim-runc-v2 -namespace k8s.i
                     └─6728 /var/lib/rancher/k3s/data/86a616cda0fb57fa13670ac5a16f1699f4b2be4772e842d97984c69698ffdc2/bin/containerd-shim-runc-v2 -namespace k8s.i
                     └─6753 /var/lib/rancher/k3s/data/86a616cda0fb57fa13670ac5a16f1699f4b2be4772e842d97984c69698ffdc2/bin/containerd-shim-runc-v2 -namespace k8s.i
                     └─6769 /var/lib/rancher/k3s/data/86a616cda0fb57fa13670ac5a16f1699f4b2be4772e842d97984c69698ffdc2/bin/containerd-shim-runc-v2 -namespace k8s.i

Nov 04 16:01:53 Neeraj k3s[5758]: time="2025-11-04T16:01:53Z" level=info msg="Started tunnel to 172.29.5.50:6443"
Nov 04 16:01:53 Neeraj k3s[5758]: time="2025-11-04T16:01:53Z" level=info msg="Stopped tunnel to 127.0.0.1:6443"
Nov 04 16:01:53 Neeraj k3s[5758]: time="2025-11-04T16:01:53Z" level=info msg="Connecting to proxy" url="wss://172.29.5.50:6443/v1-k3s/connect"
Nov 04 16:01:53 Neeraj k3s[5758]: time="2025-11-04T16:01:53Z" level=info msg="Proxy done" err="context canceled" url="wss://172.29.5.50:6443/v1-k3s/connect"
Nov 04 16:01:53 Neeraj k3s[5758]: time="2025-11-04T16:01:53Z" level=info msg="error in remotodialer server [400]: websocket: close 1006 (abnormal closure):"
Nov 04 16:01:53 Neeraj k3s[5758]: time="2025-11-04T16:01:53Z" level=info msg="Handling backend connection request [neeraj]"
Nov 04 16:01:53 Neeraj k3s[5758]: time="2025-11-04T16:01:53Z" level=info msg="Connected to proxy" url="wss://172.29.5.50:6443/v1-k3s/connect"
Nov 04 16:01:53 Neeraj k3s[5758]: time="2025-11-04T16:01:53Z" level=info msg="Remotodialer connected to proxy" url="wss://172.29.5.50:6443/v1-k3s/connect"
Nov 04 16:01:57 Neeraj k3s[5758]: I1104 16:01:57.197286 5758 kuberuntime_manager.go:1746] "Updating runtime config through cri with podcidr" CIDR="10.42.
Nov 04 16:01:57 Neeraj k3s[5758]: I1104 16:01:57.288832 5758 kubelet_network.go:61] "Updating Pod CIDR" originalPodCIDR="" newPodCIDR="10.42.8.0/24"

klu@Neeraj:/mnt/c/Users/sakal$ ls /etc/rancher/k3s/k3s.yaml
/etc/rancher/k3s/k3s.yaml
klu@Neeraj:/mnt/c/Users/sakal$
```

```
klu@Neeraj:/mnt/c/Users/sakal$ sudo chmod 644 /etc/rancher/k3s/k3s.yaml
mkdir -p ~/.kube
sudo cp /etc/rancher/k3s/k3s.yaml ~/.kube/config
sudo chown $(id -u):$(id -g) ~/.kube/config
klu@Neeraj:/mnt/c/Users/sakal$
```

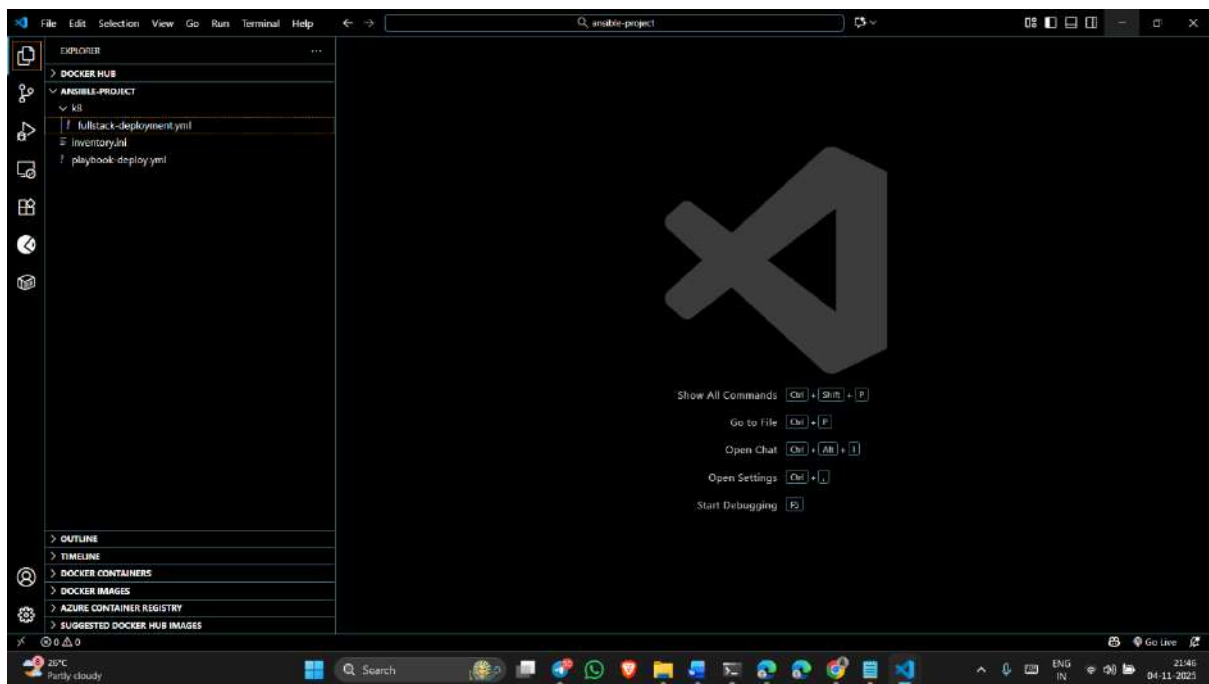


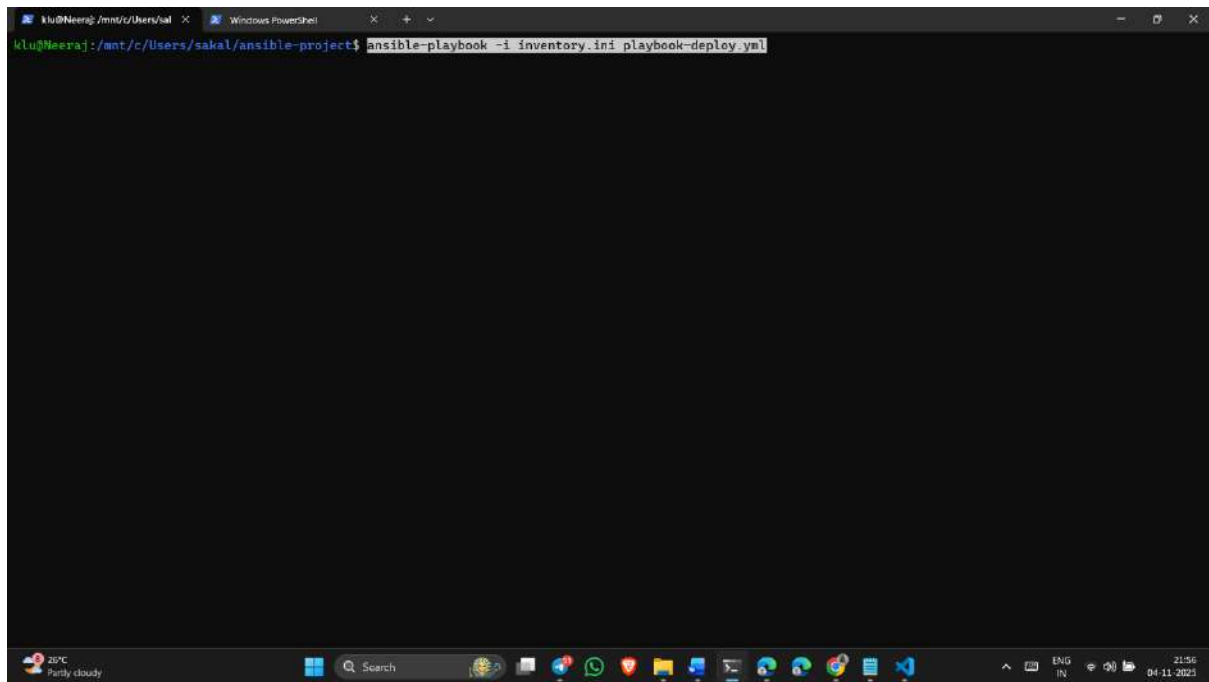
```
klu@Neeraj:/mnt/c/Users/sakal$ sudo chmod 644 /etc/rancher/k3s/k3s.yaml
mkdir -p ~/.kube
sudo cp /etc/rancher/k3s/k3s.yaml ~/.kube/config
sudo chown $(id -u):$(id -g) ~/.kube/config
klu@Neeraj:/mnt/c/Users/sakal$ kubectl get nodes
NAME          STATUS    ROLES          AGE   VERSION
neeraj        Ready     control-plane,master   2m39s   v1.33.5+k3s1
klu@Neeraj:/mnt/c/Users/sakal$
```

```
klu@Neeraj:/mnt/c/Users/sakal$ mkdir ansible-project
klu@Neeraj:/mnt/c/Users/sakal$ cd ansible-project
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$
```

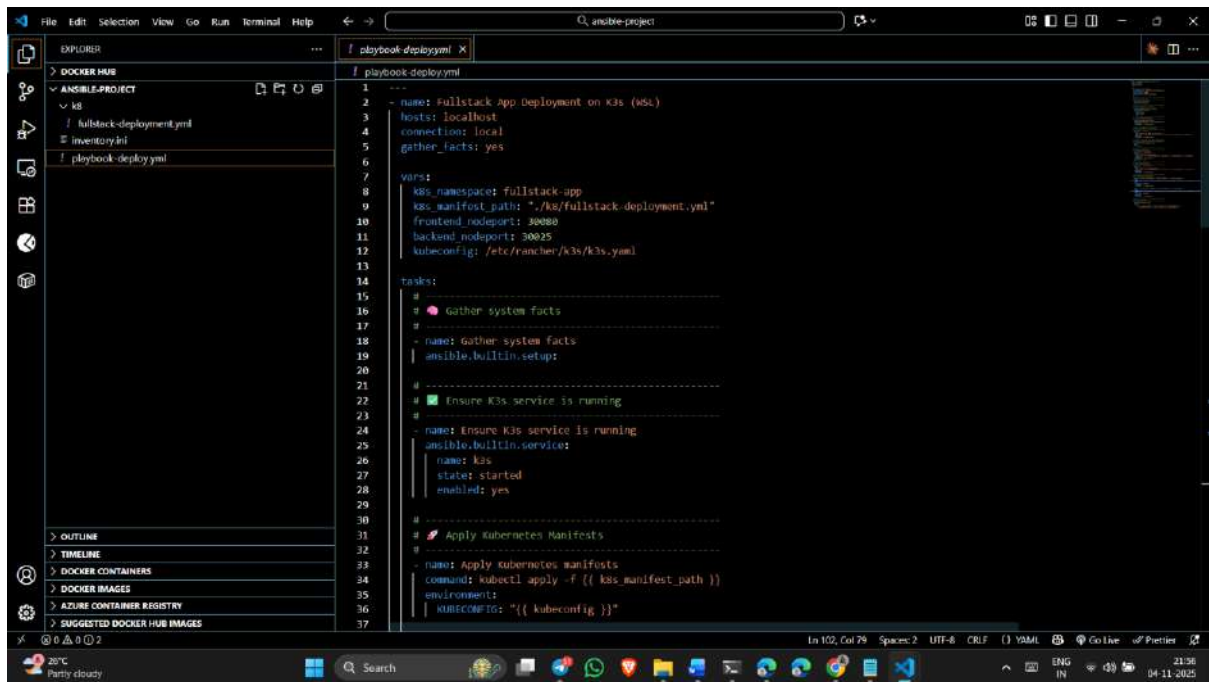


```
klu@Neeraj:/mnt/c/Users/sakal$ mkdir ansible-project
klu@Neeraj:/mnt/c/Users/sakal$ cd ansible-project
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$ code .
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$
```



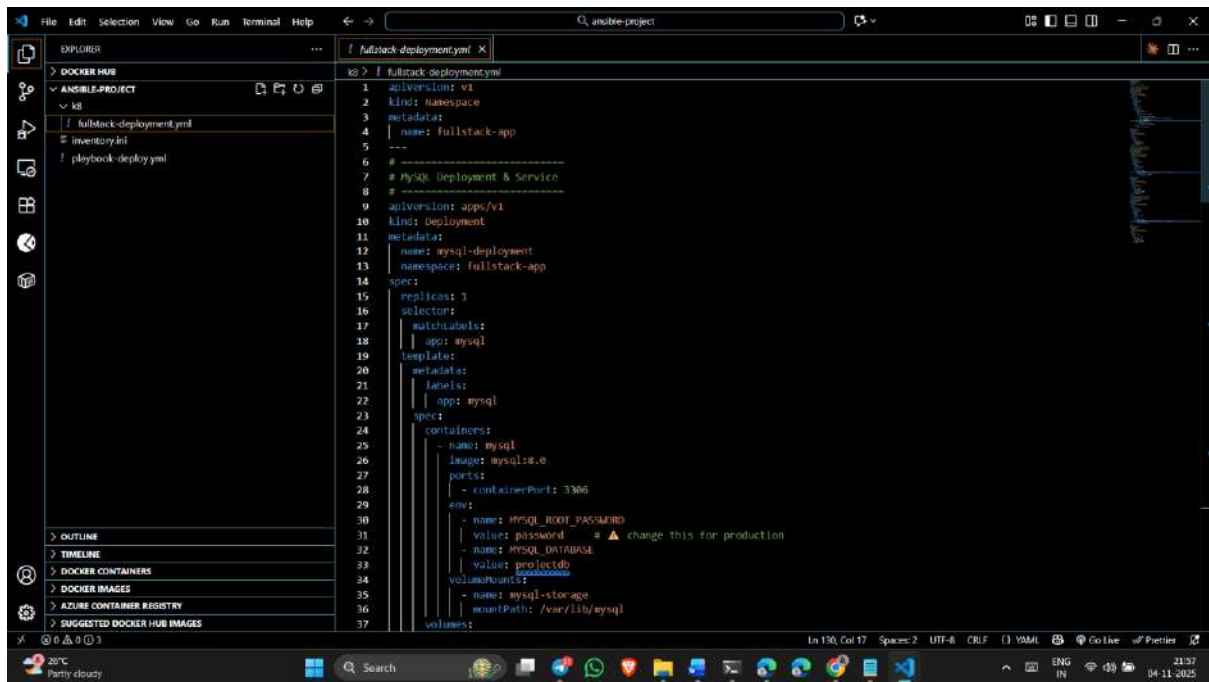
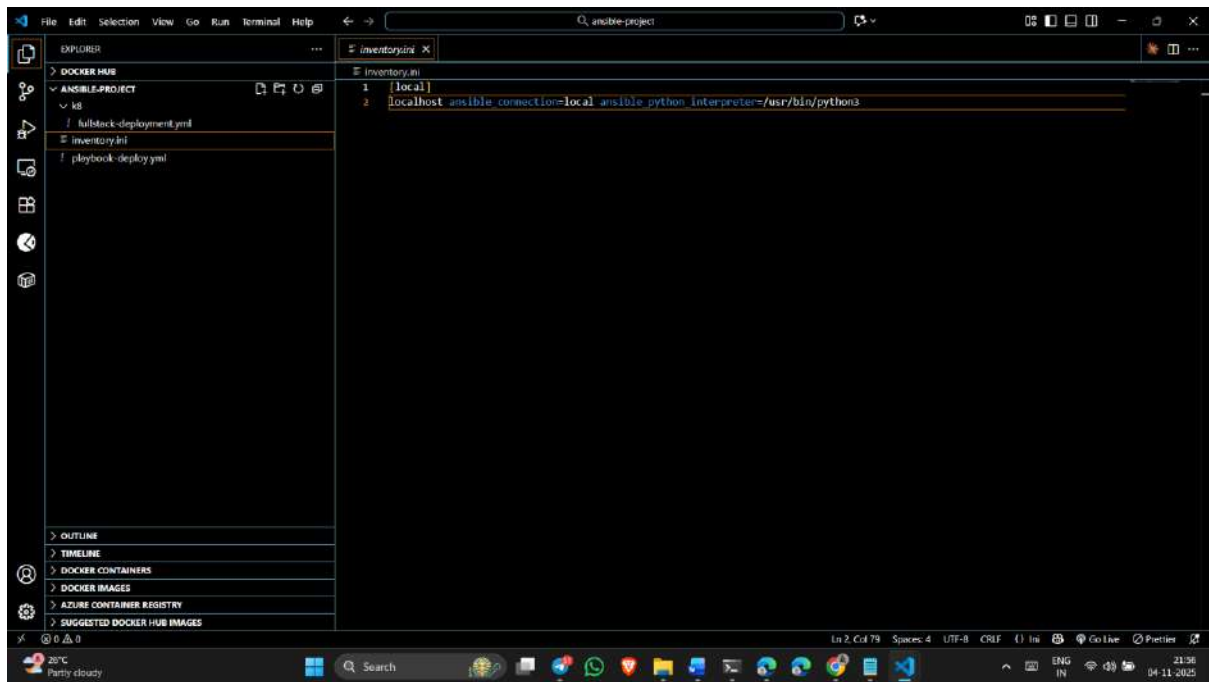


A terminal window titled "Windows PowerShell" is open. The prompt is `klu@Neeraj:/mnt/c/Users/sakal/ansible-project$`. The command entered is `ansible-playbook -i inventory.ini playbook-deploy.yml`. The terminal is currently empty, showing only the command prompt and the command entered.



A VS Code editor window titled "ansible-project" is open. The Explorer sidebar on the left shows the project structure: `ANSIBLE-PROJECT` containing `fullstack-deployment.yml`, `inventory.ini`, and `playbook-deploy.yml`. The main editor area displays the content of `playbook-deploy.yml`, which is an Ansible playbook for deploying a fullstack application on Kubernetes (K8s).

```
1 ---
2 - name: Fullstack App Deployment on K8s (K8s)
3   hosts: localhost
4   connection: local
5   gather_facts: yes
6
7   vars:
8     k8s_namespace: fullstack-app
9     k8s_manifest_path: "../k8s/fullstack-deployment.yml"
10    frontend_nodeport: 30080
11    backend_nodeport: 30025
12    kubeconfig: /etc/rancher/k3s/k3s.yaml
13
14   tasks:
15     # Gather system facts
16     - name: Gather system facts
17       ansible.builtin.setup:
18
19     # Ensure K3s service is running
20     - name: Ensure K3s service is running
21       ansible.builtin.service:
22         name: k3s
23         state: started
24         enabled: yes
25
26     # Apply Kubernetes Manifests
27     - name: Apply Kubernetes manifests
28       command: kubectl apply -f {{ k8s_manifest_path }}
29       environment:
30         KUBECONFIG: "{{ kubeconfig }}"
```



```
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$ ansible-playbook -i inventory.ini playbook-deploy.yml

PLAY [Fullstack App Deployment on K3s (WSL)] *****

TASK [Gathering Facts] *****
ok: [localhost]

TASK [Gather system facts] *****
ok: [localhost]

TASK [Ensure K3s service is running] *****
ok: [localhost]

TASK [Apply Kubernetes manifests] *****
changed: [localhost]

TASK [Wait for MySQL Pod] *****
changed: [localhost]

TASK [Pause before backend starts] *****
Pausing for 20 seconds
(ctrl+C then 'C' = continue early, ctrl+C then 'A' = abort)
ok: [localhost]

TASK [Wait for backend pods] *****
changed: [localhost]

TASK [Wait for frontend pods] *****
changed: [localhost]

TASK [Forward backend NodePort 30025 -> 2000 (background)] *****
changed: [localhost]

TASK [Forward frontend NodePort 30080 -> 80 (background)] *****
changed: [localhost]

TASK [Show accessible URLs] *****
ok: [localhost] => {
  "msg": [
    "Frontend available at: http://localhost:30080",
  ]
}
```

```
[sudo] password for klu:
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$ mkdir -p ~/.kube
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$ sudo cp /etc/rancher/k3s/k3s.yaml ~/.kube/config
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$ sudo chown $(id -u):$(id -g) ~/.kube/config
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$ kubectl get nodes
NAME                STATUS   ROLES    AGE   VERSION
neeraj               Ready    control-plane,master   53m   v1.33.5+k3s1
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$ kubectl get all -n fullstack-app
NAME                                READY   STATUS    RESTARTS   AGE
pod/backend-deployment-6dc5d64f99-2lgzr   1/1     Running   0          25m
pod/backend-deployment-6dc5d64f99-4u48k   1/1     Running   0          25m
pod/frontend-deployment-796848dff5-9jpx8   1/1     Running   0          25m
pod/frontend-deployment-796848dff5-kljr7   1/1     Running   0          25m
pod/mysql-deployment-64fcc6bd5-h8ngh       1/1     Running   0          25m

NAME                                TYPE          CLUSTER-IP      EXTERNAL-IP    PORT(S)          AGE
service/backend-service             NodePort      10.43.176.18     <none>          2000:30025/TCP   25m
service/frontend-service            NodePort      10.43.125.170    <none>          80:30080/TCP     25m
service/mysql-service                ClusterIP      10.43.52.164     <none>          3306/TCP         25m

NAME                                READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/backend-deployment   2/2     2             2           25m
deployment.apps/frontend-deployment  2/2     2             2           25m
deployment.apps/mysql-deployment     1/1     1             1           25m

NAME                                DESIRED   CURRENT   READY   AGE
replicaset.apps/backend-deployment-6dc5d64f99   2         2         2       25m
replicaset.apps/frontend-deployment-796848dff5  2         2         2       25m
replicaset.apps/mysql-deployment-64fcc6bd5     1         1         1       25m
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$
```

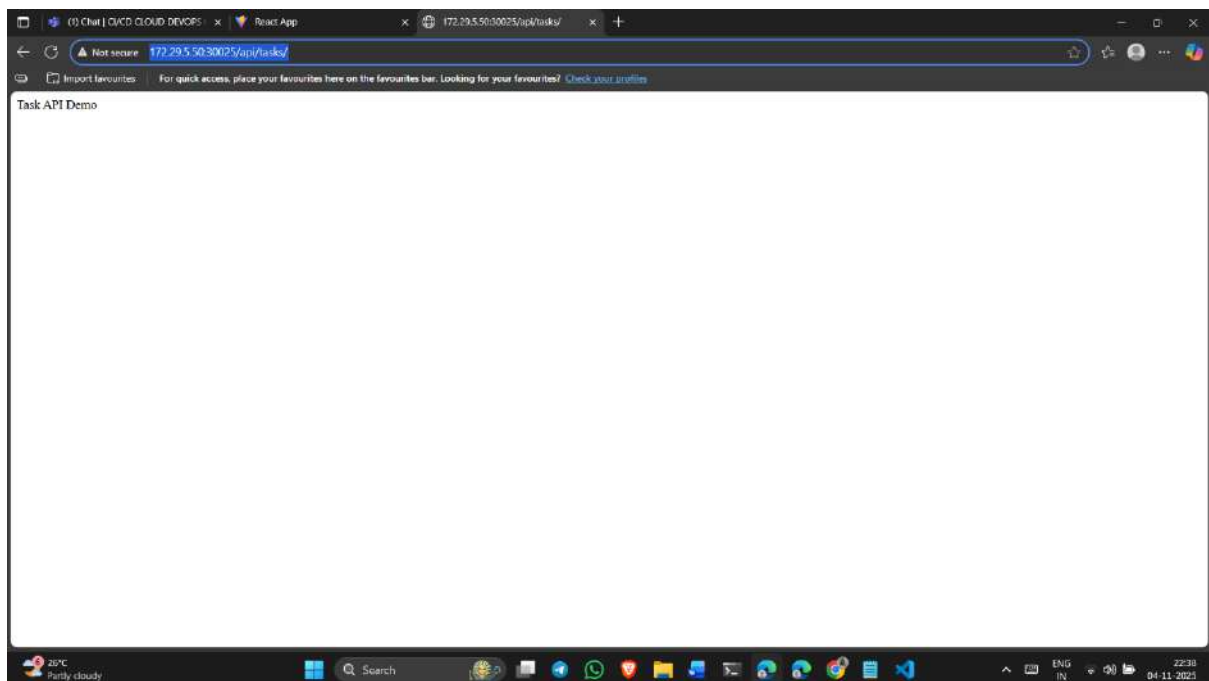
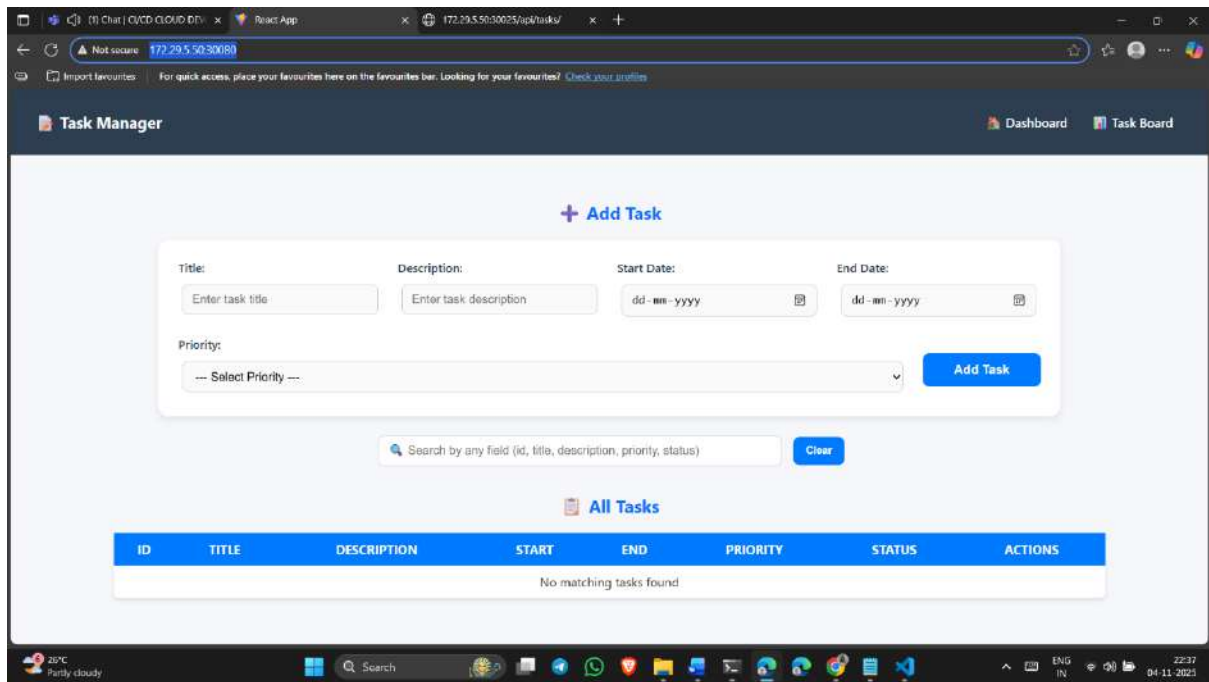
```
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$ kubectl get pods -n fullstack-app
NAME                                READY   STATUS    RESTARTS   AGE
backend-deployment-6dc5d6f99-2lqzr  1/1     Running   0           27m
backend-deployment-6dc5d6f99-4u48k  1/1     Running   0           27m
frontend-deployment-7968848ff5-9jpx8 1/1     Running   0           27m
frontend-deployment-7968848ff5-kljz7 1/1     Running   0           27m
mysql-deployment-64fcc6bd5-h8nqh    1/1     Running   0           27m
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$
```

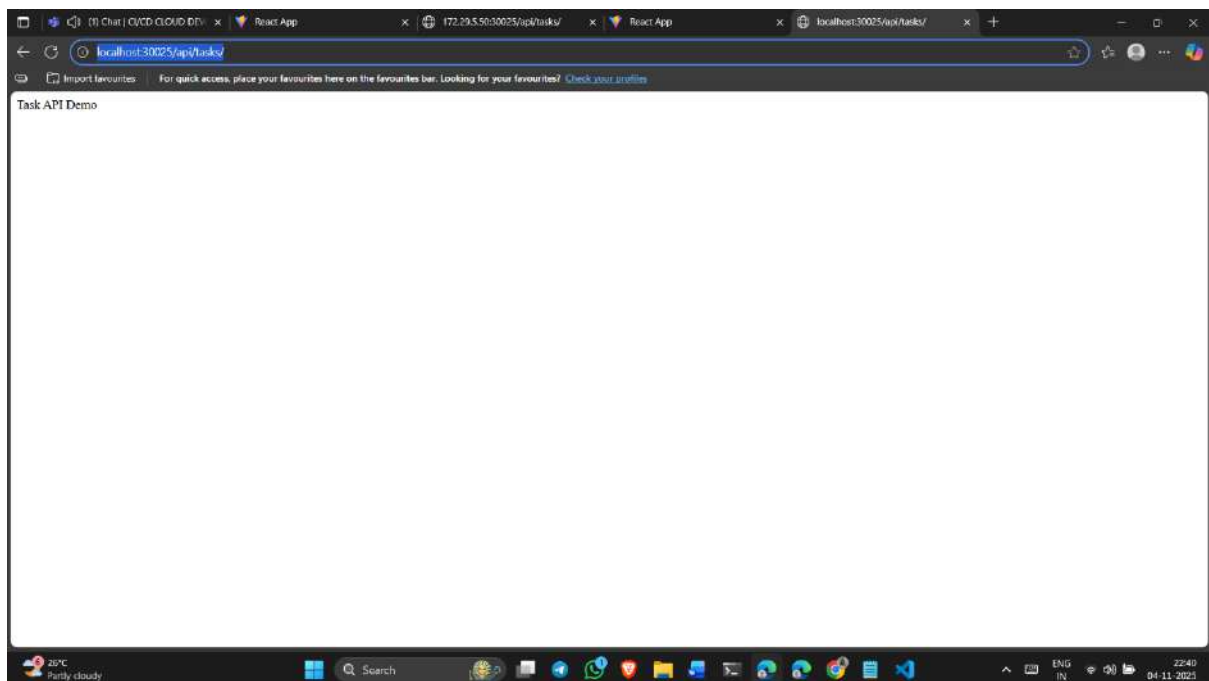
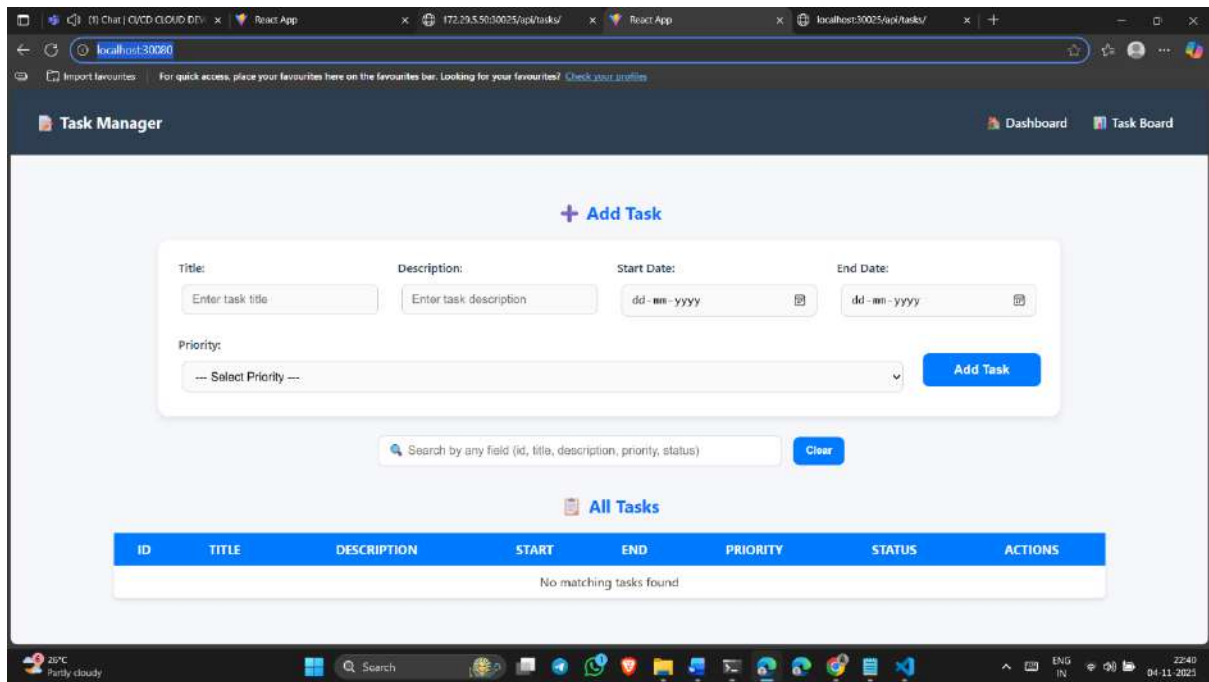
```
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$ kubectl logs -l app=backend -n fullstack-app -f
status varchar(255) not null,
title varchar(255) not null,
primary key (id)
) engine=InnoDB
2025-11-04T16:43:01.817Z INFO 1 --- [springbootbackend] [main] j.LocalContainerEntityManagerFactoryBean : Initialized JPA EntityManagerFactory f
or persistence unit 'default'
2025-11-04T16:43:02.213Z WARN 1 --- [springbootbackend] [main] JpaBaseConfiguration$JpaWebConfiguration : spring.jpa.open-in-view is enabled by
default. Therefore, database queries may be performed during view rendering. Explicitly configure spring.jpa.open-in-view to disable this warning
2025-11-04T16:43:02.307Z INFO 1 --- [springbootbackend] [main] o.s.v.b.OptionalValidatorFactoryBean : Failed to set up a Bean Validation pro
vider: jakarta.validation.NoProviderFoundException: Unable to create a Configuration, because no Jakarta Bean Validation provider could be found. Add a prov
ider like Hibernate Validator (RI) to your classpath.
2025-11-04T16:43:03.190Z INFO 1 --- [springbootbackend] [main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port 2808 (http) wit
h context path '/'
2025-11-04T16:43:03.217Z INFO 1 --- [springbootbackend] [main] c.klef.dev.SpringbootbackendApplication : Started SpringbootbackendApplication i
n 7.145 seconds (process running for 7.929)
Project Backend is Running Successfully ....
at com.zaxxer.hikari.pool.HikariProxyStatement.execute(HikariProxyStatement.java) ~[HikariCP-6.3.0.jar:na]
at org.hibernate.tool.schema.internal.exec.GenerationTargetToDatabase.accept(GenerationTargetToDatabase.java:88) ~[hibernate-core-6.6.18.Final.jar:/
6.6.18.Final]
... 42 common frames omitted
2025-11-04T16:43:02.196Z INFO 1 --- [springbootbackend] [main] j.LocalContainerEntityManagerFactoryBean : Initialized JPA EntityManagerFactory f
or persistence unit 'default'
2025-11-04T16:43:02.673Z WARN 1 --- [springbootbackend] [main] JpaBaseConfiguration$JpaWebConfiguration : spring.jpa.open-in-view is enabled by
default. Therefore, database queries may be performed during view rendering. Explicitly configure spring.jpa.open-in-view to disable this warning
2025-11-04T16:43:02.771Z INFO 1 --- [springbootbackend] [main] o.s.v.b.OptionalValidatorFactoryBean : Failed to set up a Bean Validation pro
vider: jakarta.validation.NoProviderFoundException: Unable to create a Configuration, because no Jakarta Bean Validation provider could be found. Add a prov
ider like Hibernate Validator (RI) to your classpath.
2025-11-04T16:43:03.525Z INFO 1 --- [springbootbackend] [main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port 2808 (http) wit
h context path '/'
2025-11-04T16:43:03.547Z INFO 1 --- [springbootbackend] [main] c.klef.dev.SpringbootbackendApplication : Started SpringbootbackendApplication i
n 7.455 seconds (process running for 8.254)
Project Backend is Running Successfully ....
```

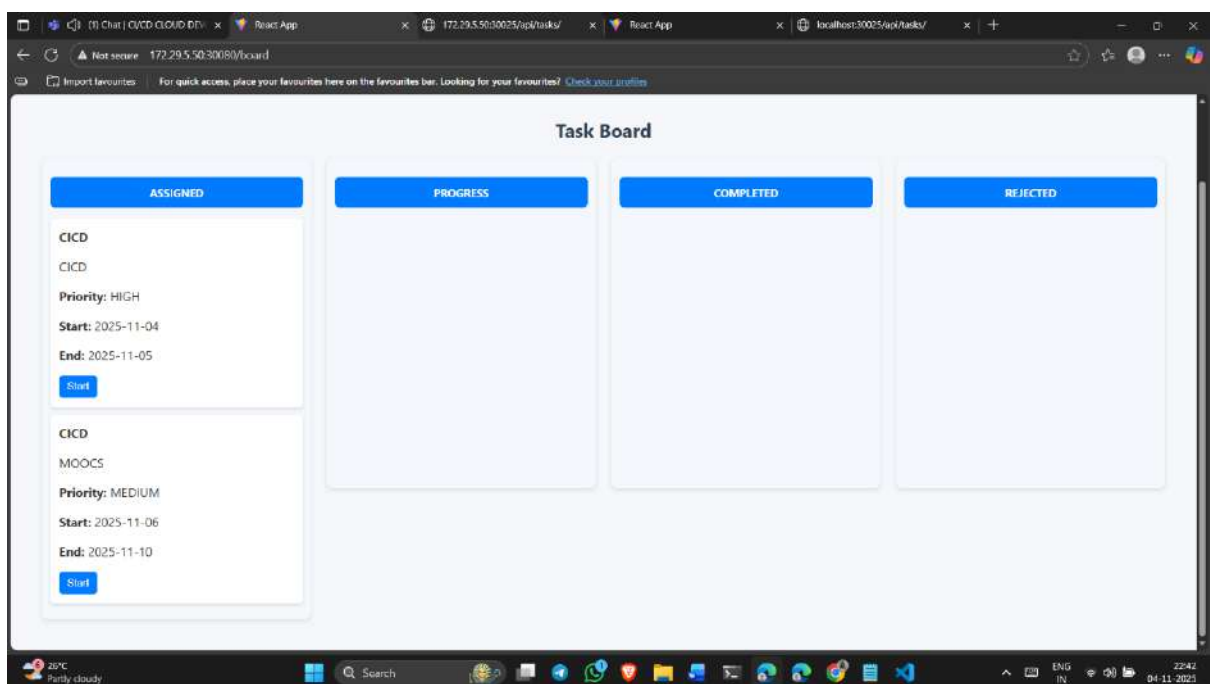
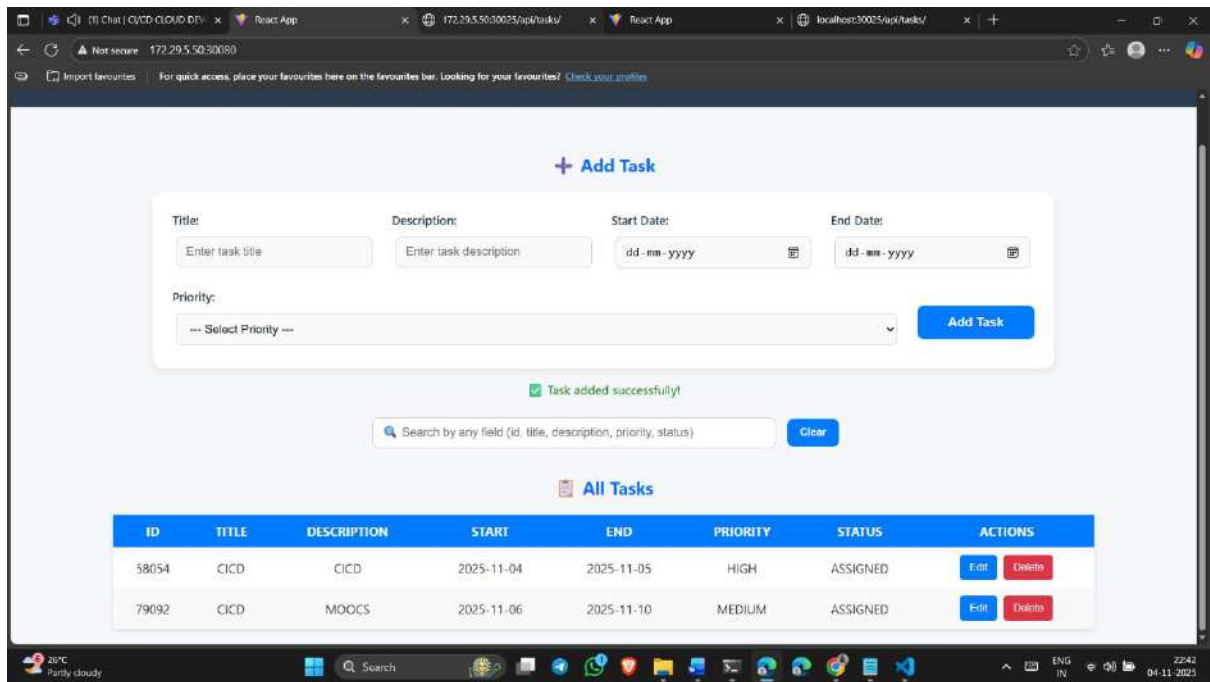


```
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$ kubectl logs -l app=backend -n fullstack-app -f
status varchar(255) not null,
title varchar(255) not null,
primary key (id)
) engine=InnoDB
2025-11-04T16:43:01.817Z INFO 1 --- [springbootbackend] [main] j.LocalContainerEntityManagerFactoryBean : Initialized JPA EntityManagerFactory f
or persistence unit 'default'
2025-11-04T16:43:02.213Z WARN 1 --- [springbootbackend] [main] JpaBaseConfiguration$JpaWebConfiguration : spring.jpa.open-in-view is enabled by
default. Therefore, database queries may be performed during view rendering. Explicitly configure spring.jpa.open-in-view to disable this warning
2025-11-04T16:43:02.307Z INFO 1 --- [springbootbackend] [main] o.s.v.b.OptionalValidatorFactoryBean : Failed to set up a Bean Validation pro
vider: jakarta.validation.NoProviderFoundException: Unable to create a Configuration, because no Jakarta Bean Validation provider could be found. Add a prov
ider like Hibernate Validator (RI) to your classpath.
2025-11-04T16:43:03.190Z INFO 1 --- [springbootbackend] [main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port 2808 (http) wit
h context path '/'
2025-11-04T16:43:03.217Z INFO 1 --- [springbootbackend] [main] c.klef.dev.SpringbootbackendApplication : Started SpringbootbackendApplication i
n 7.145 seconds (process running for 7.929)
Project Backend is Running Successfully ....
at com.zaxxer.hikari.pool.HikariProxyStatement.execute(HikariProxyStatement.java) ~[HikariCP-6.3.0.jar!/:na]
at org.hibernate.tool.schema.internal.exec.GenerationTargetToDatabase.accept(GenerationTargetToDatabase.java:88) ~[hibernate-core-6.6.18.Final.jar!/:
6.6.18.Final]
... 42 common frames omitted
2025-11-04T16:43:02.186Z INFO 1 --- [springbootbackend] [main] j.LocalContainerEntityManagerFactoryBean : Initialized JPA EntityManagerFactory f
or persistence unit 'default'
2025-11-04T16:43:02.673Z WARN 1 --- [springbootbackend] [main] JpaBaseConfiguration$JpaWebConfiguration : spring.jpa.open-in-view is enabled by
default. Therefore, database queries may be performed during view rendering. Explicitly configure spring.jpa.open-in-view to disable this warning
2025-11-04T16:43:02.771Z INFO 1 --- [springbootbackend] [main] o.s.v.b.OptionalValidatorFactoryBean : Failed to set up a Bean Validation pro
vider: jakarta.validation.NoProviderFoundException: Unable to create a Configuration, because no Jakarta Bean Validation provider could be found. Add a prov
ider like Hibernate Validator (RI) to your classpath.
2025-11-04T16:43:03.525Z INFO 1 --- [springbootbackend] [main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port 2808 (http) wit
h context path '/'
2025-11-04T16:43:03.547Z INFO 1 --- [springbootbackend] [main] c.klef.dev.SpringbootbackendApplication : Started SpringbootbackendApplication i
n 7.455 seconds (process running for 8.254)
Project Backend is Running Successfully ....
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$ ps aux | grep kubectl
klu 12259 0.0 0.5 5473604 45108 ? Ssl 16:42 0:00 kubectl port-forward svc/backend-service 30025:2808 -n fullstack-app
klu 12306 0.0 0.5 5473860 44996 ? Ssl 16:42 0:00 kubectl port-forward svc/frontend-service 30080:80 -n fullstack-app
klu 13207 0.0 0.0 4892 2048 pts/0 S+ 17:03 0:00 grep --color=auto kubectl
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$
```

```
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$ ip addr show eth0 | grep inet
inet 172.29.5.50/20 brd 172.29.15.255 scope global eth0
inet6 fe80::215:5dff:feec:f9ce/64 scope link
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$
```





```

[ (B) Chat | Q/CD.CLOUD.DEV | x React App | x 172.29.5.50:3002/api/tasks/all | x React App | x localhost:3002/api/tasks/ | x +
Not secure 172.29.5.50:3002/api/tasks/all
import favourites For quick access, place your favourites here on the favourites bar. Looking for your favourites? Check your profiles
Pretty-print
[
  {
    "id": 58054,
    "title": "CICD",
    "description": "CICD",
    "startDate": "2025-11-04",
    "endDate": "2025-11-05",
    "priority": "HIGH",
    "status": "ASSIGNED"
  },
  {
    "id": 70002,
    "title": "CICD",
    "description": "MOCKS",
    "startDate": "2025-11-06",
    "endDate": "2025-11-10",
    "priority": "MEDIUM",
    "status": "ASSIGNED"
  }
]
Gold 1.50% Search ENG IN 22:44 04-11-2025
```

Swagger UI interface for the Task Management API (v1.0.0) running on localhost:3002. The API is a Spring Boot REST API for managing tasks, developed by the Developer Team in Vietnam, based on Java 11 and Apache 2.0.

The API endpoints are listed under the **task-controller** namespace:

- PUT /api/tasks/updatestatus/{id}
- PUT /api/tasks/update/{id}
- POST /api/tasks/add
- GET /api/tasks/get/{id}
- GET /api/tasks/all
- GET /api/tasks/
- DELETE /api/tasks/delete/{id}

Below the Swagger UI, a terminal window shows the execution of commands to check network configuration and delete a namespace:

```
klu@Neeraj: /mnt/c/Users/sakal/ansible-project$ ip addr show eth0 | grep inet
Device "eth0" does not exist.
klu@Neeraj: /mnt/c/Users/sakal/ansible-project$ ip addr show eth0 | grep inet
    inet 172.29.5.58/20 brd 172.29.15.255 scope global eth0
    inet6 fe80::215:5dff:feec:f9ce/64 scope link
klu@Neeraj: /mnt/c/Users/sakal/ansible-project$ kubectl delete namespace fullstack-app
namespace "fullstack-app" deleted
```

```
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$ ip addr show eth0 | grep inet
Device "eth0" does not exist.
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$ ip addr show eth0 | grep inet
    inet 172.29.5.50/20 brd 172.29.15.255 scope global eth0
        inet6 fe80::215:5dff:feec:f9ce/64 scope link
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$ kubectl delete namespace fullstack-app
namespace "fullstack-app" deleted
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$ ps aux | grep kubectl
klu      12259  0.0  0.5 5473604 46104 ?        Sl   16:42   0:01 kubectl port-forward svc/backend-service 30025:2000 -n fullstack-app
klu      12306  0.0  0.5 5473860 46020 ?        Sl   16:42   0:01 kubectl port-forward svc/frontend-service 30080:80 -n fullstack-app
klu      15680  0.0  0.8 4892 2048 pts/0      S+   17:23   0:00 grep --color=auto kubectl
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$ pgrep a- kubectl
pgrep: only one pattern can be provided.
Try 'pgrep --help' for more information.
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$ pgrep -a kubectl
12259 kubectl port-forward svc/backend-service 30025:2000 -n fullstack-app
12306 kubectl port-forward svc/frontend-service 30080:80 -n fullstack-app
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$ sudo kill -9 12259
[sudo] password for klu:
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$ sudo kill -9 12306
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$ sudo kubectl stop k3s
error: unknown command "stop" for "kubectl"

Did you mean this?
top
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$ pgrep -a kubectl
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$ ps aux | grep kubectl
klu      15165  0.0  0.8 4892 2048 pts/0      S+   17:25   0:00 grep --color=auto kubectl
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$ sudo kill -9 15165
kill: (15165): No such process
klu@Neeraj:/mnt/c/Users/sakal/ansible-project$
```

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\sakal> wsl -l -v
  NAME      STATE      VERSION
  -
  Ubuntu    Stopped    2
  docker-desktop Stopped    2
PS C:\Users\sakal>
```

wsl --install

wsl --update

wsl --list --online

wsl -d Ubuntu

Update and upgrade:

```
sudo apt update && sudo apt upgrade -y
```

python,pip install:

```
sudo apt install -y python3 python3-pip python3-venv
```

```
python3 --version
```

```
pip3 --version
```

basic dependencies:


```
sudo apt install -y software-properties-common git curl apt-transport-https ca-certificates gnupg lsb-release
```

 Install Ansible

```
sudo add-apt-repository --yes --update ppa:ansible/ansible
```

```
sudo apt install -y ansible
```

```
ansible --version
```

 Install kubectl (official stable v1.30 repo)

```
sudo mkdir -p /etc/apt/keyrings
```

```
curl -fsSL https://pkgs.k8s.io/core:/stable:/v1.30/deb/Release.key  
|\
```

```
sudo gpg --dearmor -o /etc/apt/keyrings/kubernetes-apt-keyring.gpg
```

```
echo "deb [signed-by=/etc/apt/keyrings/kubernetes-apt-keyring.gpg] \
```


```
https://pkgs.k8s.io/core:/stable:/v1.30/deb/ /" | \
```

```
sudo tee /etc/apt/sources.list.d/kubernetes.list
```

```
sudo apt update
```

```
sudo apt install -y kubectl
```

```
kubectl version --client
```

 If you already have K3s (Kubernetes lightweight cluster)

```
# Install K3s (lightweight Kubernetes)
```

```
curl -sfL https://get.k3s.io | sh -
```

```
# Check K3s service status
```

```
sudo systemctl status k3s
```

```
# Wait until it shows "active (running)"
```

```
# Verify if K3s config file exists now
```

```
ls /etc/rancher/k3s/k3s.yaml
```

```
# Set permissions and copy config to your user
```

```
sudo chmod 644 /etc/rancher/k3s/k3s.yaml
```

```
mkdir -p ~/.kube
```

```
sudo cp /etc/rancher/k3s/k3s.yaml ~/.kube/config
```

```
sudo chown $(id -u):$(id -g) ~/.kube/config
```

```
# Verify K3s node is registered
```

```
kubectl get nodes
```

```
create ansible directory:
```

```
mkdir ansible-project
```

```
cd ansible-project
```

```
create and update:
```

```
ansible-playbook -i inventory.ini playbook-deploy.yml
```

```
if not forwarding:
```

```
nohup kubectl port-forward svc/backend-service 30025:2000 -n  
fullstack-app >/tmp/backend.log 2>&1 &
```

```
nohup kubectl port-forward svc/frontend-service 30080:80 -n  
fullstack-app >/tmp/frontend.log 2>&1 &
```

