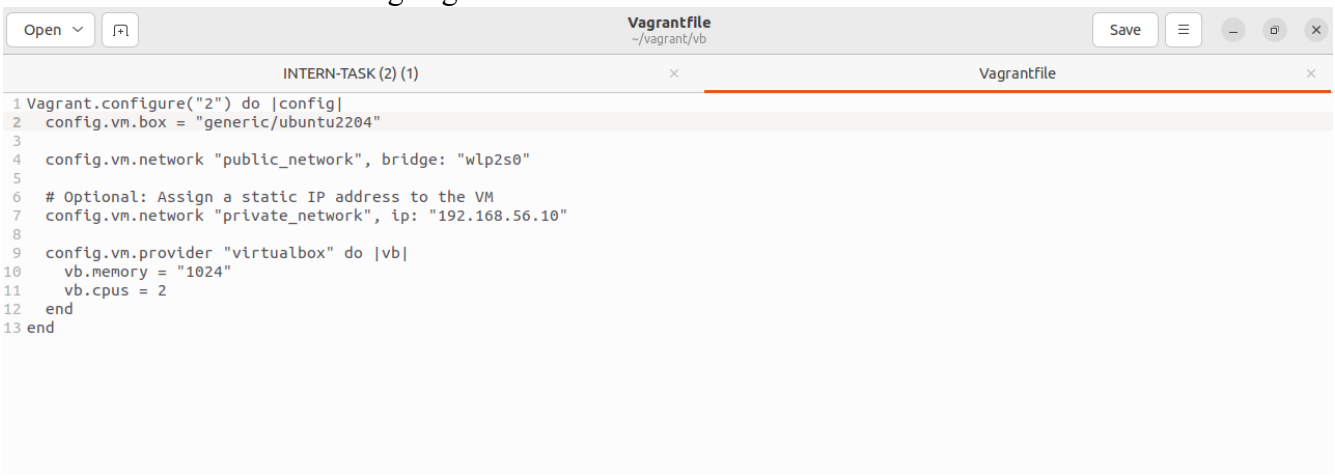
For task-2
1.

I. Oracle vm virtualbox is downloaded.

II. Installed ubuntu 22.04 using vagrantfile as below.



Have set static ip which : 192.168.56.10

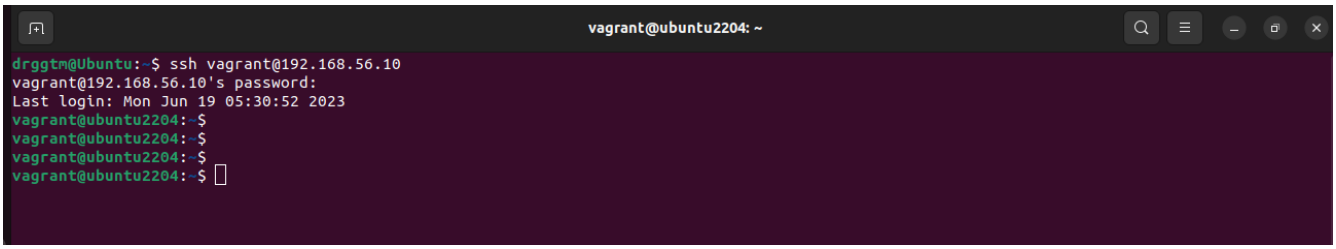
2.

I. Installing ansible on host machine

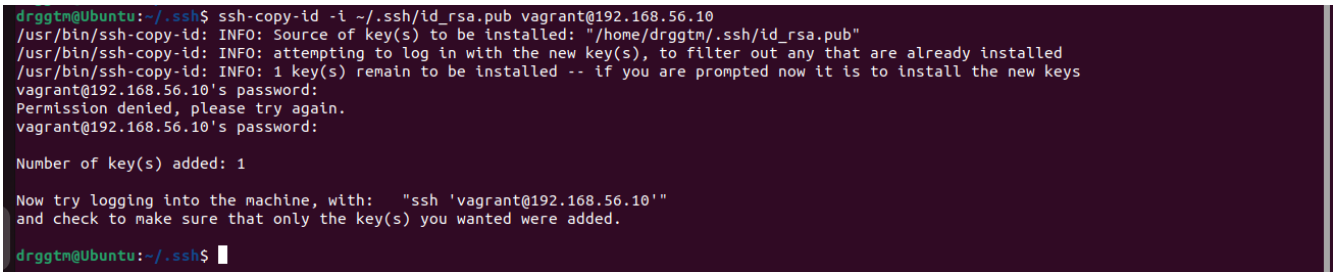
$ sudo apt-add-repository ppa:ansible/ansible
$ sudo apt update
$ sudo apt install ansible

3.

ssh to vm successful

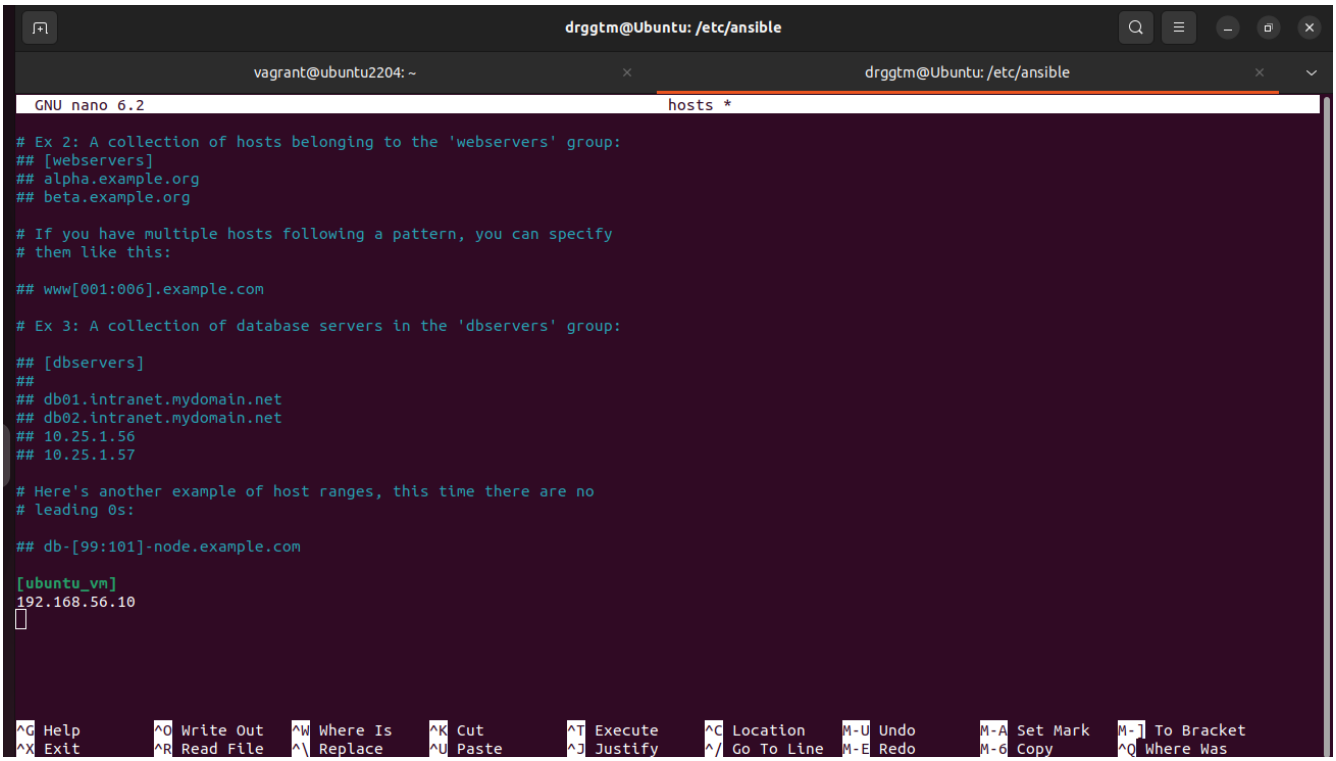


.

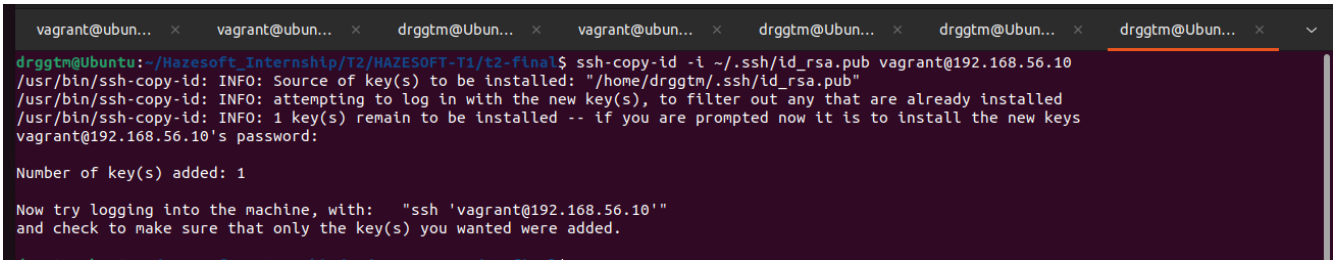


.

4. Added new host in /*etc*/ansible/hosts as (ubuntu_vm)

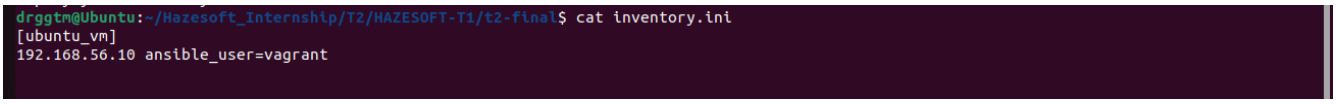


5. Added ssh keys using for access



.

6. Made a two file a. inventory.ini with



.

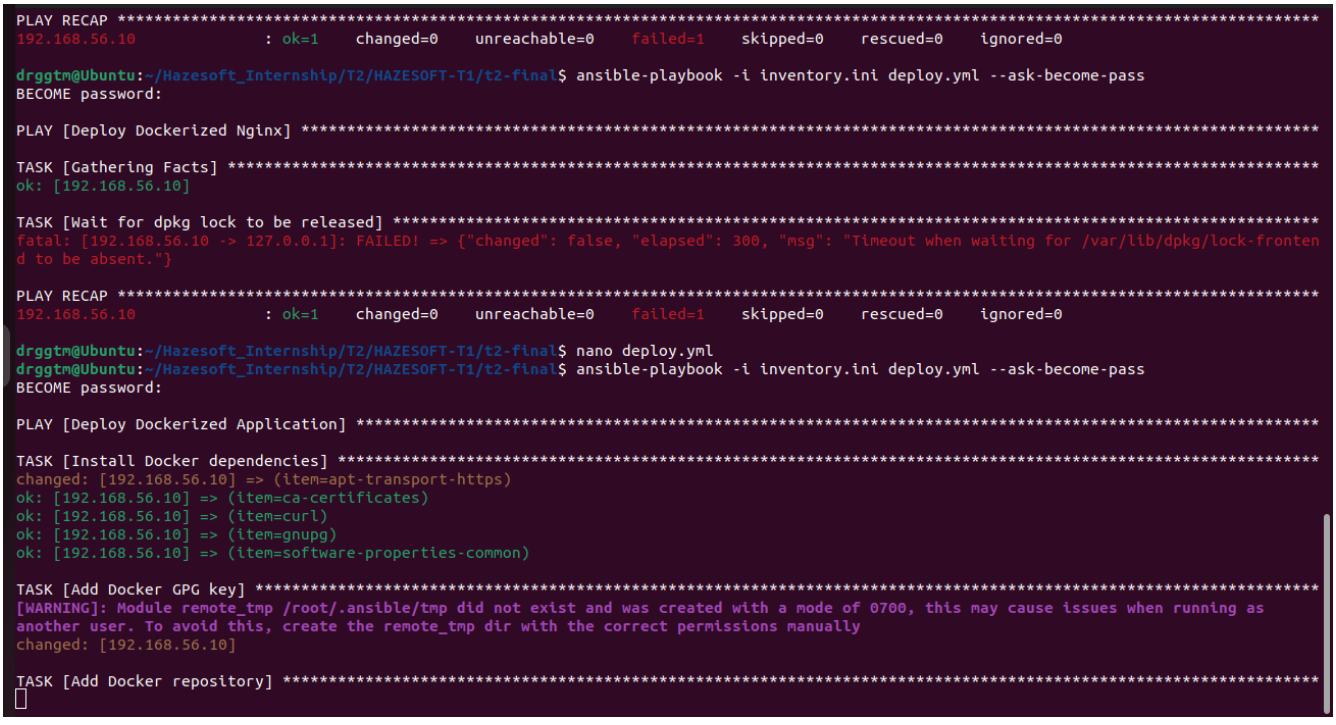
b. deploy.yml for ansible palybook.

```
cat deploy.yml
- name: Build and run Docker application
  hosts: ubuntu_vm
  gather_facts: false
  become: true

  tasks:
    - name: Install Docker dependencies
      apt:
        name:
          - apt-transport-https
          - ca-certificates
          - curl
          - gnupg
          - software-properties-common
        state: present

    - name: Add Docker GPG key
      apt_key:
        url: https://download.docker.com/linux/ubuntu/gpg
        state: present

    - name: Add Docker repository
      apt_repository:
        repo: deb [arch=amd64] https://download.docker.com/linux/ubuntu focal stable
        state: present

    - name: Update apt cache
      apt:
        update_cache: yes
        cache_valid_time: 3600

    - name: Install Docker
      apt:
        name: docker-ce
        state: present

    - name: Install Python and pip
      apt:
        name:
          - python3
          - python3-pip
        state: present

    - name: Upgrade pip
      pip:
```

```
    name: pip
    state: latest

- name: Install Docker Compose
  pip:
    name: docker-compose

- name: Clone repository
  git:
    repo: https://github.com/drggtm/HAZESOFT-T1.git
    dest: /opt/task
    version: main

- name: Build Docker image
  command: docker build -t task1 /opt/task
  args:
    chdir: /opt/task

- name: Run Docker container
  command: docker run -d -p 9000:80 --name task2 task1
```

TO RUN THESE: $ ansible-playbook -i inventory.ini deploy.yml --ask-become-pass

7. some errors encountered during intitial stages as..



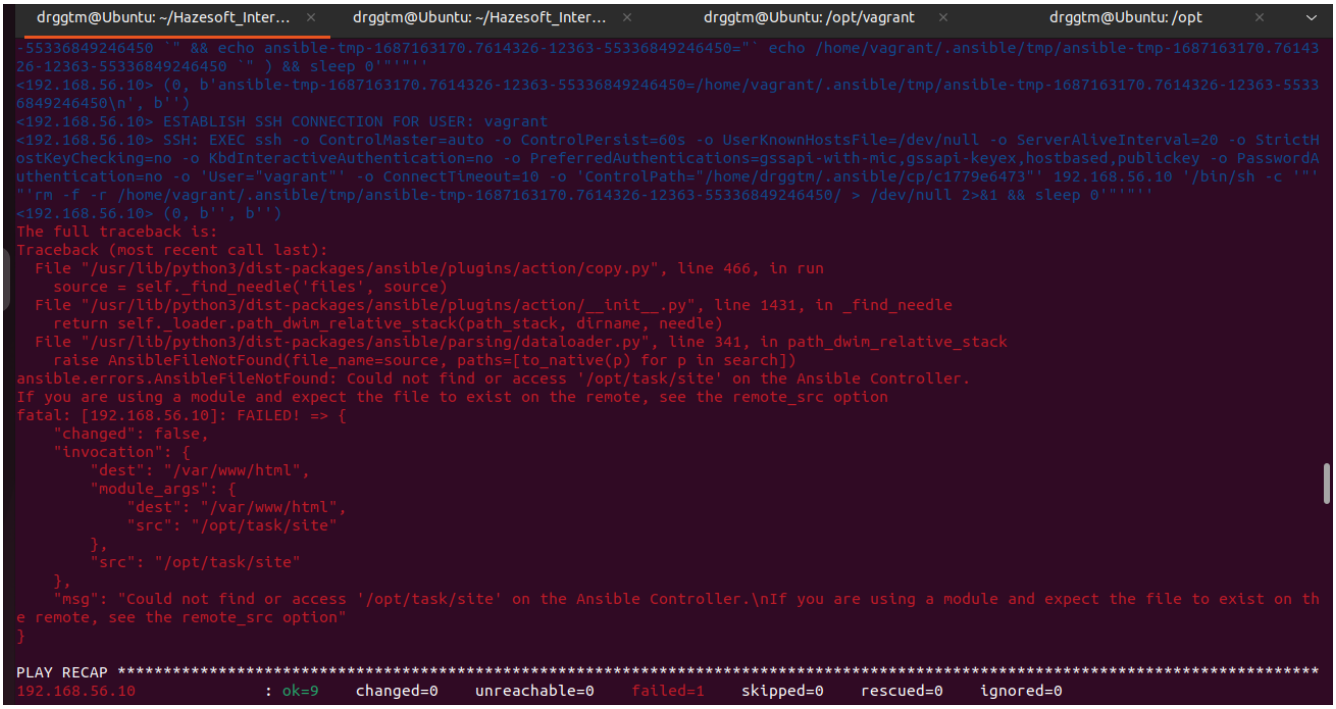
.

```
        chdir: /opt/task

drggtm@Ubuntu:~/Hazesoft_Internship/T2/HAZESOFT-T1/t2-final$ sudo nano deploy.yml
drggtm@Ubuntu:~/Hazesoft_Internship/T2/HAZESOFT-T1/t2-final$ ansible-playbook -i inventory.ini deploy.yml --ask-become-pass
BECOME password:

PLAY [Deploy Dockerized Application] ***********************************************************************************************************

TASK [Install Docker dependencies] *************************************************************************************************************
ok: [192.168.56.10] => (item=apt-transport-https)
ok: [192.168.56.10] => (item=ca-certificates)
ok: [192.168.56.10] => (item=curl)
ok: [192.168.56.10] => (item=gnupg)
ok: [192.168.56.10] => (item=software-properties-common)

TASK [Add Docker GPG key] **********************************************************************************************************************
ok: [192.168.56.10]

TASK [Add Docker repository] *******************************************************************************************************************
ok: [192.168.56.10]

TASK [Update apt cache] ************************************************************************************************************************
ok: [192.168.56.10]

TASK [Install Docker] **************************************************************************************************************************
changed: [192.168.56.10]

TASK [Install Docker Compose] ******************************************************************************************************************
fatal: [192.168.56.10]: FAILED! => {"changed": false, "msg": "Unable to find any of pip3 to use.  pip needs to be installed."}

PLAY RECAP *************************************************************************************************************************************
192.168.56.10              : ok=5    changed=1    unreachable=0    failed=1    skipped=0    rescued=0    ignored=0

drggtm@Ubuntu:~/Hazesoft_Internship/T2/HAZESOFT-T1/t2-final$
```

.

```
drggtm@Ubuntu: ~/Hazesoft_Inter...  ×  drggtm@Ubuntu: ~/Hazesoft_Inter...  ×  drggtm@Ubuntu: /opt/vagrant  ×  drggtm@Ubuntu: /opt  ×

TASK [Install Docker dependencies] *************************************************************************************************************
ok: [192.168.56.10]

TASK [Add Docker GPG key] **********************************************************************************************************************
ok: [192.168.56.10]

TASK [Add Docker repository] *******************************************************************************************************************
ok: [192.168.56.10]

TASK [Update apt cache] ************************************************************************************************************************
ok: [192.168.56.10]

TASK [Install Docker] **************************************************************************************************************************
ok: [192.168.56.10]

TASK [Install Python and pip] ******************************************************************************************************************
ok: [192.168.56.10]

TASK [Upgrade pip] *****************************************************************************************************************************
ok: [192.168.56.10]

TASK [Install Docker Compose] ******************************************************************************************************************
ok: [192.168.56.10]

TASK [Clone repository] ************************************************************************************************************************
ok: [192.168.56.10]

TASK [Copy site folder to nginx document root] *************************************************************************************************
An exception occurred during task execution. To see the full traceback, use -vvv. The error was: If you are using a module and expect the file
 to exist on the remote, see the remote_src option
fatal: [192.168.56.10]: FAILED! => {"changed": false, "msg": "Could not find or access '/opt/task/site' on the Ansible Controller.\nIf you are
 using a module and expect the file to exist on the remote, see the remote_src option"}

PLAY RECAP *************************************************************************************************************************************
192.168.56.10              : ok=9    changed=0    unreachable=0    failed=1    skipped=0    rescued=0    ignored=0
```

.


drggtm@Ubuntu: ~/Hazesoft_Inter...
drggtm@Ubuntu: ~/Hazesoft_Inter...
drggtm@Ubuntu: /opt/vagrant
drggtm@Ubuntu: /opt
-55336849246450 `" && echo ansible-tmp-1687163170.7614326-12363-55336849246450="` echo /home/vagrant/.ansible/tmp/ansible-tmp-1687163170.7614326-12363-55336849246450 `") && sleep 0'"'"'
<192.168.56.10> (0, b'ansible-tmp-1687163170.7614326-12363-55336849246450=/home/vagrant/.ansible/tmp/ansible-tmp-1687163170.7614326-12363-55336849246450\n', b'')
<192.168.56.10> ESTABLISH SSH CONNECTION FOR USER: vagrant
<192.168.56.10> SSH: EXEC ssh -o ControlMaster=auto -o ControlPersist=60s -o UserKnownHostsFile=/dev/null -o ServerAliveInterval=20 -o StrictHostKeyChecking=no -o KbdInteractiveAuthentication=no -o PreferredAuthentications=gssapi-with-mic,gssapi-keyex,hostbased,publickey -o PasswordAuthentication=no -o 'User="vagrant"' -o ConnectTimeout=10 -o 'ControlPath="/home/drggtm/.ansible/cp/c1779e6473"' 192.168.56.10 '/bin/sh -c '"'"'rm -f -r /home/vagrant/.ansible/tmp/ansible-tmp-1687163170.7614326-12363-55336849246450/ > /dev/null 2>&1 && sleep 0'"'"'
<192.168.56.10> (0, b'', b'')
The full traceback is:
Traceback (most recent call last):
File "/usr/lib/python3/dist-packages/ansible/plugins/action/copy.py", line 466, in run
source = self._find_needle('files', source)
File "/usr/lib/python3/dist-packages/ansible/plugins/action/__init__.py", line 1431, in _find_needle
return self._loader.path_dwim_relative_stack(path_stack, dirname, needle)
File "/usr/lib/python3/dist-packages/ansible/parsing/dataloader.py", line 341, in path_dwim_relative_stack
raise AnsibleFileNotFound(file_name=source, paths=[to_native(p) for p in search])
ansible.errors.AnsibleFileNotFound: Could not find or access '/opt/task/site' on the Ansible Controller.
If you are using a module and expect the file to exist on the remote, see the remote_src option
fatal: [192.168.56.10]: FAILED! => {
"changed": false,
"invocation": {
"dest": "/var/www/html",
"module_args": {
"dest": "/var/www/html",
"src": "/opt/task/site"
},
"src": "/opt/task/site"
},
"msg": "Could not find or access '/opt/task/site' on the Ansible Controller.\nIf you are using a module and expect the file to exist on the remote, see the remote_src option"
}
PLAY RECAP
192.168.56.10 : ok=9 changed=0 unreachable=0 failed=1 skipped=0 rescued=0 ignored=0

.


drggtm@Ubuntu: ~/Hazesoft_Inter...
drggtm@Ubuntu: ~/Hazesoft_Inter...
drggtm@Ubuntu: /opt/vagrant
drggtm@Ubuntu: /opt
TASK [Add Docker GPG key]
ok: [192.168.56.10]
TASK [Add Docker repository]
ok: [192.168.56.10]
TASK [Update apt cache]
ok: [192.168.56.10]
TASK [Install Docker]
ok: [192.168.56.10]
TASK [Install Python and pip]
ok: [192.168.56.10]
TASK [Upgrade pip]
ok: [192.168.56.10]
TASK [Install Docker Compose]
ok: [192.168.56.10]
TASK [Clone repository]
changed: [192.168.56.10]
TASK [Build Docker image]
fatal: [192.168.56.10]: FAILED! => {"changed": true, "cmd": ["docker", "build", "-t", "your_image_name", "/opt/task"], "delta": "0:00:01.143110", "end": "2023-06-19 08:38:37.202951", "msg": "non-zero return code", "rc": 1, "start": "2023-06-19 08:38:36.059841", "stderr": "#1 [internal] load .dockerignore\n#1 transferring context:\n#1 transferring context: 2B 0.0s done\n#1 DONE 0.1s\n\n#2 [internal] load build definition from Dockerfile\n#2 transferring dockerfile: 2B done\n#2 DONE 0.1s\nERROR: failed to solve: failed to read dockerfile: open /var/lib/docker/tmp/buildkit-mount3296022473/Dockerfile: no such file or directory", "stderr_lines": ["#1 [internal] load .dockerignore", "#1 transferring context:", "#1 transferring context: 2B 0.0s done", "#1 DONE 0.1s", "", "#2 [internal] load build definition from Dockerfile", "#2 transferring dockerfile: 2B done", "#2 DONE 0.1s", "ERROR: failed to solve: failed to read dockerfile: open /var/lib/docker/tmp/buildkit-mount3296022473/Dockerfile: no such file or directory"], "stdout": "", "stdout_lines": []}
PLAY RECAP
192.168.56.10 : ok=9 changed=1 unreachable=0 failed=1 skipped=0 rescued=0 ignored=0

..

```
drggtm@Ubuntu: ~/Hazesoft_Inter...   drggtm@Ubuntu: ~/Hazesoft_Inter...   drggtm@Ubuntu: /opt/vagrant   drggtm@Ubuntu: /opt

TASK [Install Docker dependencies] *********************************************************************************************************************
ok: [192.168.56.10]

TASK [Add Docker GPG key] ******************************************************************************************************************************
ok: [192.168.56.10]

TASK [Add Docker repository] ***************************************************************************************************************************
ok: [192.168.56.10]

TASK [Update apt cache] ********************************************************************************************************************************
ok: [192.168.56.10]

TASK [Install Docker] **********************************************************************************************************************************
ok: [192.168.56.10]

TASK [Install Python and pip] **************************************************************************************************************************
ok: [192.168.56.10]

TASK [Upgrade pip] *************************************************************************************************************************************
ok: [192.168.56.10]

TASK [Install Docker Compose] **************************************************************************************************************************
ok: [192.168.56.10]

TASK [Clone repository] ********************************************************************************************************************************
changed: [192.168.56.10]

TASK [Build Docker image] ******************************************************************************************************************************
changed: [192.168.56.10]

TASK [Run Docker container] ****************************************************************************************************************************
changed: [192.168.56.10]

PLAY RECAP *********************************************************************************************************************************************
192.168.56.10              : ok=11   changed=3    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
```

.

```
vagrant@ubuntu2204: /opt/task/site   drggtm@Ubuntu: ~/Hazesoft_Internship/T1

vagrant@ubuntu2204:/opt/task/site$
vagrant@ubuntu2204:/opt/task/site$
vagrant@ubuntu2204:/opt/task/site$ sudo docker images
REPOSITORY   TAG       IMAGE ID   CREATED   SIZE
vagrant@ubuntu2204:/opt/task/site$
vagrant@ubuntu2204:/opt/task/site$
vagrant@ubuntu2204:/opt/task/site$
vagrant@ubuntu2204:/opt/task/site$
vagrant@ubuntu2204:/opt/task/site$ sudo docker ps
CONTAINER ID   IMAGE     COMMAND                  CREATED          STATUS          PORTS                              NAMES
cb029d3ee13b   task1     "nginx -g 'daemon of…"   15 seconds ago   Up 15 seconds   9000/tcp, 0.0.0.0:9000->80/tcp   task2
vagrant@ubuntu2204:/opt/task/site$
vagrant@ubuntu2204:/opt/task/site$
vagrant@ubuntu2204:/opt/task/site$ sudo docker exec -it cb029d3ee13b sh
/ # cd /etc/nginx
/etc/nginx # ls
fastcgi.conf    fastcgi_params  http.d          mime.types      modules         nginx.conf      scgi_params     uwsgi_params
/etc/nginx #
/etc/nginx # cd http.d/
/etc/nginx/http.d # ls
default.conf
/etc/nginx/http.d # sudo nano default.conf
sh: sudo: not found
/etc/nginx/http.d # sudo vi default.conf
sh: sudo: not found
/etc/nginx/http.d #  vi default.conf
/etc/nginx/http.d #  vi default.conf
/etc/nginx/http.d # nginx -s reload
/etc/nginx/http.d #
/etc/nginx/http.d #
/etc/nginx/http.d # curl localhost:9000/site/index.html
sh: curl: not found
/etc/nginx/http.d # exit
vagrant@ubuntu2204:/opt/task/site$ curl localhost:9000/site/index.html
You did it, Congratulations!!
vagrant@ubuntu2204:/opt/task/site$
```

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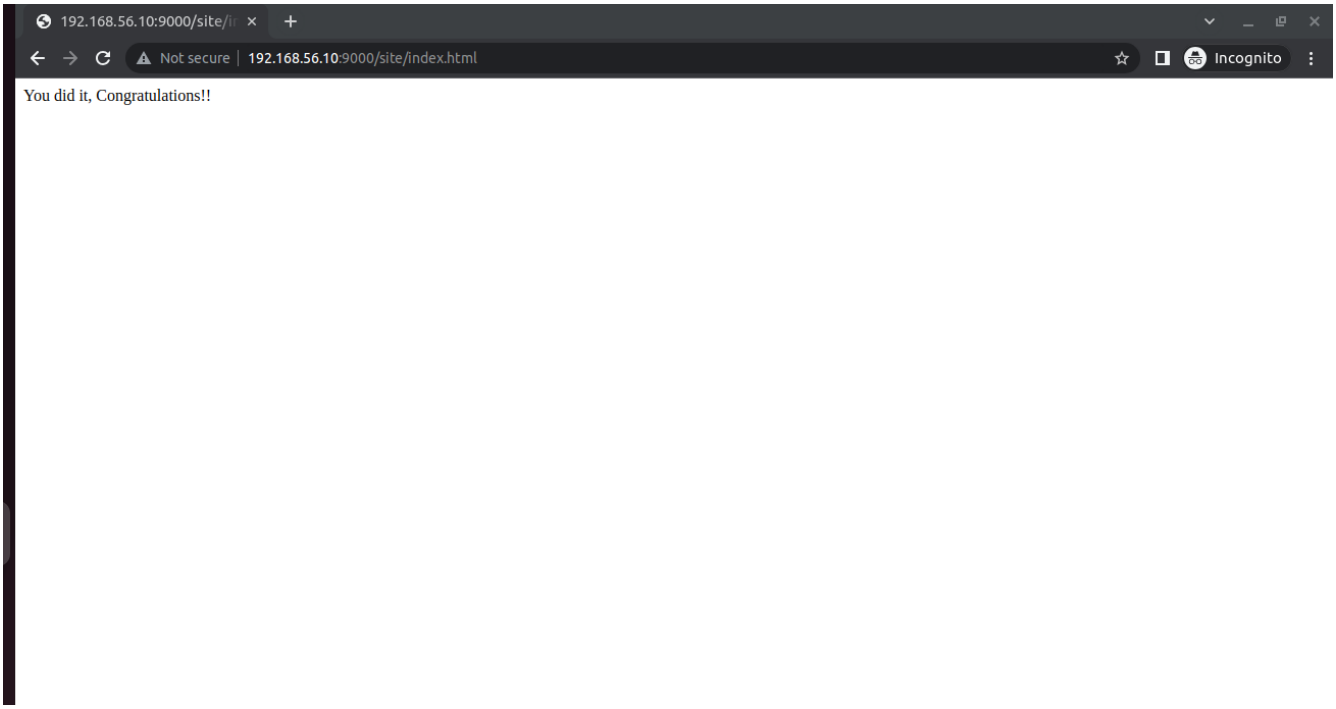
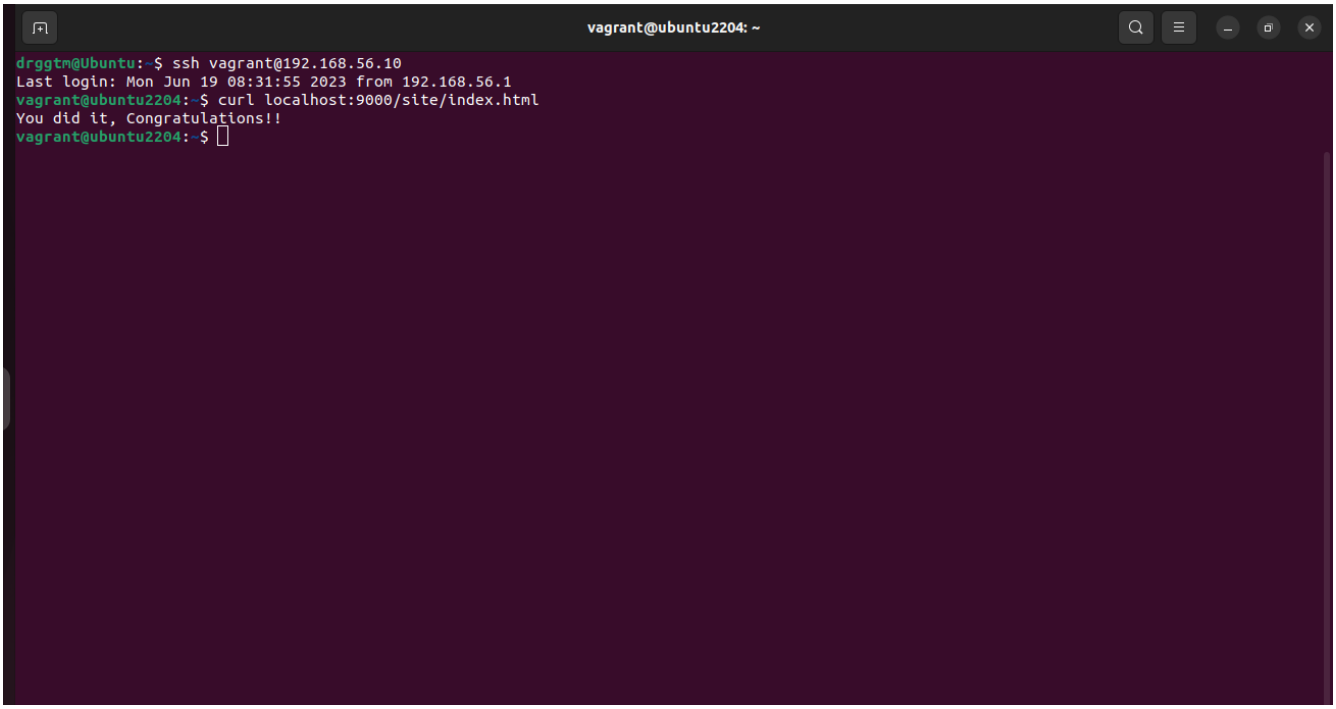
Final result:-


192.168.56.10:9000/site/
Not secure | 192.168.56.10:9000/site/index.html
Incognito
You did it, Congratulations!!

.


vagrant@ubuntu2204: ~
drggtm@Ubuntu:~$ ssh vagrant@192.168.56.10
Last login: Mon Jun 19 08:31:55 2023 from 192.168.56.1
vagrant@ubuntu2204:~$ curl localhost:9000/site/index.html
You did it, Congratulations!!
vagrant@ubuntu2204:~$