1) WS

Create devops user in the system where ansible is to operate on

Go to vim /etc/sudoers and give devops root power.

Devops   ALL=(ALL)   NOPASSWD: ALL

Create devops user in the other system(where playbook will be made)

Su - devops

Mkdir /ws

Type ansible --version and copy the path from the config file

cp /etc/ansible/ansible.cfg .   (instead of . you can use pwd and find out location of ws)

create vi hosts and write the host IP ADDRESS

ssh-keygen

ssh-copy-id devops@hostipaddress

vi ansible.cfg

change inventory path

remote_user=devops

Also uncomment first3 in privilege escalation

2)GROUPING

Vim /hosts (or) vim /etc/ansible/hosts

(** to create a group write [group1] above a bunch of IP ADDRESSES

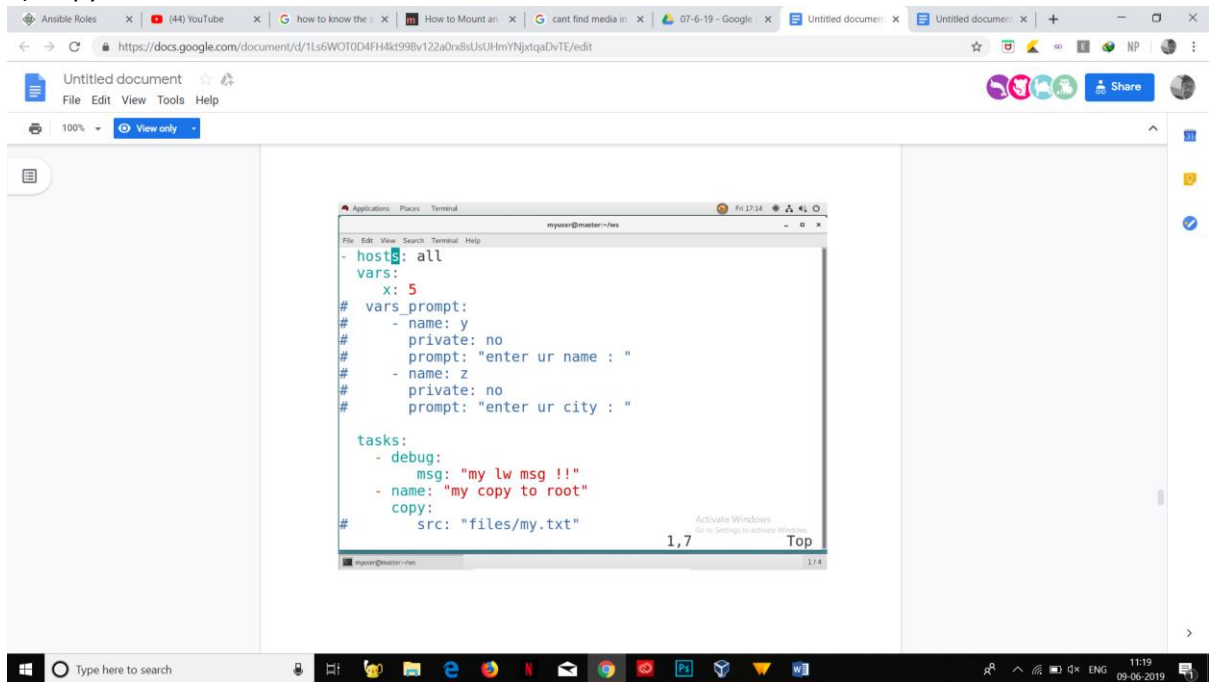Ansible group1 - -list-hosts -> to see all the ip address in the group1)

Ssh-copy-id root@192.168.0.5

ansible group1 -m command -a date (date command is run in the group)

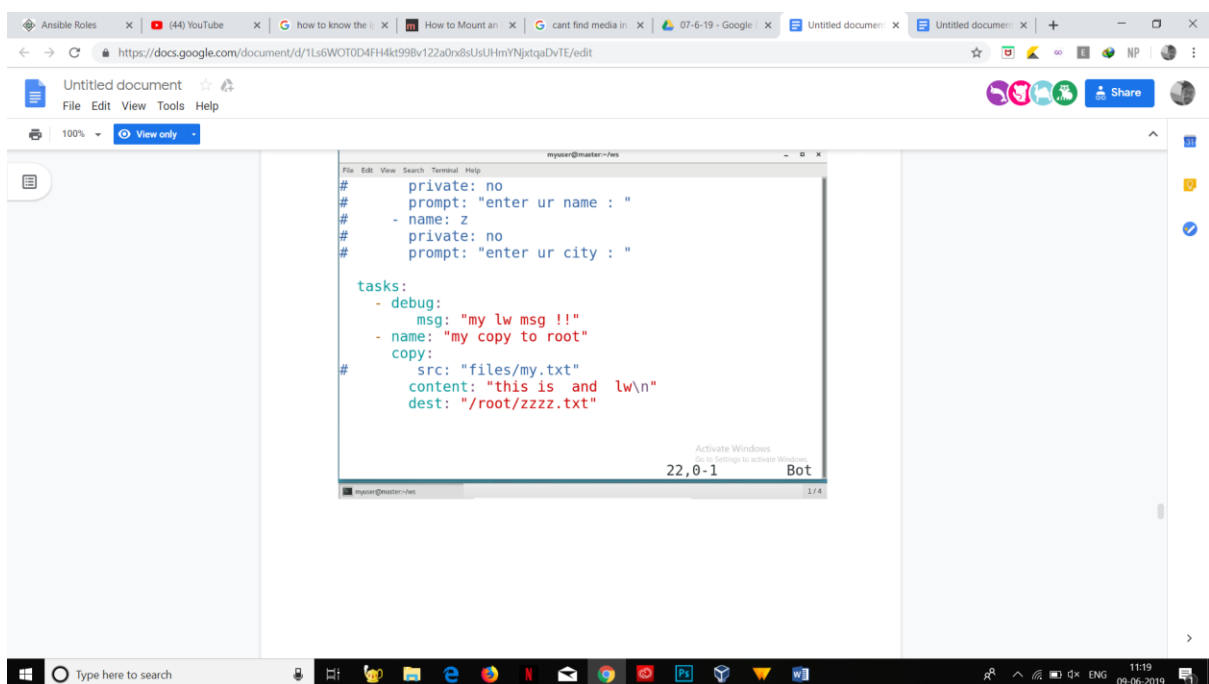3)users and groups through ansible

Ansible-doc user

4) copy


```
- hosts: all
  vars:
    x: 5
#  vars_prompt:
#    - name: y
#      private: no
#      prompt: "enter ur name : "
#    - name: z
#      private: no
#      prompt: "enter ur city : "

  tasks:
    - debug:
        msg: "my lw msg !!"
    - name: "my copy to root"
      copy:
#        src: "files/my.txt"
```



```
#      private: no
#      prompt: "enter ur name : "
#    - name: z
#      private: no
#      prompt: "enter ur city : "

  tasks:
    - debug:
        msg: "my lw msg !!"
    - name: "my copy to root"
      copy:
#        src: "files/my.txt"
        content: "this is  and  lw\n"
        dest: "/root/zzzz.txt"
```
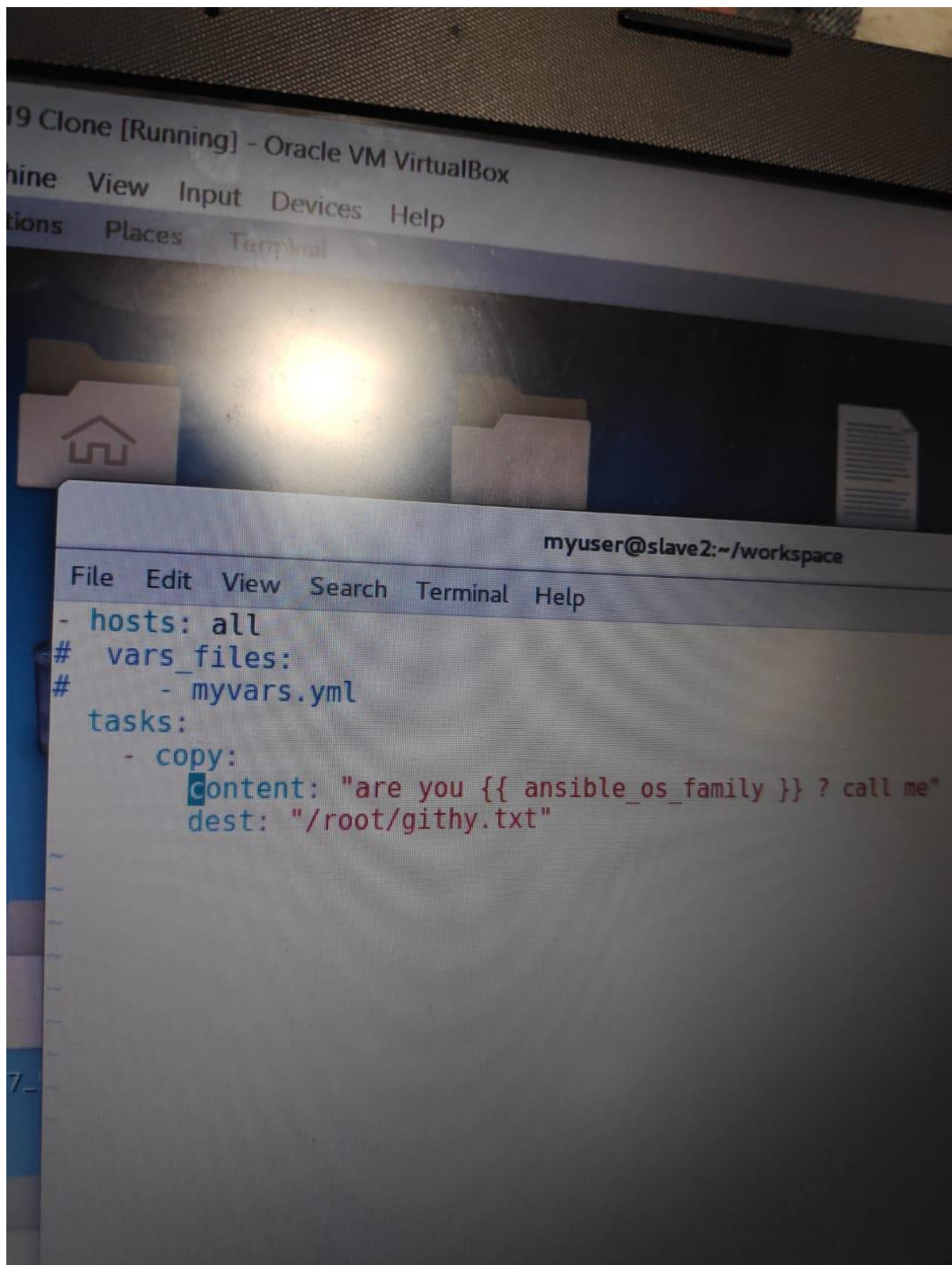
5) Ansible all –m setup

myuser@slave2:~/workspace

File   Edit   View   Search   Terminal   Help

```
- hosts: all
#   vars_files:
#        - myvars.yml
  tasks:
    - copy:
        content: "are you {{ ansible_os_family }} ? call me"
        dest: "/root/githy.txt"
```

6)Vault

Only the person with password can open the yml file

ansible-vault create mysecure.yml

(new file called mysecure.yml is created and it is encrypted)

ansible-vault edit mysecure.yml (to open the created file)

ansible-playbook --ask-vault-pass mail.yml (so that password for the encrypted file containing the variable is asked)
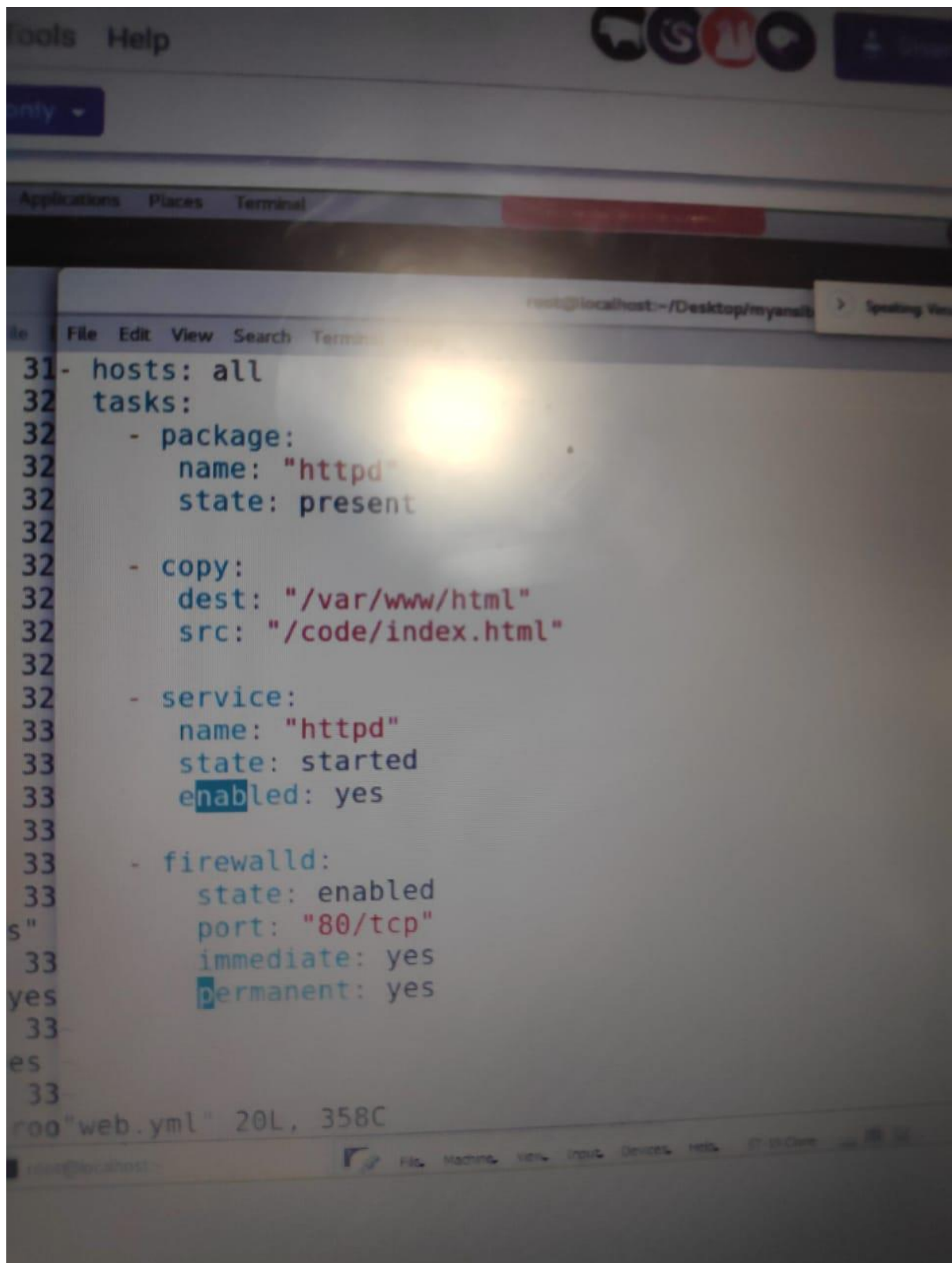
copy is just for blindly copying(use only for static files)

use template to account for variables also

jinja template (.j2)

7)same as copy but dynamic with the variable

8)ansible –doc service

File   Edit   View   Search   Terminal

```yaml
31 - hosts: all
32   tasks:
32     - package:
32         name: "httpd"
32         state: present
32
32     - copy:
32         dest: "/var/www/html"
32         src: "/code/index.html"
32
32     - service:
33         name: "httpd"
33         state: started
33         enabled: yes
33
33     - firewalld:
33         state: enabled
           port: "80/tcp"
33         immediate: yes
           permanent: yes
33
33
roo "web.yml" 20L, 358C
```

CREATE YOUR OWN FTP FOLDER:-

yum install vsftpd (install vsftpd)

cd /var/ftp/pub (go to this directory)

vim source.txt

systemctl restart vsftpd

systemctl enable vsftpd

192.168.43.120/pub/source.txt -> TO DOWNLOAD A FILE FROM THE BROWSER

(Scp is not supported in browser)

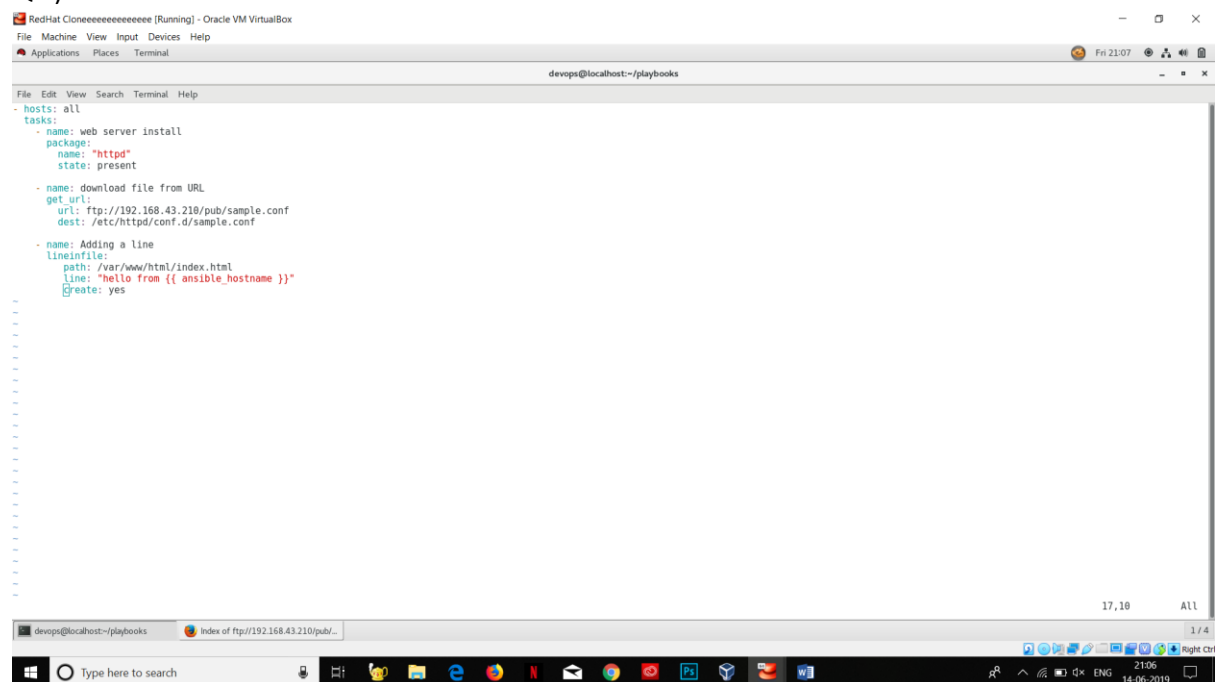wget ftp://192/168/.0.7/pub/source.txt   -> TO DOWNLOAD A FILE FROM TERMINAL

 To download file from url in ANSIBLE use get_url

(ansible-doc get_url)

(ansible-doc lineinfile -> adds a line to a file If it does not exist .Doesnt overwrite like copy command .Instead it appends content)

(immediate -> makes into the state immediately)

Q.2)

- hosts: all

  tasks:

  - name: web server install

    package:

```yaml
      name: "httpd"

      state: present

  - name: download file from url

    get_url:

        url: ftp://192.168.0.6/pub/source.html

        dest: /etc/httpd/conf.d/source.conf

  - name: add a line to a file

    lineinfile:

        path: /var/www/html/index.html

        line: 'Hello from {{ ansible_hostname }}'

        create: yes

  - name: service web server

    service:

        name: "httpd"

        state: started

        enabled: yes

  - name: web server firewall

    firewalld:

        port: 80/tcp

        permanent: true

        state: enabled

        immediate: yes
```

TAGS

```yaml
- hosts: all

  tasks

  - name: web server

    package:

      name:"httpd"

      state:"present"

    tags:

      - myserver
```

- name: service
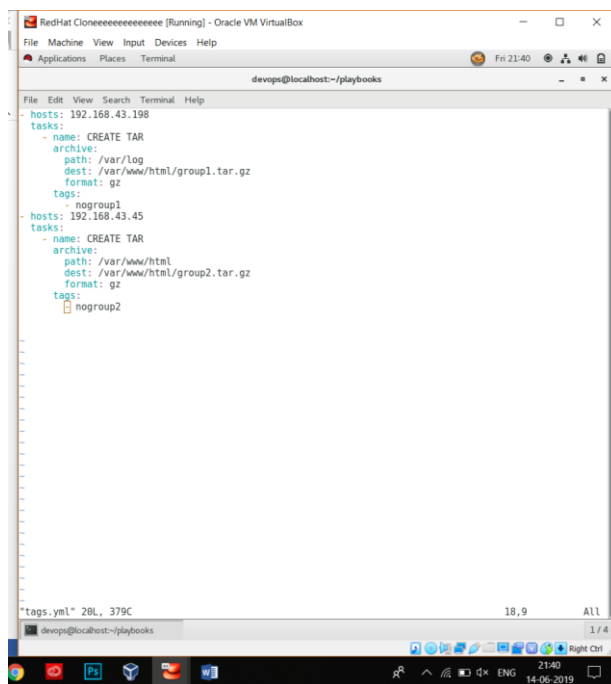
  service:

    name: "httpd"

    state: "started"

  tags:

  - myservice

ansible-playbook   --tag myservice   tag.yml

ARCHIVING

Q.5)

Normally : tar -cvzf   log.tar.gz   /var/log

Through ansible: (ansible-doc archive)

- hosts: 192.168.43.5,192.168.43.6

  tasks:

  - name: Create tar

    archive:

path: /var/log

　　　　dest: /var/www/html/group1.tar.gz

　　　　format: gz

　　　tags:

　　　　- no group1

- hosts: 192.168.43.3,192.168.43.4

　tasks:

　　- name: Create tar

　　　archive:

　　　　path: /var/log

　　　　dest: /var/www/html/group1.tar.gz

　　　　format: gz

　　　tags:

　　　　- nogroup2

RUNNING A SHELL SCRIPT

Vim /tmp/runme.sh

(# !/usr/bin/bash

Date

Echo hi)   -> inside file

/tmp/runme.sh   ->To just run the script

(Ansible-doc copy)

 (mode is for chmod powers)
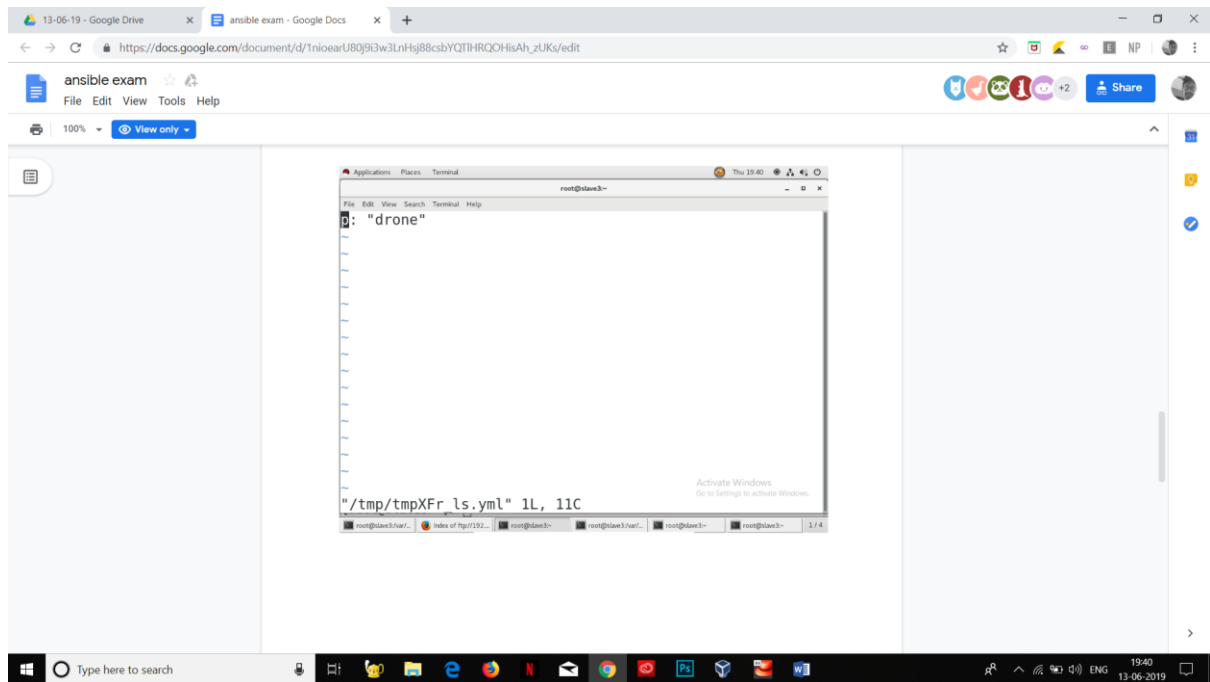
Vim adhoc.sh

(Inside file

#!/bin/bash

Ansible all -m copy -a "src=/tmp/runme.sh dest=/bin/runme.sh   mode=0755   owner=devops group=devops")

Chmod +x adhoc.sh

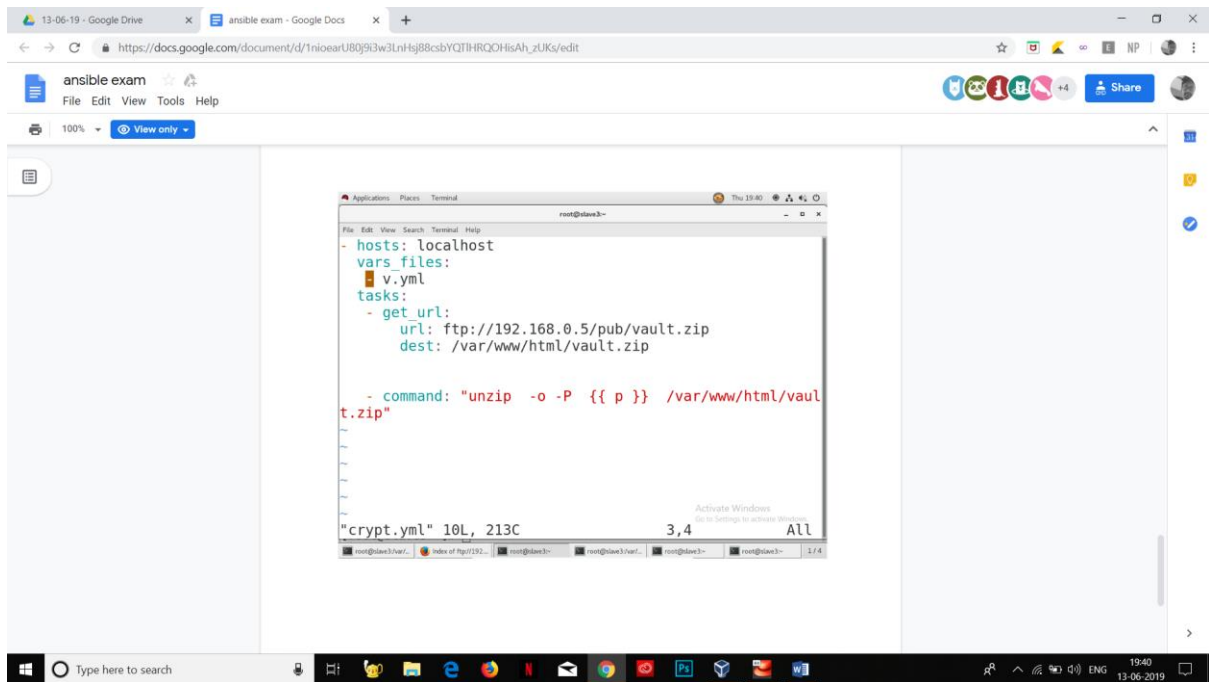./adhoc.sh

ANSIBLE FTP

Ansible-vault create v.yml and write inside:

v.yml has the variable P which has the password for unzipping the file

Through get_url the file is shared

Through command it is unzipped : Unzip -o -P drone vault.zip (drone is the password for opening the zip file)

Ansible playbook –h (for help)

Ansible playbook --ask vault-pass crypt.yml

Ansible-playbook --vault-password-file=mypass   crypt.yml (WITH THIS COMMAND AUTOMATICALLY THE PASSWORD IS TAKEN from mypass file)

PRINTING FACTS

Ansible all   -m setup   (to get facts)

Ansible_default_ipv4.address   (.address because it is a subkey under it)

>vim info.yml

- hosts: all

  tasks:

   - copy:

        dest: /var/www/new.html

        content: "{{ ansible_default_ipv4.macaddress }} {{ ansible_default_ipv4.address }} {{ ansible_hostname }} {{ ansible_processor_count }}"

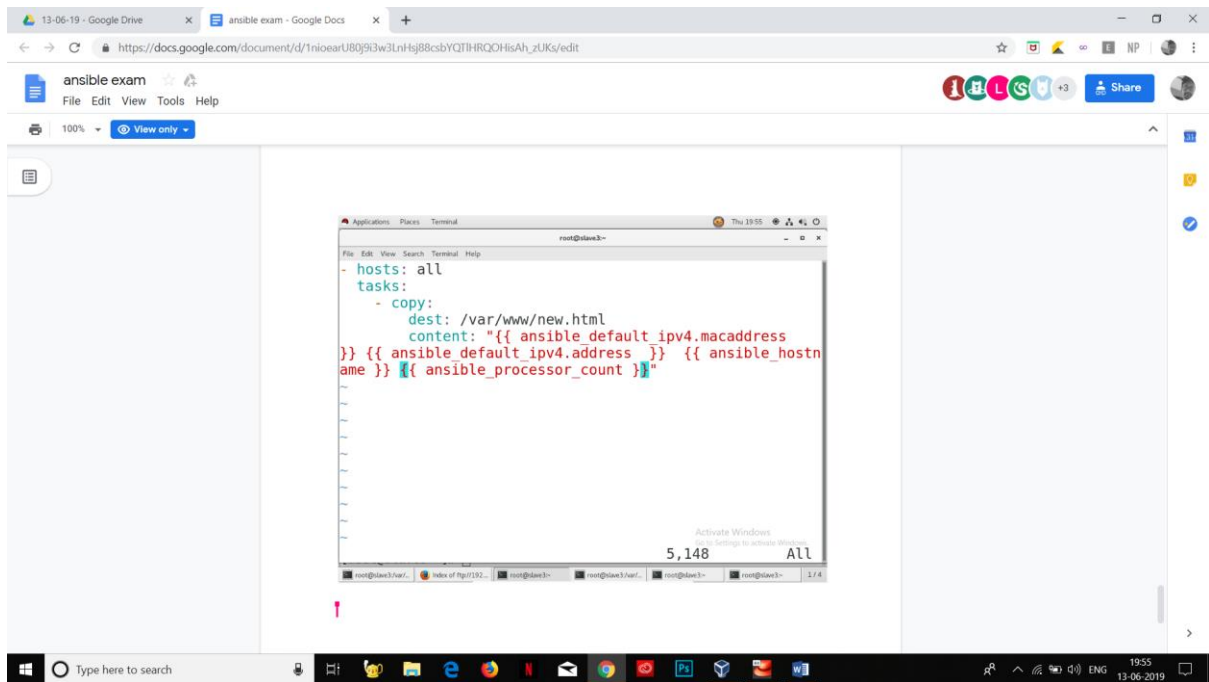Screenshot 1 (terminal):
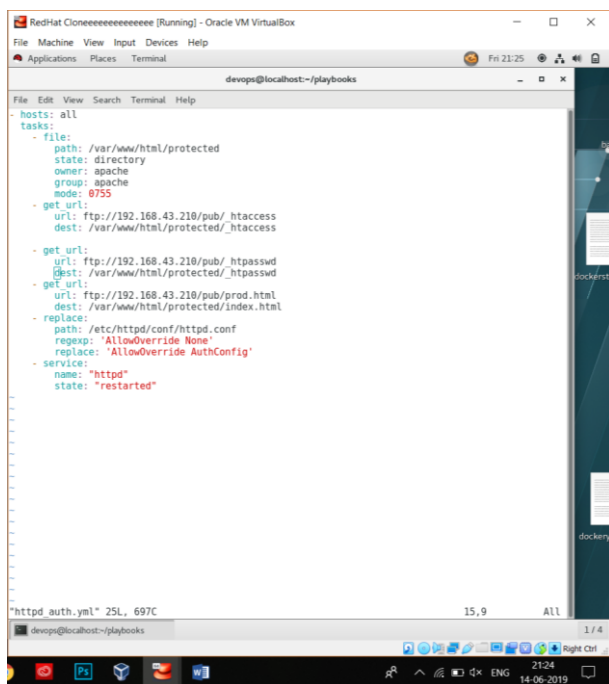
```
- hosts: all
  tasks:
    - copy:
        dest: /var/www/new.html
        content: "{{ ansible_default_ipv4.macaddress
}} {{ ansible_default_ipv4.address  }}  {{ ansible_hostn
ame }} {{ ansible_processor_count }}"
```

```
5,148                 All
```

Q.3)

Screenshot 2 (RedHat Clone VirtualBox terminal):

```
- hosts: all
  tasks:
    - file:
        path: /var/www/html/protected
        state: directory
        owner: apache
        group: apache
        mode: 0755
    - get_url:
        url: ftp://192.168.43.210/pub/_htaccess
        dest: /var/www/html/protected/_htaccess

    - get_url:
        url: ftp://192.168.43.210/pub/_htpasswd
        dest: /var/www/html/protected/_htpasswd
    - get_url:
        url: ftp://192.168.43.210/pub/prod.html
        dest: /var/www/html/protected/index.html
    - replace:
        path: /etc/httpd/conf/httpd.conf
        regexp: 'AllowOverride None'
        replace: 'AllowOverride AuthConfig'
    - service:
        name: "httpd"
        state: "restarted"
```

```
"httpd_auth.yml" 25L, 697C            15,9       All
```

- hosts: all

 tasks:

  - file:

        path: /var/www/html/protected

        state: directory

        owner: apache

group: apache

                    mode: 0755

  - get_url:

                    url: ftp://foundation0.example.com/pub/.htaccess

                    dest: /var/www/html/protected/.htaccess

  - get_url:

                    url: ftp://foundation0.example.com/pub/.htpasswd

                    dest: /var/www/html/protected/.htpasswd

  - get_url:

                    url: ftp://foundation0.example.com/pub/prod.html

                    dest: /var/www/html/protected/.index.html

  - replace:

                    path: /etc/httpd/conf/httpd.conf

                    regexp: 'AllowOverride None'

                    replace: 'AllowOverride AuthConfig'

  - service:

                    name: "httpd"

                    state: "restarted"

Q.4)In ansible hosts file

192.168.0.5

[Production]

192.168.0.5

192.168.0.6

[Backup]

Node3

Node4

Vim product.yml
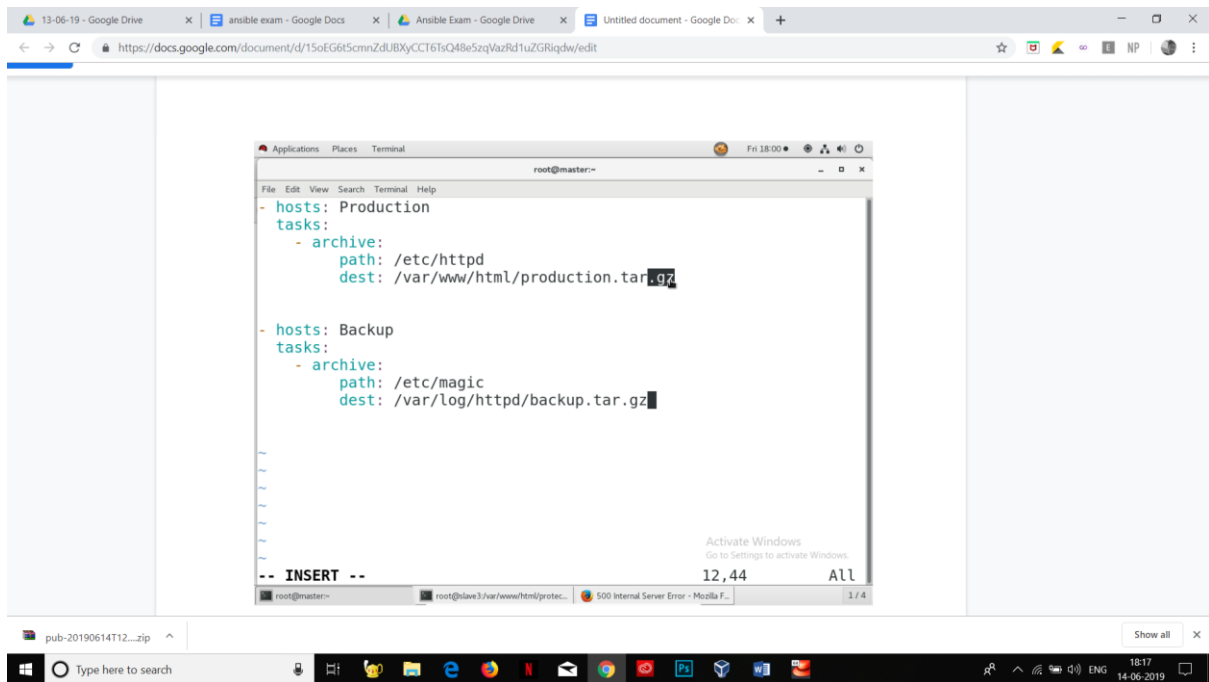
Q.7)

Register: x is used to store
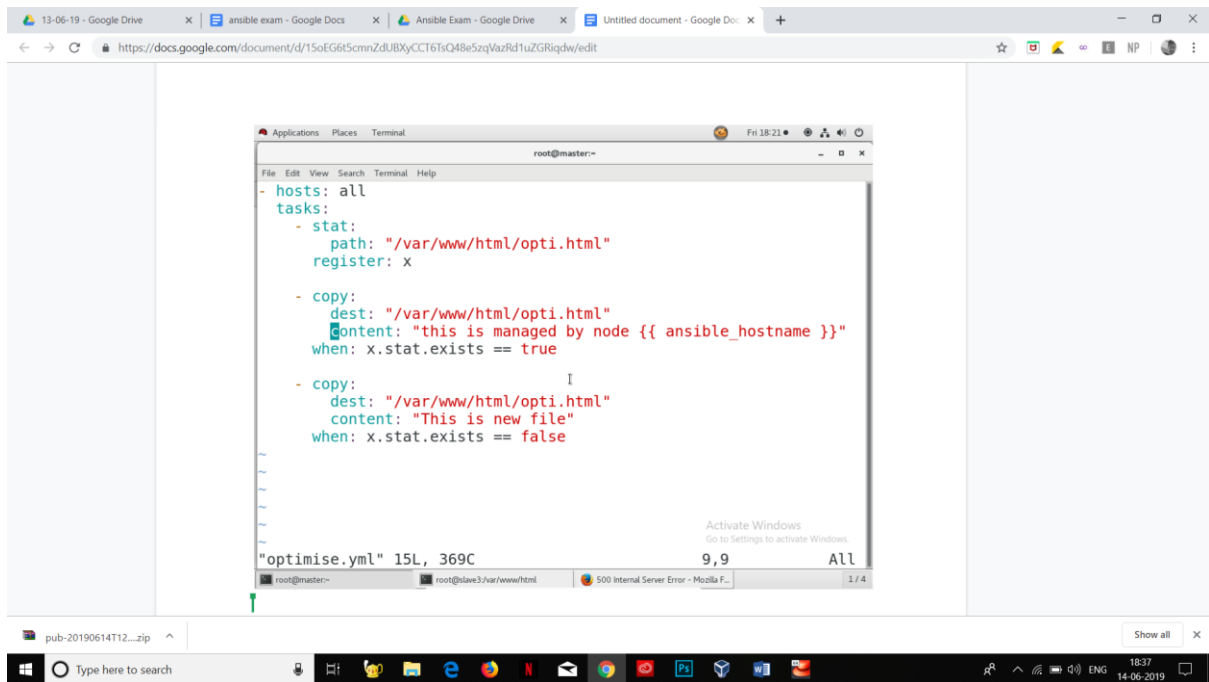
Debug for printing

Stat module is used to check if a file is made or not

(if exists= false then file isn't created)

When: x.stat.exists == true (FILE WILL RUN ONLY IF THIS CONDN is TRUE)

Ansible_hostname is fact

When: x.stat.exists ==False (FILE WILL RUN ONLY IF THIS CONDN is False)

>vim optimise.yml

- hosts: all

  tasks:

    - stat:

                        path: /var/www/html/opti.html

      register: x

    - copy:

                        dest: /var/www/html/opti.html

                        content: "this is managed by node {{ ansible_hostname }}"

      when: x.stat.exists == true

    - copy:

                        dest: /var/www/html/opti.html

                        content: "This is new File"

      when: x.stat.exists == false

Q.8)If code under block doesn't work then instead of failing all the other tasks using rescue the task in it is run

Exception handling
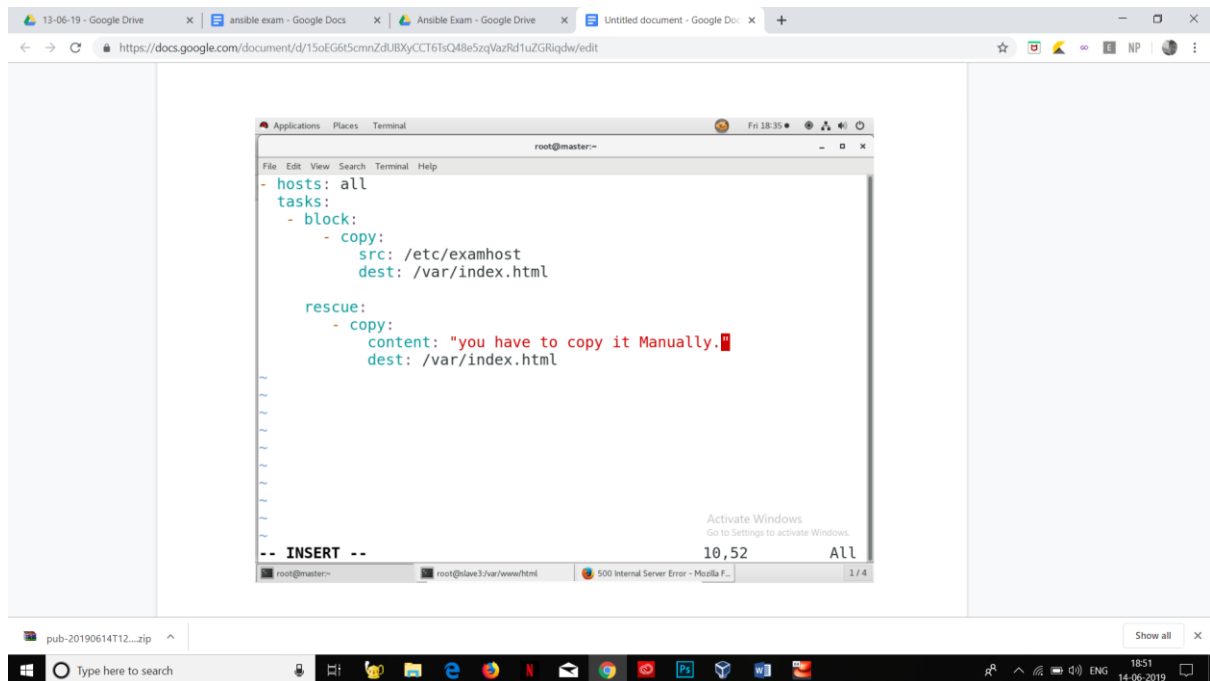
Q.9)

Vim noshutdown.yml

-hosts: all

Tasks:

  -service:

    Name: "httpd"

    State: started

    Enabled: true

Vim shutdown.yml

- hosts: servera, serverb

  Tasks:

    -service:

      Name:"httpd"

      State: stopped

Q.12)

```
- hosts: all
  vars_files:
    - /home/devops/playbooks/role/examfun.tar.gz/vars/main.yml
  tasks:
    - group:
        name: "{{ item }}"
        state: present
      with_items:
        - staff
        - webhosts
        - guests


    - user:
        name: "{{ item }}"
        state: present
```

```
    - user:
        name: "{{ item }}"
        state: present
        groups: webhosts, guests
      with_items:
        - "{{ staff }}"


    - user:
        name: "{{ item }}"
        state: present
        groups: webhosts, staff
      with_items:
        - "{{ guests }}"

    - user:
```
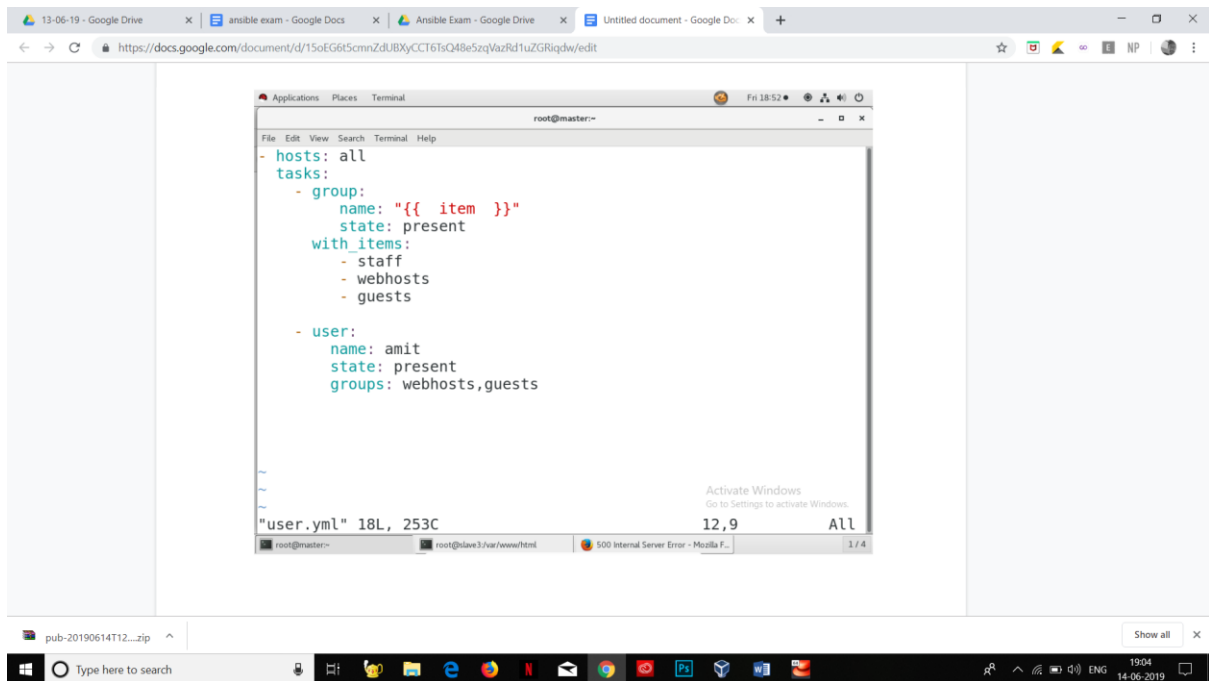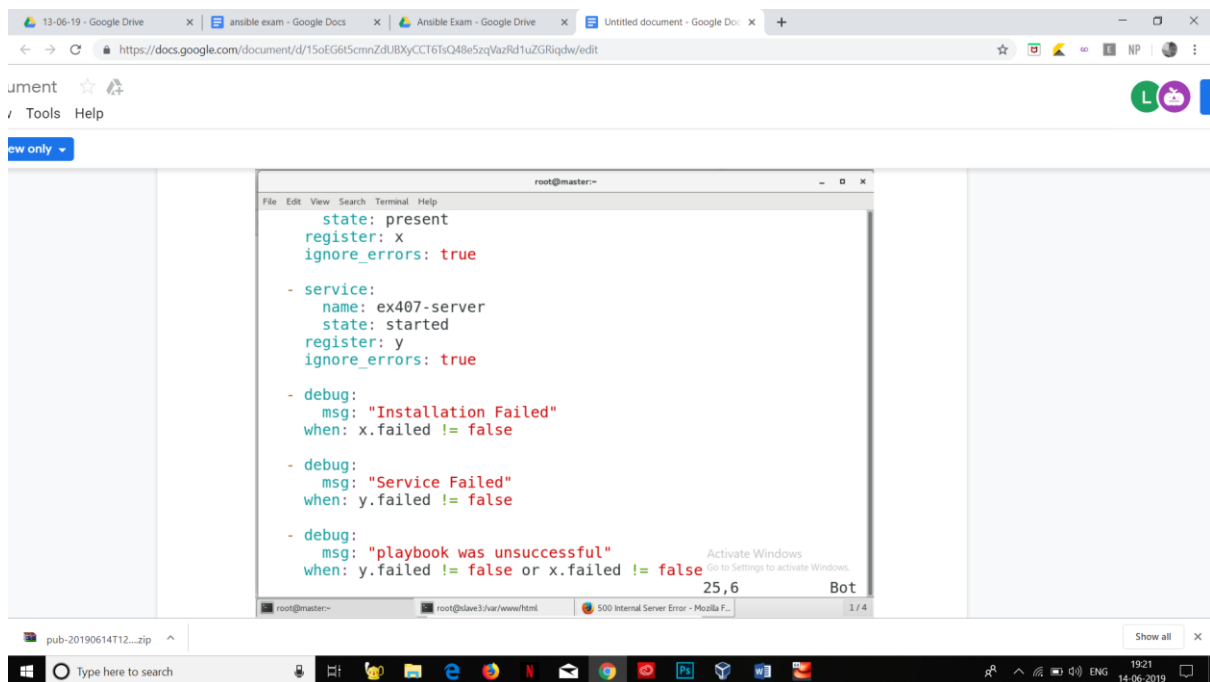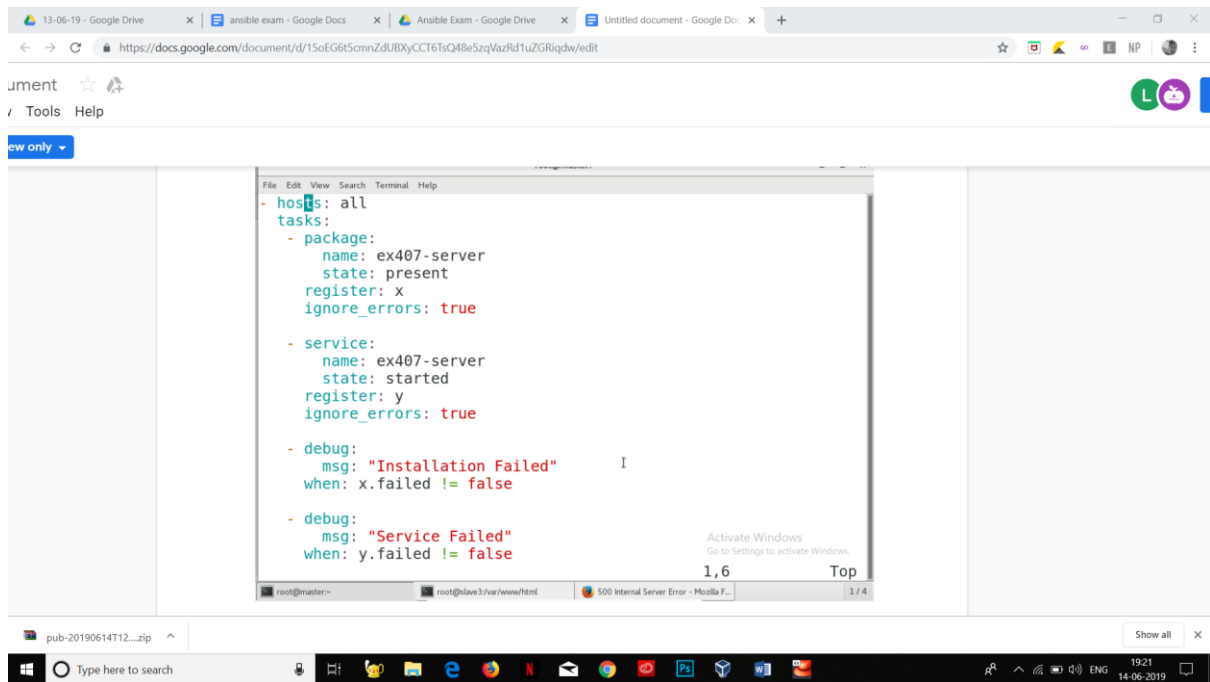
```
      - user:
          name: "{{ item }}"
          state: present
          groups: webhosts, staff
        with_items:
          - "{{ guests }}"

      - user:
          name: "{{ item }}"
          state: absent
        with_items:
          - "{{ revoked }}"
```
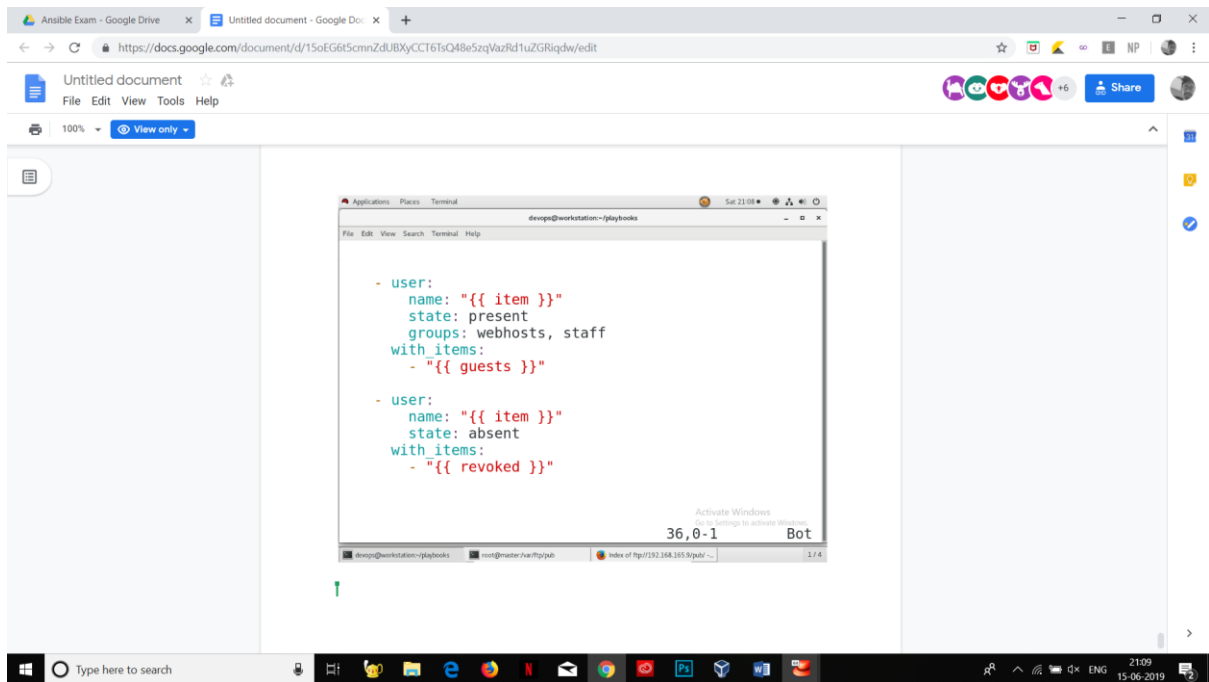
Item is a predefined variable (like for loop)


```
- hosts: all
  tasks:
    - group:
        name: "{{  item  }}"
        state: present
      with_items:
        - staff
        - webhosts
        - guests

    - user:
        name: amit
        state: present
        groups: webhosts,guests
```

Q.13) ERROR HANDLING

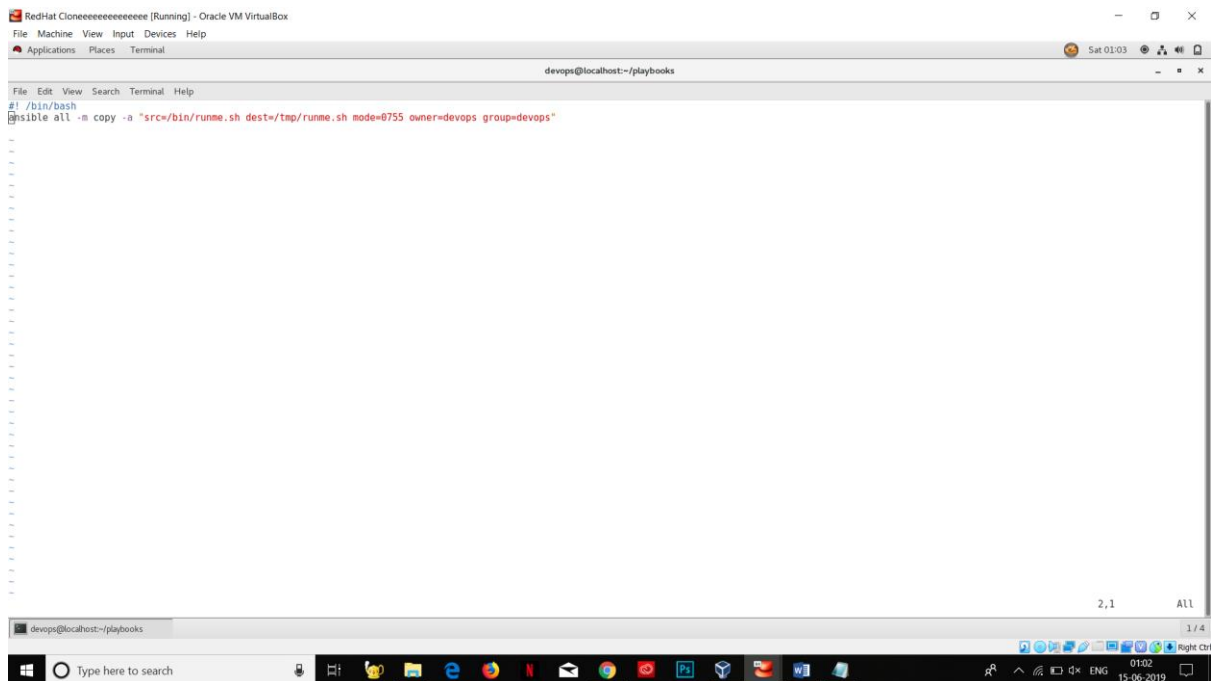Ignore_errors: true   (if the task fails,instead of failing entire program...move on)

Q.6)

Yum install wget

Go to /bin and do this sudo wget ftp:192.168.43.210/pub/runme.sh

Go to /home/devops/playbooks

Anisble all –m copy -a "src=/bin

Vim adhoc.sh

#! /bin/bash

Ansible all –m copy "src=/bin/runme.sh dest="/tmp/runme.sh mode=0755 owner=devops group=devops" - - become-user=devops (inside vim file)

Ansible all -m command -a "/tmp/runme.sh" --become-user=devops (inside the vim file) OR (-m shell)
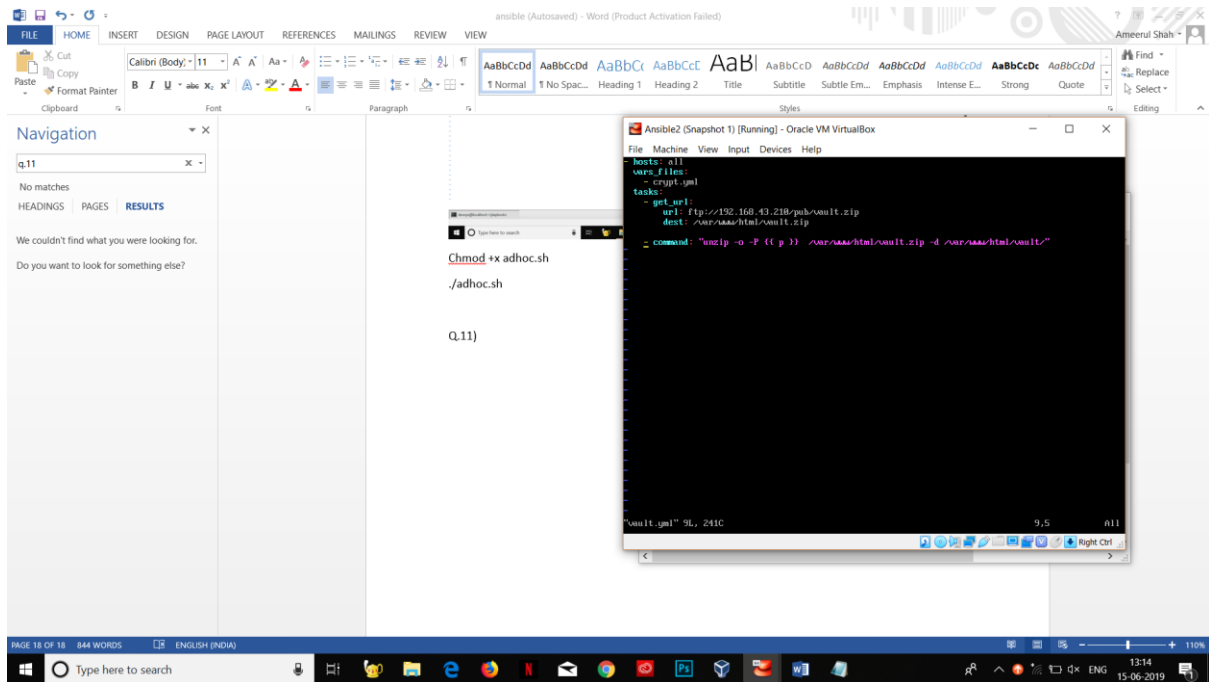
Chmod 0755 adhoc.sh

./adhoc.sh

Q.11)

Ansible-vault create crypt.yml (password ansiansi)

Ansible-vault edit crypt.yml

P: " drone"

Vim vault.yml

Vim .htpass (will contain ansiansi)

Ansible-playbook vault.yml --vault-password-file=/home/devops/playbooks/.htpass OR

ansible-playbook --vault-password-file=.htpass vault.yml

SETUP:

5VM

1VM – CONTROLLER:PLAYBOOK

4VM: MANAGED: CONFIGURE

(Will be given in instructions which system will be controller and which will be managed.According to hostname and IP Address accordingly).

Read instructions for 10 minutes

Root password will be given.Firewall will be disabled.Dont do the firewall coding.SE linux will be set to disabled and permissive.User devops will be made.ssh-keygen and copy id will already be done.DONT DO SSH-KEYGEN as it will overwritten.

Ipaddress and hostname will already be set.Even dns client will be done. (DON'T DO IP STATIC)

PING AND CHECK DURING STARTING USING HOSTNAME

Open terminal from applications-> favorites

99% of the work is done from workstation

Docs.example.com will be given

https://docs.ansible.com/ansible/latest/modules/service_module.html

ansible-doc get_url

RHEL7-GUI base system which will have 5 VM's in CLI with hostname like Workstation.lab.example

,node1,node2,node3 and node4

YUM WILL ALREADY BE MADE IN EXAM

SETUP

Host only in network

Mkdir /dvd
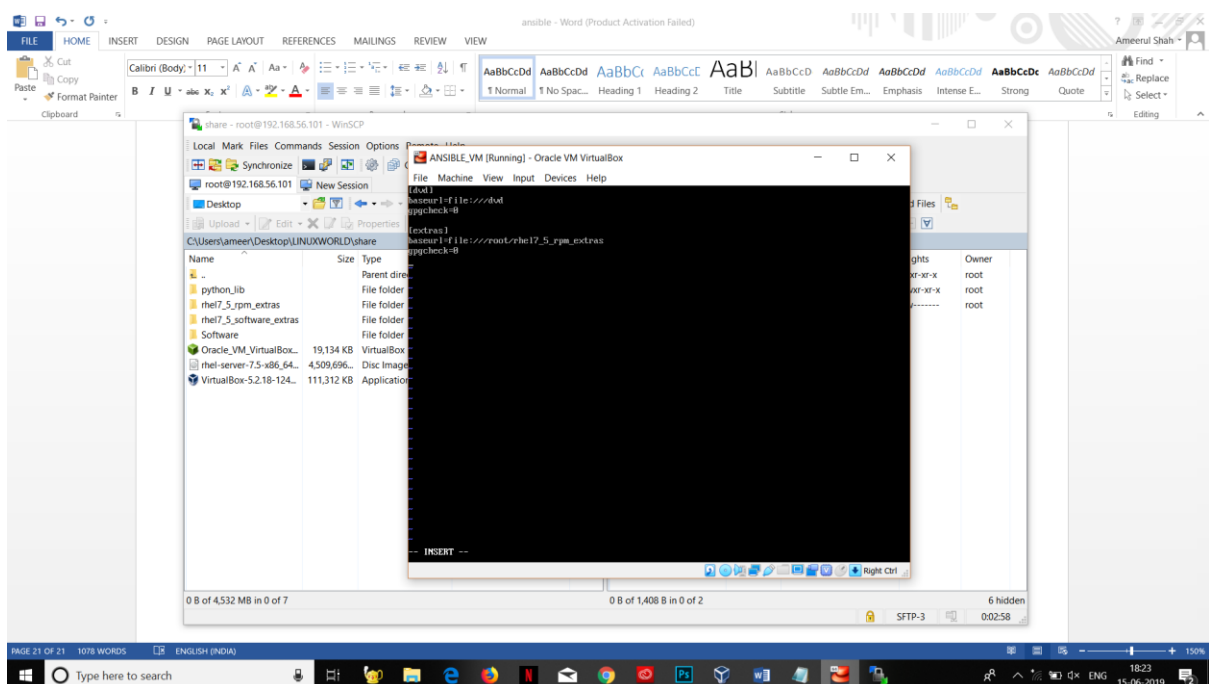
Vi /etc/rc.d/rc.local

Mount /dev/cdrom /dvd

Chmod +x /etc/rc.d/rc.local

Cd /etc/yum.repos.d

Vi dvd.repo

Winscp copy

rhel7_5_rpm extras

Yum install net-tools

Yum install vim

Systemctl stop firewalld

Systemctl disable firewalld

Useradd devops

Vim /etc/selinux/config (SELINUX=permissive)
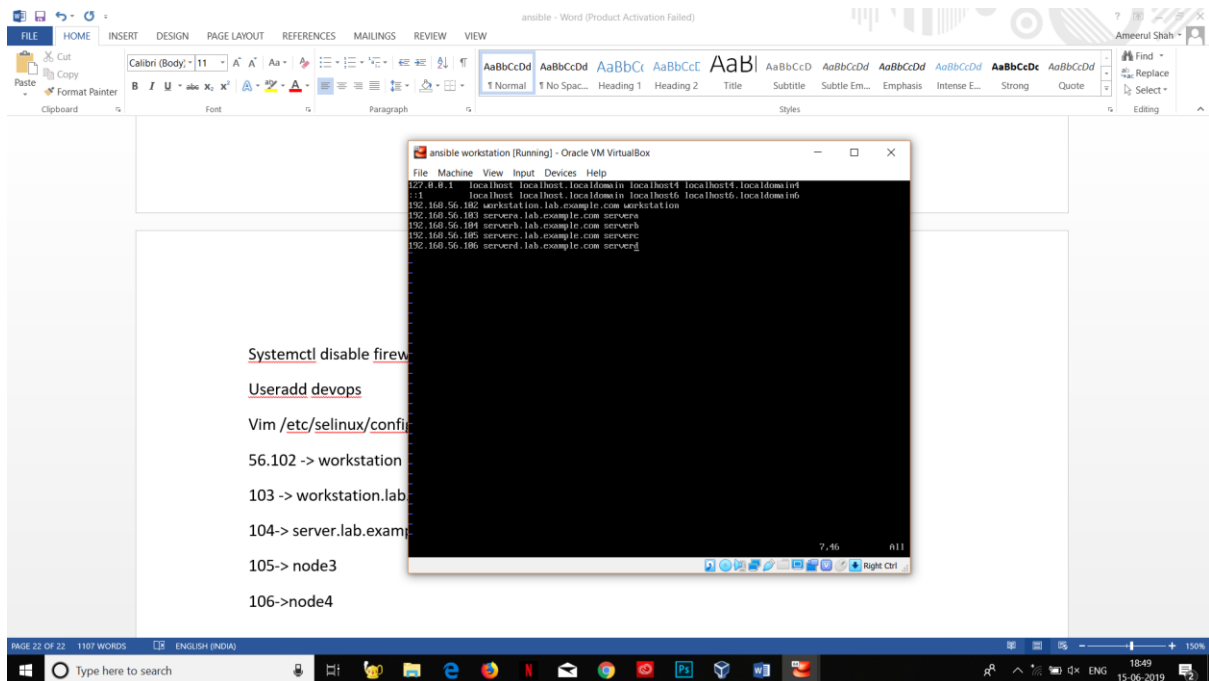
56.102 -> workstation

103 -> workstation.lab.example.com

104-> server.lab.example.com

105-> node3

106->node4

Vim /etc/hosts

Now ping and check from workstation.

Scp this file to all others

Scp /etc/hosts server:/etc/hosts

Ctrl+alt+f2

Ssh-keygen

Ssh-copy-id devops@servera

Give sudo power to devops by vim /etc/sudoers   (devops   ALL=(ALL)   NOPASSWD: ALL)

Then scp

•••

Sequence:-

1)Make playbook folder (mkdir /home/devops/playbooks)

2)Make inventory folder (sudo mkdir /opt/devops/)

(Sudo mkdir (/opt/devops/dynamic)

3)Go into inventory folder (cd /opt/devops/dynamic)

4)Sudo wget all 3 files (

5)Chmod +x to 2 py files

6)Cd playbooks and cp /etc/ansible/ansible.cfg /home/devops/playbooks/

7)Open ansible.cfg and change path of inventory to /opt/devops/dynamic and uncomment privilege escalation of first 3 , and change remote_user = devops , and **host_key_checking** = false

Ansible all –list-hosts

Ansible all –a id

There will be 3 host files

(use SUDO everywhere for devops user)

*** sudo Mkdir /opt/devops/dynamic

Cd /opt/devops/dynamic (DOWNLOAD ALL FILES IN THIS FOLDER)

Sudo wget ftp://foundation0.example.com/pub/hosts

Sudo wget ftp://foundation0.example.com/pub/rabbit1.py

Sudo wget ftp://foundation0.example.com/pub/rabbit2.py   (total 3 files)

Chmod +x rabbits2.py   (giving executable power to python file)

Cp /etc/ansible/ansible.cf /home/devops/playbooks/ (conf file and playbook must be there in same file)

vim ansible.cfg (inventory = /opt/devops/dynamic*****)

DONT edit inventory(hosts) file because it will already be given

q.1)

sudo wget (3 files)   (INSDIE /OPT/DEVOPS/DYNAMIC)

sudo chmod +x a_rabbits2.py

sudo chmod +x b_rabbits1.py

dynamic inventory is read in alphabetical order

so rename the python host file

sudo mv rabbits1.py   **a**_rabbits1.py

sudo mv a_rabbits2.py   **b**_rabbits2.py

ansible bunny - -list-hosts (go into playbooks folder and check)

ansible marzipan - -list-hosts

go to ansible.cfg and uncomment and change timeout= 60

q.10)

vim install_role.yml (in playbooks folder)

- hosts: localhost

  Tasks:

    -get_url:

        url: ftp://192.168./pub/examfun.tar.gz

        dest: /home/devops/playbooks   (copy anywhere)

mkdir /home/devops/playbooks/role

 go to ansible.cfg line 59 uncomment and write   roles_path = /home/devops/playbooks/role
(shows where to install the app)

ansible-galaxy install examfun.tar.gz