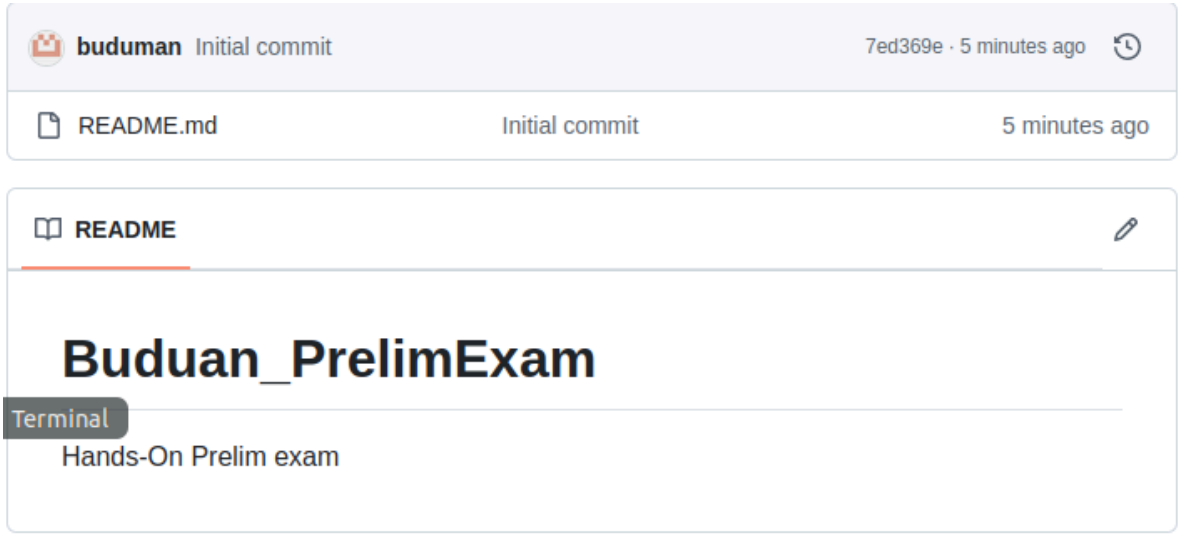
Tools Needed:

1. Control Node (CN) - 1
2. Manage Node (MN) - 1 Ubuntu
3. Manage Node (MN) - 1 CentOS

Procedure:

1. Note: You are required to create a document report of the steps you will do for this exam. All screenshots should be labeled and explained properly. LABELED AND EXPLAIN EACH CODE (PLAYBOOK) No explanation = Minus Points.
2. Create a repository in your GitHub account and label it as Surname_PrelimExam.



3. Clone your new repository in your CN.

```
qcacbuduan@Workstation:~$ git clone git@github.com:buduman/Buduan_PrelimExam.gi
t
Cloning into 'Buduan_PrelimExam'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (3/3), done.
qcacbuduan@Workstation:~$ ls
Buduan_PrelimExam  Desktop    examples.desktop  Public
CPE-212-Activity4  Documents  Music             Templates
CPE212_Buduan      Downloads  Pictures          Videos
qcacbuduan@Workstation:~$ cd Buduan_PrelimExam
qcacbuduan@Workstation:~/Buduan_PrelimExam$
```

4. In your CN, create an inventory file and ansible.cfg files.

```
  GNU nano 2.9.3                          inventory

192.168.56.12
192.168.56.13
```

```
qcacbuduan@Workstation:~/Buduan_PrelimExam$ cat ansible.cfg
[defaults]
inventory = inventory
remote_user = qcacbuduan
host_key_checking = True
private_key_file = ~/.ssh/ansible
```

5. Create an Ansible playbook that does the following with an input of a config.yaml file for both Manage Nodes
    - Installs the latest python3 and pip3

```
qcacbuduan@Workstation:~/Buduan_PrelimExam$ cat config.yml
---

- hosts: all
  become: true
  tasks:

  - name: Install the latest python3 and pip3
    apt:
      name: python3-pip
```

```
qcacbuduan@Workstation:~/Buduan_PrelimExam$ ansible-playbook --ask-become-pass
config.yml
SUDO password:

PLAY [all] *********************************************************************
*

TASK [Gathering Facts] *********************************************************
*
ok: [192.168.56.13]
ok: [192.168.56.12]

TASK [Install the latest python3 and pip3] *************************************
*
changed: [192.168.56.13]
changed: [192.168.56.12]
```

    - use pip3 as default pip

```
qcacbuduan@server2:~$ pip3 --version
pip 9.0.1 from /usr/lib/python3/dist-packages (python 3.6)
qcacbuduan@server2:~$ pip --version

Command 'pip' not found, but can be installed with:

apt install python-pip
```

```
qcacbuduan@server1:~$ pip3 --version
pip 9.0.1 from /usr/lib/python3/dist-packages (python 3.6)
```

Verifying pip version in manage nodes

- use python3 as default python

```
qcacbuduan@server2:~$ python3 --version
Python 3.6.9
```

```
qcacbuduan@server1:~$ python3 --version
Python 3.6.9
```

Verifying python version

```
- hosts: all
  become: true
  vars:
    ansible_python_interpreter: /usr/bin/python3
```

Edited config.yml to use python3 as default

- Install Java open-jdk

```
- name: Install Java open-jdk
  apt:
    name: openjdk-17-jre
    state: latest
```

```
TASK [install Java open-jdk] ***************************************************
*
changed: [192.168.56.12]
changed: [192.168.56.13]

PLAY RECAP *********************************************************************
*
192.168.56.12              : ok=3    changed=1    unreachable=0    failed=0
192.168.56.13              : ok=3    changed=1    unreachable=0    failed=0
```

- Install MariaDB as well as starting the server, create a database and a table using mariaDB and input one record into a table USING ANSIBLE ONLY

```
- name: Install MariaDB Server
  apt:
    name: mariadb-server

- name: Install MariaDB Client
  apt:
    name: mariadb-client
    state: latest

- name: Start MariaDB server
  service:
    name=mariadb
    enabled=true
    state=started
```

```
TASK [Install MariaDB Server] ***********************************************
*
ok: [192.168.56.12]
ok: [192.168.56.13]

TASK [Install MariaDB Client] ***********************************************
*
ok: [192.168.56.12]
ok: [192.168.56.13]

TASK [Start MariaDB server] *************************************************
*
ok: [192.168.56.13]
ok: [192.168.56.12]

PLAY RECAP ******************************************************************
*
192.168.56.12              : ok=6    changed=0    unreachable=0    failed=0
192.168.56.13              : ok=6    changed=0    unreachable=0    failed=0
```

```
qcacbuduan@server1: ~
File  Edit  View  Search  Terminal  Help
qcacbuduan@server1:~$ mariadb --version
mariadb  Ver 15.1 Distrib 10.1.48-MariaDB, for debian-linux-gnu (x86_64) using
readline 5.2
```

Verified installation of mariadb

- Create Motd containing the text defined by a variable defined in config.yaml file and if there is no variable input the default motd is "Ansible Managed node by (your user name)"
- Create a user with a variable defined in config.yaml

5. PUSH and COMMIT your PrelimExam in your GitHub repo

Github Repository: https://github.com/buduman/Buduan_PrelimExam.git

Conclusion:

After doing this Prelim Skills exam, I was able to realize that not only can you use ansible playbook to install programs to remote hosts, but also execute commands through them, such as creating database in mariadb, I learned that you can also create users within the remote hosts, you can also create motds which will appear when you run the playbook. I realized that there will be a lot to learn when controlling manage nodes.