

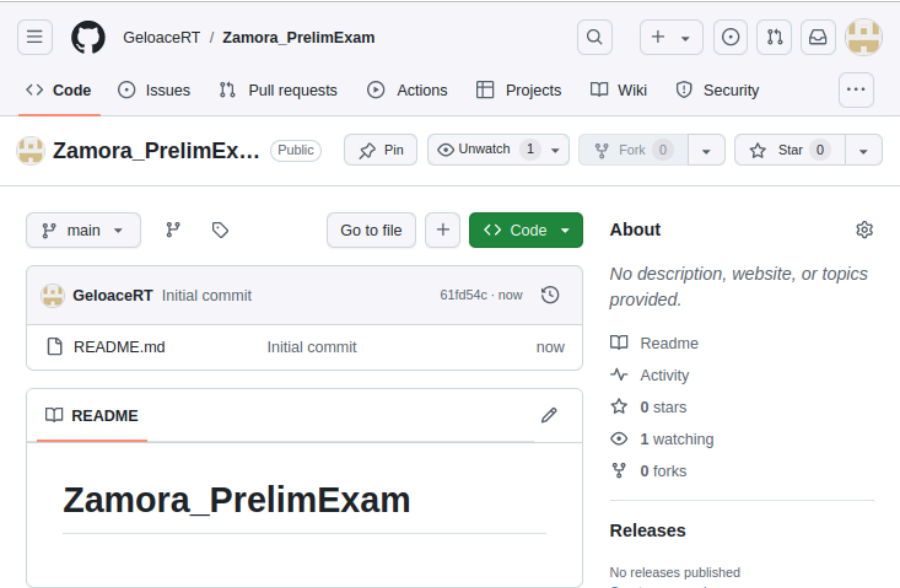
CPE212 - Hands-on Prelim Exam	
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Tools Needed:

- 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.

```
zamora_admin@workstation:~$ git clone git@github.com:GeloaceRT/Zamora_PrelimExam.git
Cloning into 'Zamora_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.
zamora_admin@workstation:~$ ls
Desktop      Music      TIP_CPE212_ZAMORA_Angelo
Documents    Pictures   TIP_HOA-4.1_ZAMORA_Angelo
Downloads    Public     Videos
examples.desktop  Templates Zamora_PrelimExam
zamora_admin@workstation:~$
```

Explanation: *git clone* command is used to copy or give access to your github repo using ssh key or connection.

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

Ansible.cfg

```
zamora_admin@workstation: ~/Zamora_PrelimExam
File Edit View Search Terminal Help
GNU nano 2.9.3 ansible.cfg

[defaults]
inventory = /home/zamora_admin/Zamora_PrelimExam/inventory
remote_user = zamora_admin
host_key_checking = True
```

Explanation: This code is more of a configuration or setup in determining the main user where is the location of your inventory

Inventory:

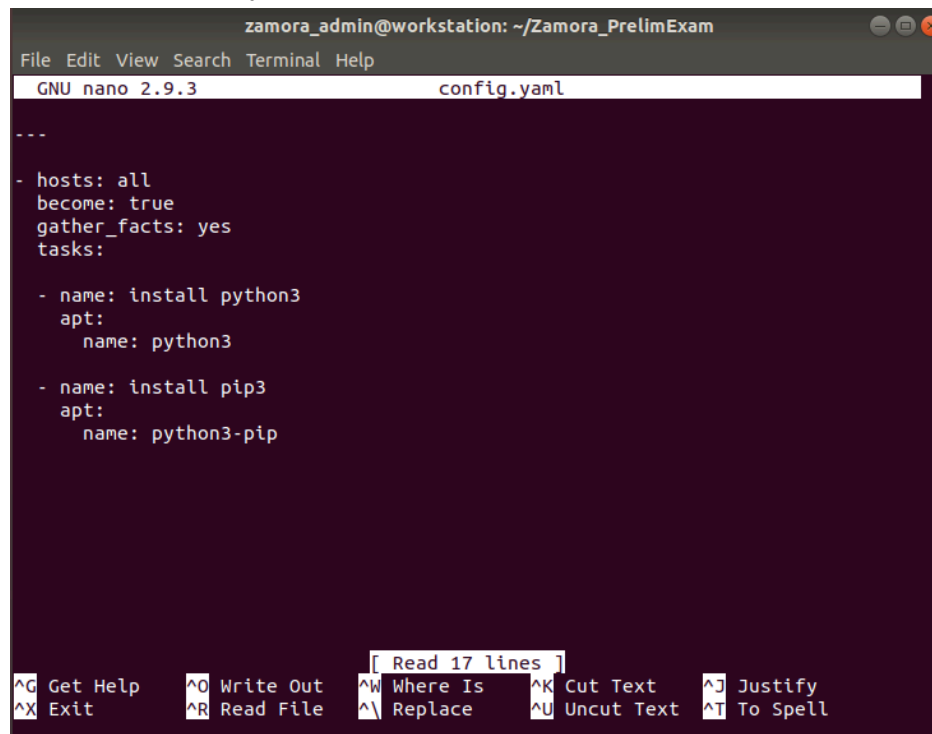
```
zamora_admin@workstation: ~/Zamora_PrelimExam
File Edit View Search Terminal Help
GNU nano 2.9.3 inventory

[servers]
192.168.56.108
192.168.56.109
```

Explanation: The inventory serves as a way to let the CN know where to ping or operate or what server is the CN is controlling.

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



The screenshot shows a terminal window titled 'zamora_admin@workstation: ~/Zamora_PrelimExam'. The window is running the GNU nano 2.9.3 editor, editing a file named 'config.yaml'. The content of the file is a Playbook configuration for Ansible. It starts with '---' followed by 'hosts: all', 'become: true', 'gather_facts: yes', and 'tasks:'. Under 'tasks', there are two tasks: one to 'install python3' using 'apt' with 'name: python3', and another to 'install pip3' using 'apt' with 'name: python3-pip'. At the bottom of the terminal, there is a status bar showing 'Read 17 lines' and various keyboard shortcuts like '^G Get Help', '^X Exit', '^O Write Out', '^R Read File', '^W Where Is', '^_ Replace', '^K Cut Text', '^U Uncut Text', '^J Justify', and '^T To Spell'.

```
zamora_admin@workstation: ~/Zamora_PrelimExam
File Edit View Search Terminal Help
GNU nano 2.9.3 config.yaml

---
- hosts: all
  become: true
  gather_facts: yes
  tasks:
    - name: install python3
      apt:
        name: python3
    - name: install pip3
      apt:
        name: python3-pip

^G Get Help  ^O Write Out ^W Where Is  ^K Cut Text  ^J Justify
^X Exit      ^R Read File ^_ Replace   ^U Uncut Text ^T To Spell
[ Read 17 lines ]
```

Explanation: What it does that we create a playbook to install python3 and pip3 into our servers server 1 and 2.

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

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

```
zamora_admin@server2:~$ python3 --version
Python 3.6.9
zamora_admin@server2:~$ pip3 --version
pip 9.0.1 from /usr/lib/python3/dist-packages (python 3.6)
zamora_admin@server2:~$
```

Working:

```
zamora_admin@workstation:~/Zamora_PrelimExam$ ansible-playbook --ask-become-pass config.yaml
SUDO password:

PLAY [all] *****
*

TASK [Gathering Facts] *****
*
ok: [192.168.56.108]
ok: [192.168.56.109]

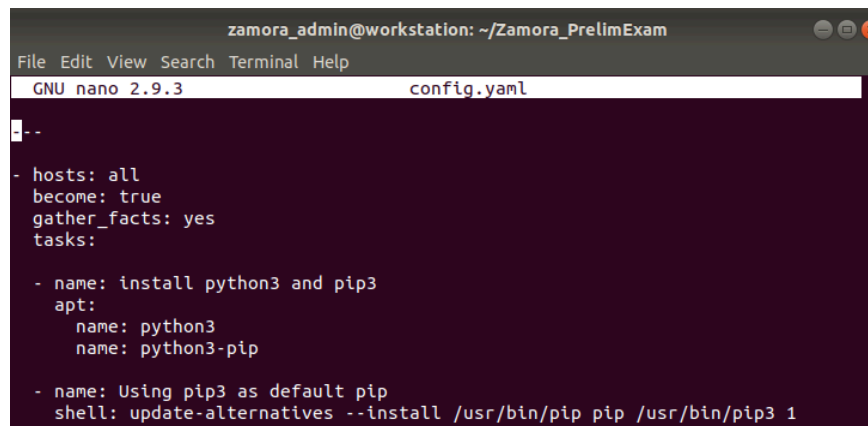
TASK [install python3] *****
*
ok: [192.168.56.108]
ok: [192.168.56.109]

TASK [install pip3] *****
*
ok: [192.168.56.108]
ok: [192.168.56.109]

PLAY RECAP *****
*
192.168.56.108      : ok=3    changed=0    unreachable=0    failed=0
192.168.56.109      : ok=3    changed=0    unreachable=0    failed=0

zamora_admin@workstation:~/Zamora_PrelimExam$
```

- use pip3 as default pip



```
zamora_admin@workstation: ~/Zamora_PrelimExam
File Edit View Search Terminal Help
GNU nano 2.9.3 config.yaml
--
- hosts: all
  become: true
  gather_facts: yes
  tasks:
    - name: install python3 and pip3
      apt:
        name: python3
        name: python3-pip
    - name: Using pip3 as default pip
      shell: update-alternatives --install /usr/bin/pip pip /usr/bin/pip3 1
```

Explanation: The next syntax making the pip3 as the default pip of the VM

Machine via package install in its location.

```
PLAY [all] *****
*
TASK [Gathering Facts] *****
*
ok: [192.168.56.108]
ok: [192.168.56.109]

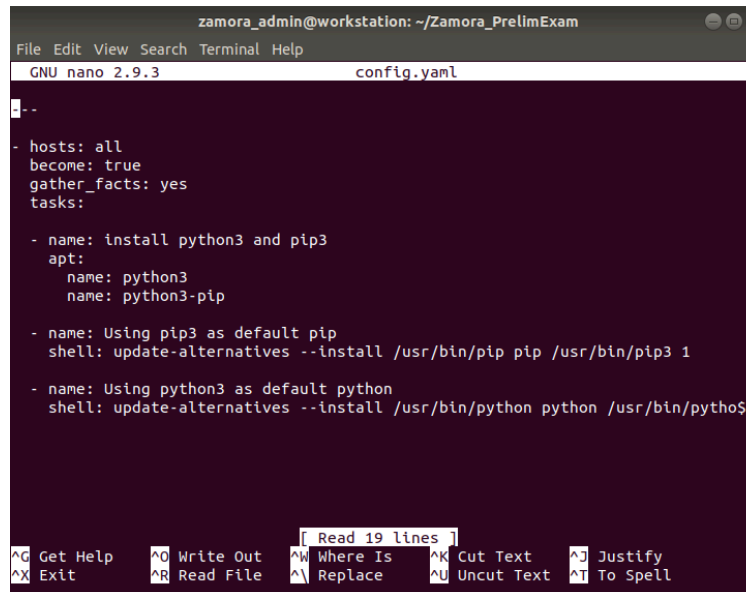
TASK [install python3 and pip3] *****
*
ok: [192.168.56.108]
ok: [192.168.56.109]

TASK [Using pip3 as default pip] *****
*
changed: [192.168.56.108]
changed: [192.168.56.109]

PLAY RECAP *****
192.168.56.108      : ok=3    changed=1    unreachable=0    failed=0
192.168.56.109      : ok=3    changed=1    unreachable=0    failed=0

zamora_admin@workstation:~/Zamora_PrelimExam$ sudo nano config.yaml
zamora_admin@workstation:~/Zamora_PrelimExam$
```

- use python3 as default python



```
zamora_admin@workstation: ~/Zamora_PrelimExam
File Edit View Search Terminal Help
GNU nano 2.9.3 config.yaml
--
- hosts: all
  become: true
  gather_facts: yes
  tasks:
    - name: install python3 and pip3
      apt:
        name: python3
        name: python3-pip
    - name: Using pip3 as default pip
      shell: update-alternatives --install /usr/bin/pip pip /usr/bin/pip3 1
    - name: Using python3 as default python
      shell: update-alternatives --install /usr/bin/python python /usr/bin/pytho$

Read 19 lines
^G Get Help  ^O Write Out  ^W Where Is   ^K Cut Text   ^J Justify
^X Exit      ^R Read File  ^\ Replace    ^U Uncut Text ^T To Spell
```

Explanation: The next syntax making the python3 as the default python of the VM Machine via package install in its location.

```
TASK [Gathering Facts] *****
*
ok: [192.168.56.109]
ok: [192.168.56.108]

TASK [install python3 and pip3] *****
*
ok: [192.168.56.109]
ok: [192.168.56.108]

TASK [Using pip3 as default pip] *****
*
changed: [192.168.56.109]
changed: [192.168.56.108]

TASK [Using python3 as default python] *****
*
changed: [192.168.56.108]
changed: [192.168.56.109]

PLAY RECAP *****
192.168.56.108      : ok=4    changed=2    unreachable=0    failed=0
192.168.56.109      : ok=4    changed=2    unreachable=0    failed=0

zamora_admin@workstation:~/Zamora_PrelimExam$
```

- Install Java open-jdk

```

zamora_admin@workstation: ~/Zamora_PrelimExam
File Edit View Search Terminal Help
GNU nano 2.9.3 config.yaml
---
- hosts: all
  become: true
  gather_facts: yes
  tasks:
    - name: install python3 and pip3
      apt:
        name: python3
        name: python3-pip
    - name: Using pip3 as default pip
      shell: update-alternatives --install /usr/bin/pip pip /usr/bin/pip3 1
    - name: Using python3 as default python
      shell: update-alternatives --install /usr/bin/python python /usr/bin/pytho$
    - name: install Java open-jdk
      apt:
        name: openjdk-11-jdk
  
```

Explanation: The syntax above here is that I added a syntax to install the Java open-jdk.

```

TASK [install python3 and pip3] *****
*
ok: [192.168.56.109]
ok: [192.168.56.108]

TASK [Using pip3 as default pip] *****
*
changed: [192.168.56.109]
changed: [192.168.56.108]

TASK [Using python3 as default python] *****
*
changed: [192.168.56.108]
changed: [192.168.56.109]

TASK [install Java open-jdk] *****
*
ok: [192.168.56.108]
ok: [192.168.56.109]

PLAY RECAP *****
*
192.168.56.108      : ok=5    changed=2    unreachable=0    failed=0
192.168.56.109      : ok=5    changed=2    unreachable=0    failed=0

zamora_admin@workstation:~/Zamora_PrelimExam$
  
```

```

zamora_admin@server1:~$ java --version
openjdk 11.0.19 2023-04-18
OpenJDK Runtime Environment (build 11.0.19+7-post-Ubuntu-0ubuntu118.04.1)
OpenJDK 64-Bit Server VM (build 11.0.19+7-post-Ubuntu-0ubuntu118.04.1, mixed mo
de, sharing)
zamora_admin@server1:~$
  
```

```

zamora_admin@server2:~$ java --version
openjdk 11.0.19 2023-04-18
OpenJDK Runtime Environment (build 11.0.19+7-post-Ubuntu-0ubuntu118.04.1)
OpenJDK 64-Bit Server VM (build 11.0.19+7-post-Ubuntu-0ubuntu118.04.1, mixed mo
de, sharing)
zamora_admin@server2:~$
  
```

- 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

```

zamora_admin@workstation: ~/Zamora_PrelimExam
File Edit View Search Terminal Help
GNU nano 2.9.3 config.yaml Modified

- name: Using pip3 as default pip
  shell: update-alternatives --install /usr/bin/pip pip /usr/bin/pip3 1

- name: Using python3 as default python
  shell: update-alternatives --install /usr/bin/python python /usr/bin/pytho$

- name: install Java open-jdk
  apt:
    name: openjdk-11-jdk

- name: install MariaDB
  apt:
    name: mariadb-server

```

```

zamora_admin@server1:~$ mariadb --version
mariadb Ver 15.1 Distrib 10.1.48-MariaDB, for debian-linux-gnu (x86_64) using
readline 5.2

```

```

zamora_admin@server2:~$ mariadb --version
mariadb Ver 15.1 Distrib 10.1.48-MariaDB, for debian-linux-gnu (x86_64) using
readline 5.2

```

```

- name: start mariadb
  service:
    name: mariadb
    enabled: true

```

Explanation: This code starts the mariadb service

```

TASK [install MariaDB] *****
*
ok: [192.168.56.108]
ok: [192.168.56.109]

TASK [start mariadb] *****
*
ok: [192.168.56.108]
ok: [192.168.56.109]

PLAY RECAP *****
*
192.168.56.108      : ok=7    changed=2    unreachable=0    failed=0
192.168.56.109      : ok=7    changed=2    unreachable=0    failed=0

zamora_admin@workstation:~/Zamora_PrelimExam$ sudo nano config.yaml
zamora_admin@workstation:~/Zamora_PrelimExam$

```

- 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)"


```
- name: Message
  copy:
    content: "Ansible Manage Node by Zamora"
    dest: /etc/motd
```

```
TASK [Message] *****
*
changed: [192.168.56.108]
changed: [192.168.56.109]

PLAY RECAP *****
*
192.168.56.108      : ok=8    changed=3    unreachable=0    failed=0
192.168.56.109      : ok=8    changed=3    unreachable=0    failed=0

zamora_admin@workstation:~/Zamora_PrelimExam$
```

```
zamora_admin@server1:/etc$ cat motd
Ansible Manage Node by Zamora
```

```
zamora_admin@server2:~$ cat /etc/motd
Ansible Manage Node by Zamora
```

- Create a user with a variable defined in config.yaml

```
- name: User
  user:
    name: angelo
    state: present
    shell: /bin/bash
    comment: "PRELIM ZAMORA"
    createhome: yes
```

Explanation: This creates a user via playbook instead of doing it in the bash or shell ansible can create a user as well.

```
TASK [User] *****
*
changed: [192.168.56.108]
changed: [192.168.56.109]

PLAY RECAP *****
*
192.168.56.108      : ok=9    changed=3    unreachable=0    failed=0
192.168.56.109      : ok=9    changed=3    unreachable=0    failed=0

zamora_admin@workstation:~/Zamora_PrelimExam$
```

```
angelo:x:1001:1001:PRELIM ZAMORA:/home/angelo:/bin/bash
zamora_admin@server2:~$
```

```
angelo:x:1001:1001:PRELIM ZAMORA:/home/angelo:/bin/bash
zamora_admin@server1:~$
```

5. PUSH and COMMIT your PrelimExam in your GitHub repo

```
zamora_admin@workstation:~/Zamora_PrelimExam$ git add ansible.cfg config.yaml i
nventory
zamora_admin@workstation:~/Zamora_PrelimExam$ git commit -m "Prelims"
[main d482596] Prelims
 3 files changed, 50 insertions(+)
 create mode 100644 ansible.cfg
 create mode 100644 config.yaml
 create mode 100644 inventory
zamora_admin@workstation:~/Zamora_PrelimExam$ git push
Counting objects: 5, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (4/4), done.
Writing objects: 100% (5/5), 840 bytes | 840.00 KiB/s, done.
Total 5 (delta 0), reused 0 (delta 0)
To github.com:GeloaceRT/Zamora_PrelimExam.git
 61fd54c..d482596  main -> main
zamora_admin@workstation:~/Zamora_PrelimExam$
```

GitHub Link: https://github.com/GeloaceRT/Zamora_PrelimExam

6. Your document report should be submitted here.

7. For your prelim exam to be counted, please paste your repository link here. (Failure to submit will result in ZERO)

8. NO USE OF EXTERNAL WEBSITES SUCH AS , REDDIT, CHATGPT, GITHUB, GEMINI, CLAUDE, FORUMS, AND DOCUMENTATIONS. FAILURE TO COMPLY WITH RESULT IN ZERO.