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Section: CPE31S2	Instructor: Engr. Robin Valenzuela

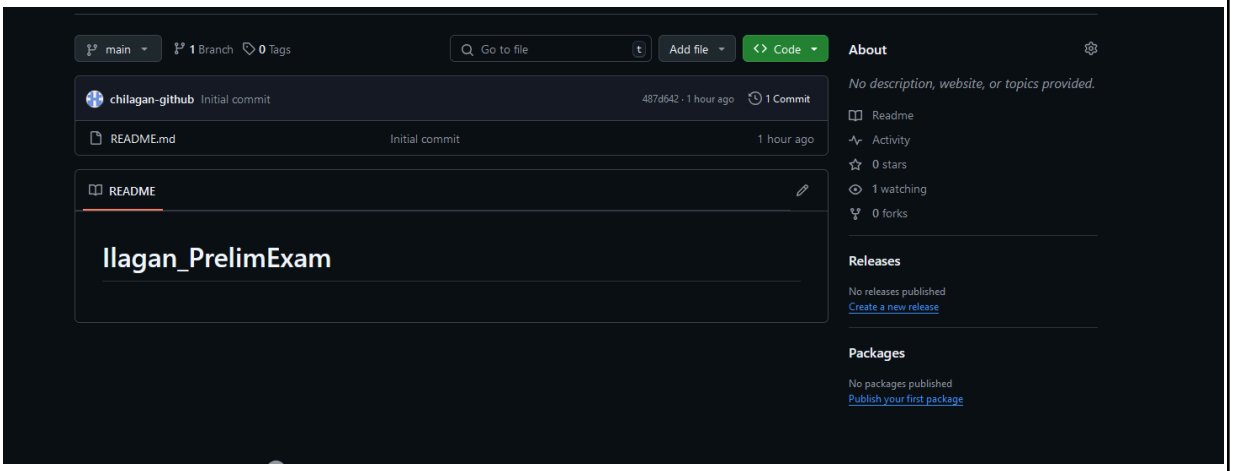
PRELIMINARY EXAMINATION

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.

```
hideki@workstation:~$ git clone git@github.com:chilagan-github/Ilagan_PrelimExam
.git
Cloning into 'Ilagan_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.
```

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

```
hideki@workstation:~/Ilagan_PrelimExam$ ls
ansible.cfg  inventory  README.md
```

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

Code:	hideki@workstation: ~/Ilagan_PrelimExam File Edit View Search Terminal Help GNU nano 2.9.3 config.yaml --- - hosts: all become: true tasks: - name: Install latest python and pip3 apt: name: python3 name: python3-pip update_cache: yes
Input:	hideki@workstation:~/Ilagan_PrelimExam$ ansible-playbook --ask-become-pass config.yaml
Output:	hideki@workstation:~/Ilagan_PrelimExam$ ansible-playbook --ask-become-pass config.yaml SUDO password: [WARNING]: While constructing a mapping from /home/hideki/Ilagan_PrelimExam/config.yaml, line 8, column 7, found a duplicate dict key (name). Using last defined value only. PLAY [all] *** TASK [Gathering Facts] *** ok: [192.168.56.106] ok: [192.168.56.107] TASK [Install latest python3 and pip3] *** ok: [192.168.56.106] ok: [192.168.56.107] PLAY RECAP *** 192.168.56.106 : ok=2 changed=0 unreachable=0 failed=0 192.168.56.107 : ok=2 changed=0 unreachable=0 failed=0

This process was performed in order to install the latest python and pip3 in both managed nodes. Python3 was installed along with the pip3.

```
hideki@server1:~$ pip3 --version
pip 9.0.1 from /usr/lib/python3/dist-packages (python 3.6)
hideki@server1:~$
hideki@server1:~$ python3 --version
Python 3.6.9
```

Screenshot of the server showing python3 and pip3.

- use pip3 as default pip

```
TASK [use pip3 as default pip] ************************************************************************************************
changed: [192.168.56.106]
changed: [192.168.56.107]
```

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

In this part of the examination, pip3 was used as the default pip for the servers. The first directory was the directory of the pip, while the second directory provided was the directory for the pip3

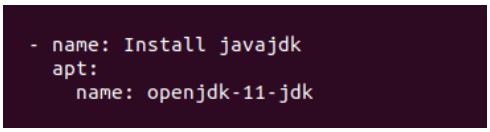
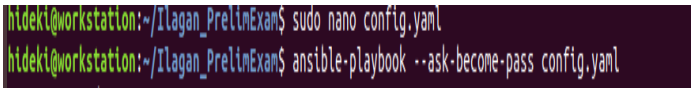
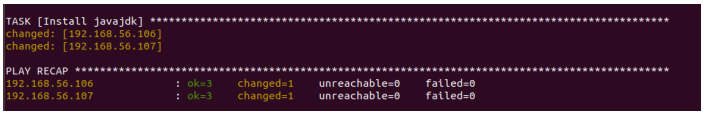
- use python3 as default python

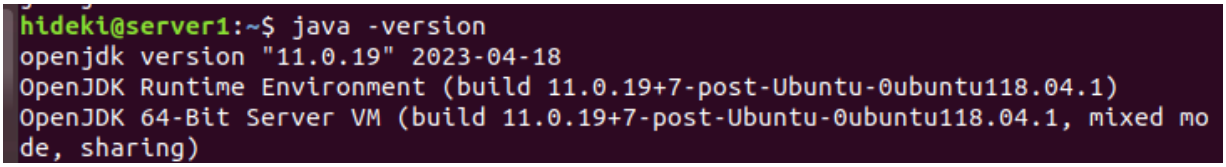
```
TASK [use python3 as default python] ******************************************************************************************
changed: [192.168.56.107]
changed: [192.168.56.106]
```

```
- name: use python3 as default python
  shell: update-alternatives --install /usr/bin/python python /usr/bin/python3 1
```

Similar to using the pip3 as default pip, python3 was changed as default python that will be used in the servers with almost the same process, the only difference between the activity above is its directory.

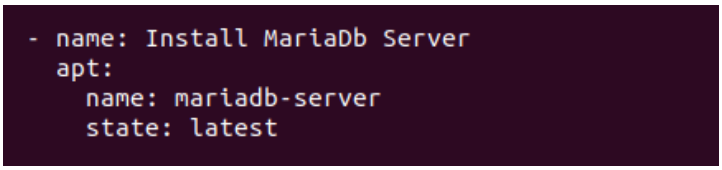
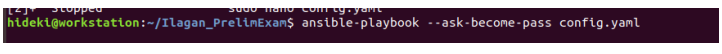
- Install Java open-jdk

Code:	
Input:	
Output:	



This process, config.yaml file was modified again in order to add an automation to install javajdk. It took a longer time than installing the latest version of python3 and pip3. Screenshot above also showed that java was installed on the server.

- 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

Code:	
Input:	
Output:	

```
hideki@server1:~$ mariadb -V
mariadb  Ver 15.1 Distrib 10.1.48-MariaDB, for debian-linux-gnu
readline 5.2
```

Mariadb was installed in the servers using its package inside the ansible. The state latest was added in order to install the latest package of the software.

- 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)"

```
TASK [Message of the Day] ******************************************************
changed: [192.168.56.107]
changed: [192.168.56.106]

PLAY RECAP *********************************************************************
192.168.56.106             : ok=5    changed=1    unreachable=0    failed=0
192.168.56.107             : ok=5    changed=1    unreachable=0    failed=0
```

```
- name: Message of the Day
  copy:
    content: "Ansible Managed Node by hideki"
    dest: /etc/motd
```

```
hideki@server1:~$ cat /etc/motd
Ansible Managed Node by hidekihideki@server1:~$
```

We created an motd in this part that can be accessed by servers using the cat command together with the destination of the file whichwas the /etc/motd directory.

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

```
- name: User
  user:
   name: "carlo"
   state: present
   shell: /bin/bash
   comment: "user is created"
   createhome: yes
```

The last part of the activity was creating a user with a variable defined. Below is a screenshot that user carlo was shown in servers

```
hideki@server1:~$ ansible localhost -m command -a "id carlo"
 [WARNING]: provided hosts list is empty, only localhost is available. Note
that the implicit localhost does not match 'all'

localhost | SUCCESS | rc=0 >>
uid=1002(carlo) gid=1002(carlo) groups=1002(carlo)
```

5. PUSH and COMMIT your PrelimExam in your GitHub repo

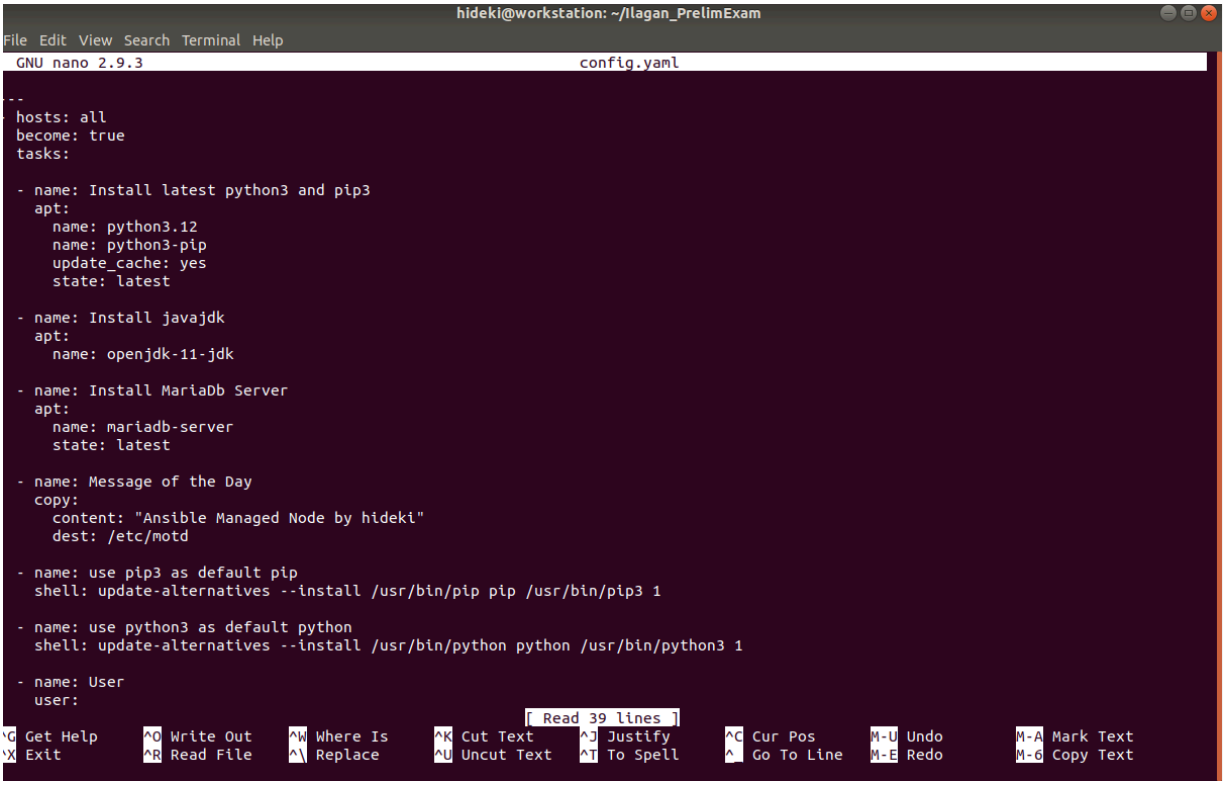
6. Your document report should be submitted here.

```
hideki@workstation:~/Ilagan_PrelimExam$ ls
ansible.cfg  config.retry  config.yaml  inventory  README.md
hideki@workstation:~/Ilagan_PrelimExam$ git add ansible.cfg
hideki@workstation:~/Ilagan_PrelimExam$ git add config.retry
hideki@workstation:~/Ilagan_PrelimExam$ git add config.yaml
hideki@workstation:~/Ilagan_PrelimExam$ git add inventory
hideki@workstation:~/Ilagan_PrelimExam$ git add README.md
hideki@workstation:~/Ilagan_PrelimExam$ git push
Everything up-to-date
hideki@workstation:~/Ilagan_PrelimExam$ git commit -m "PRELIM EXAM"
[main eacc369] PRELIM EXAM
 4 files changed, 48 insertions(+)
 create mode 100644 ansible.cfg
 create mode 100644 config.retry
 create mode 100644 config.yaml
 create mode 100644 inventory
hideki@workstation:~/Ilagan_PrelimExam$ git push
Counting objects: 6, done.
Delta compression using up to 2 threads.
Compressing objects: 100% (5/5), done.
Writing objects: 100% (6/6), 891 bytes | 891.00 KiB/s, done.
Total 6 (delta 0), reused 0 (delta 0)
```

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.

Config.yaml




```
- name: User
  user:
   name: "carlo"
   state: present
   shell: /bin/bash
   comment: "user is created"
   createhome: yes
```