| Hands-on Prelim Exam	
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CPE212 - CPE31S2	Engr. Robin Valenzuela

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
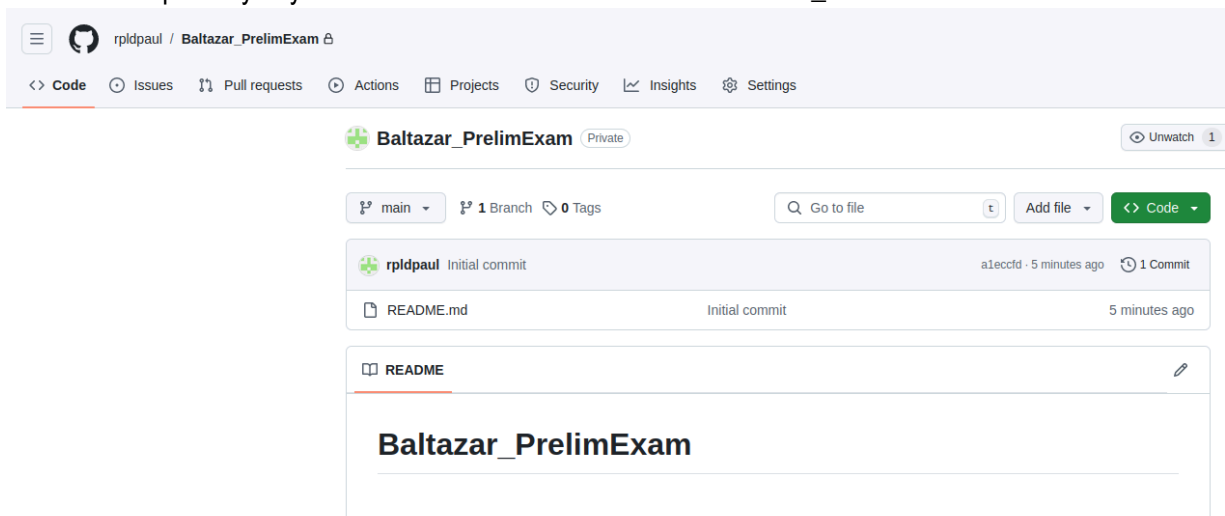
A new repository is created in GitHub and Labeled as Baltazar_PrelimExam.

3. Clone your new repository in your CN.

Using the command git clone <github link>, the repository is cloned into the machine as a directory.

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

```
paul_eimar@Workstation:~/Baltazar_PrelimExam$ sudo nano inventory
paul_eimar@Workstation:~/Baltazar_PrelimExam$ sudo nano ansible.cfg
paul_eimar@Workstation:~/Baltazar_PrelimExam$ ls
ansible.cfg   inventory   README.md
```

Using the command sudo nano <filename>, The inventory file and ansible.cfg are created in the repository directory.

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
- use pip3 as default pip
- use python3 as default python
- Install Java open-jdk
- 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
- 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

```
paul_eimar@Workstation:~/Baltazar_PrelimExam$ cat config.yaml
---
- hosts: all
  become: true
  vars:
    ansible_python_interpreter: /usr/bin/python3

  tasks:

  - name: install python3 package
    apt:
      name: python3

  - name: install python3-pip package
    apt:
      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
    shell: update-alternatives --install /usr/bin/python python /usr/bin/python3 1

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

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

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

  - name: User
    user:
      name: rpldpaul
      state: present
      shell: /bin/bash
      comment: "Prelim Exam Task"
      createhome: yes

  - name: MOTD
    copy:
      content: "Ansible Managed by paul_eimar"
      dest: /etc/motd
```

This is the screenshot of all the functioning commands written in config.yaml

5. PUSH and COMMIT your PrelimExam in your GitHub repo

```
paul_eimar@Workstation:~/Baltazar_PrelimExam$ git add ansible.cfg
paul_eimar@Workstation:~/Baltazar_PrelimExam$ git add config.retry
paul_eimar@Workstation:~/Baltazar_PrelimExam$ git add config.yaml
paul_eimar@Workstation:~/Baltazar_PrelimExam$ git add inventory
paul_eimar@Workstation:~/Baltazar_PrelimExam$ git commit -m "Paul Eimar R. Baltazar PRELIM EXAM"
[main f528045] Paul Eimar R. Baltazar PRELIM EXAM
 4 files changed, 59 insertions(+)
 create mode 100644 ansible.cfg
 create mode 100644 config.retry
 create mode 100644 config.yaml
 create mode 100644 inventory
paul_eimar@Workstation:~/Baltazar_PrelimExam$ git push
Counting objects: 6, done.
Delta compression using up to 6 threads.
Compressing objects: 100% (4/4), done.
Writing objects: 100% (6/6), 931 bytes | 931.00 KiB/s, done.
Total 6 (delta 0), reused 0 (delta 0)
To github.com:rpldpaul/Baltazar_PrelimExam.git
   a1eccfd..f528045  main -> main
paul_eimar@Workstation:~/Baltazar_PrelimExam$ git status
On branch main
Your branch is up to date with 'origin/main'.

nothing to commit, working tree clean
```

6. Your document report should be submitted here.

1. Installs the latest python3 and pip3

Command	Execution

``---
- hosts: all
  become: true
  vars:
    ansible_python_interpreter: /usr/bin/python3
 	
  tasks:
 	
  - name: install python3 package
    apt:
      name: python3
 	
  - name: install python3-pip package
    apt:
      name: python3-pip```
	``TASK [install python3 package] ***
	ok: [192.168.56.107]
	ok: [192.168.56.106]
	
	TASK [install python3-pip package]
	ok: [192.168.56.107]
	ok: [192.168.56.106]```

Server1	**Server2**
```paul_eimar@Server1:~$ python --version Python 3.6.9```	```paul_eimar@Server2:~$ python --version Python 3.6.9```

These commands install the packages python3 and python3-pip.

2. Use pip3 as default pip
3. Use python3 as default python

Command	Execution
```- name: using pip3 as default pip``` ``` shell: update-alternatives --install /usr/bin/pip pip /usr/bin/pip3 1``` ```- name: using python3 as default``` ``` shell: update-alternatives --install /usr/bin/python python /usr/bin/python3 1```	```TASK [using pip3 as default pip]``` ```changed: [192.168.56.106]``` ```changed: [192.168.56.107]``` ```TASK [using python3 as default]``` ```changed: [192.168.56.107]``` ```changed: [192.168.56.106]```
Server 1	**Server 2**
```paul_eimar@Server1:~$ python --version``` ```Python 3.6.9``` ```paul_eimar@Server1:~$ pip3 --version``` ```pip 9.0.1 from /usr/lib/python3/dist-packages (python 3.6)```	```paul_eimar@Server2:~$ python --version``` ```Python 3.6.9``` ```paul_eimar@Server2:~$ pip3 --version``` ```pip 9.0.1 from /usr/lib/python3/dist-packages (python 3.6)```

The update-alternatives command moves the default installation of the python packages so the newly installed packages of python3 and pip are recognized by default

4. Install Java open-jdk

Command	Execution
```- name: install Java open-jdk``` ``` apt:``` ``` name: openjdk-11-jdk```	```TASK [install Java open-jdk]``` ```ok: [192.168.56.107]``` ```ok: [192.168.56.106]```
Server 1	**Server 2**
```paul_eimar@Server1:~$ java -version``` ```openjdk version "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 mode, sharing)```	```paul_eimar@Server2:~$ java -version``` ```openjdk version "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 mode, sharing)```

5. 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

Command	Execution

- name: install MariaDB Server
  apt:
    name: mariadb-server
 	
- name: start MariaDB
  service:
    name: mariadb
    enabled: true
	TASK [install MariaDB Server] *
	ok: [192.168.56.107]
	ok: [192.168.56.106]
	
	TASK [start MariaDB] **********
	ok: [192.168.56.107]
	ok: [192.168.56.106]

Server 1	Server 2

paul_eimar@Server1:~$ sudo systemctl status mariadb
[sudo] password for paul_eimar:
● mariadb.service - MariaDB 10.1.48 database server
  Loaded: loaded (/lib/systemd/system/mariadb.service; enabled; vendor preset:
  Active: active (running) since Wed 2024-09-18 08:56:36 +08; 1h 21min ago
    Docs: man:mysqld(8)
      https://mariadb.com/kb/en/library/systemd/
 Main PID: 10931 (mysqld)
  Status: "Taking your SQL requests now..."
   Tasks: 27 (limit: 4915)
  CGroup: /system.slice/mariadb.service
      └─10931 /usr/sbin/mysqld
 	
Sep 18 08:56:38 Server1 /etc/mysql/debian-start[10964]: information_schema
Sep 18 08:56:38 Server1 /etc/mysql/debian-start[10964]: mysql
Sep 18 08:56:38 Server1 /etc/mysql/debian-start[10964]: performance_schema
Sep 18 08:56:38 Server1 /etc/mysql/debian-start[10964]: Phase 6/7: Checking and
Sep 18 08:56:38 Server1 /etc/mysql/debian-start[10964]: Processing databases
Sep 18 08:56:38 Server1 /etc/mysql/debian-start[10964]: information_schema
Sep 18 08:56:38 Server1 /etc/mysql/debian-start[10964]: performance_schema
Sep 18 08:56:38 Server1 /etc/mysql/debian-start[10964]: Phase 7/7: Running 'FLUS
Sep 18 08:56:38 Server1 /etc/mysql/debian-start[10964]: OK
Sep 18 08:56:38 Server1 /etc/mysql/debian-start[11388]: Triggering myisam-recove
	paul_eimar@Server2:~$ sudo systemctl status mariadb
	[sudo] password for paul_eimar:
	● mariadb.service - MariaDB 10.1.48 database server
	  Loaded: loaded (/lib/systemd/system/mariadb.service; enabled; vendor preset:
	  Active: active (running) since Wed 2024-09-18 08:55:47 +08; 1h 21min ago
	    Docs: man:mysqld(8)
	      https://mariadb.com/kb/en/library/systemd/
	 Main PID: 10945 (mysqld)
	  Status: "Taking your SQL requests now..."
	   Tasks: 27 (limit: 4915)
	  CGroup: /system.slice/mariadb.service
	      └─10945 /usr/sbin/mysqld
	
	Sep 18 08:55:47 Server2 /etc/mysql/debian-start[10979]: Processing databases
	Sep 18 08:55:47 Server2 /etc/mysql/debian-start[10979]: information_schema
	Sep 18 08:55:47 Server2 /etc/mysql/debian-start[10979]: mysql
	Sep 18 08:55:47 Server2 /etc/mysql/debian-start[10979]: performance_schema
	Sep 18 08:55:47 Server2 /etc/mysql/debian-start[10979]: Phase 6/7: Checking and
	Sep 18 08:55:47 Server2 /etc/mysql/debian-start[10979]: Processing databases
	Sep 18 08:55:47 Server2 /etc/mysql/debian-start[10979]: information_schema
	Sep 18 08:55:47 Server2 /etc/mysql/debian-start[10979]: performance_schema
	Sep 18 08:55:47 Server2 /etc/mysql/debian-start[10979]: Phase 7/7: Running 'FLUS
	Sep 18 08:55:47 Server2 /etc/mysql/debian-start[10979]: OK

6. 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)"

Command	Execution

``- name: MOTD
  copy:
    content: "Ansible Managed by paul_eimar"
    dest: /etc/motd```
	``TASK [MOTD] *********
	ok: [192.168.56.106]
	ok: [192.168.56.107]```

Server 1	Server 2
```paul_eimar@Workstation:~/Baltazar_PrelimExam$ ssh server1 Welcome to Ubuntu 18.04.6 LTS (GNU/Linux 5.4.0-150-generic x86_64) * Documentation: https://help.ubuntu.com * Management: https://landscape.canonical.com * Support: https://ubuntu.com/pro Expanded Security Maintenance for Infrastructure is not enabled. 0 updates can be applied immediately. 218 additional security updates can be applied with ESM Infra. Learn more about enabling ESM Infra service for Ubuntu 18.04 at https://ubuntu.com/18-04 New release '20.04.6 LTS' available. Run 'do-release-upgrade' to upgrade to it. Your Hardware Enablement Stack (HWE) is supported until April 2023. Ansible Managed by paul_eimar Last login: Wed Sep 18 10:05:20 2024 from 192.168.56.108```	```paul_eimar@Workstation:~/Baltazar_PrelimExam$ ssh server2 Welcome to Ubuntu 18.04.6 LTS (GNU/Linux 5.4.0-150-generic x86_64) * Documentation: https://help.ubuntu.com * Management: https://landscape.canonical.com * Support: https://ubuntu.com/pro Expanded Security Maintenance for Infrastructure is not enabled. 0 updates can be applied immediately. 218 additional security updates can be applied with ESM Infra. Learn more about enabling ESM Infra service for Ubuntu 18.04 at https://ubuntu.com/18-04 New release '20.04.6 LTS' available. Run 'do-release-upgrade' to upgrade to it. Your Hardware Enablement Stack (HWE) is supported until April 2023. Ansible Managed by paul_eimar Last login: Wed Sep 18 10:05:20 2024 from 192.168.56.108```

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

Command	Execution

``- name: User
  user:
    name: rpldpaul
    state: present
    shell: /bin/bash
    comment: "Prelim Exam Task"
    createhome: yes```
	``TASK [User] *********
	ok: [192.168.56.107]
	ok: [192.168.56.106]```

Server 1	Server 2
``paul_eimar@Server1:~$ ansible localhost -m command -a "id rpldpaul" [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(rpldpaul) gid=1002(rpldpaul) groups=1002(rpldpaul)```	```paul_eimar@Server2:~$ ansible localhost -m command -a "id rpldpaul" [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(rpldpaul) gid=1002(rpldpaul) groups=1002(rpldpaul)```

7. For your prelim exam to be counted, please paste your repository link here. (Failure to submit will result in ZERO)
https://github.com/rpldpaul/Baltazar_PrelimExam

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