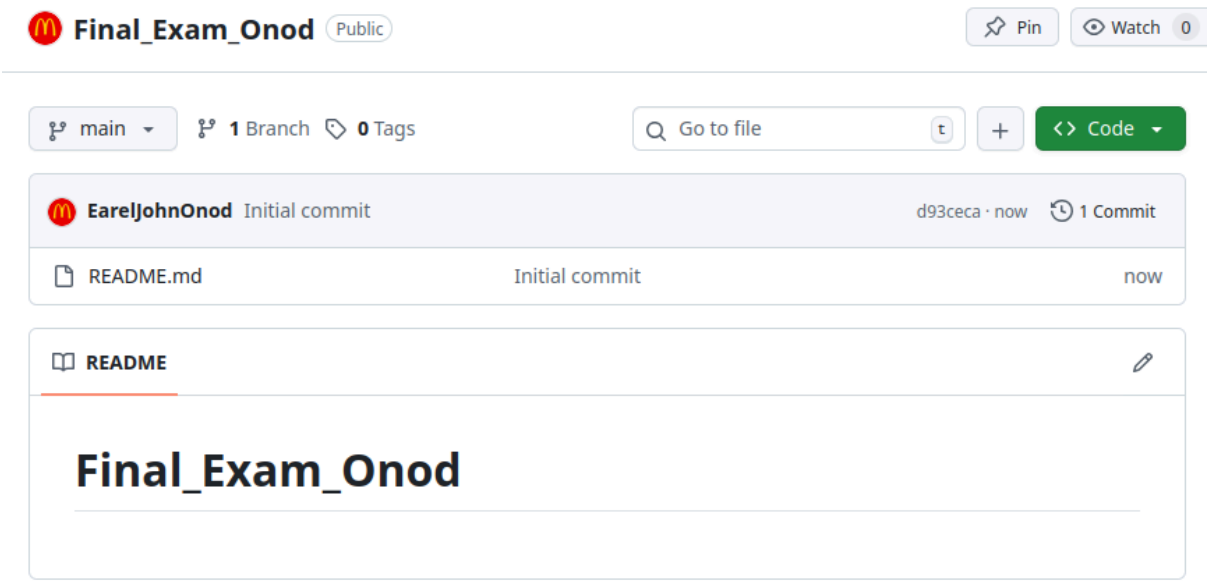
Tools Needed:

1. VM with Ubuntu, CentOS and Ansible installed

2. Web browser

Procedure:

1. Create a repository and label it as "Final_Exam_Surname"



2. Clone your new repository in your VM

```
try@controller:~$ git clone "https://github.com/EarelJohnOnod/Final_Exam_Onod"
Cloning into 'Final_Exam_Onod'...
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.
```

3. Create an Ansible playbook that does the following with an input of a config.yaml file and structure inventory file.

3.1 Install and configure one enterprise service that can be installed in Debian and Centos servers

3.2 Install and configure one monitoring tool that can be installed in Debian and Centos servers (if it is a stack there should be option of different host)

4.4 Change Motd as "Ansible Managed by <username>"

try@controller: ~/Final_Exam_Onod

GNU nano 7.2 config.yml

```
enterprise_service: apache
monitoring_tool: node_exporter
motd_user: host
```

try@controller: ~/Final_Exam_Onod

GNU nano 7.2 inventory.ini

```
[all]
localhost ansible_connection=local
```

try@controller: ~/Final_Exam_Onod

GNU nano 7.2 install.yml

```
---
- name: setup
  hosts: all
  become: true
  vars_files:
    - ./config.yaml

  tasks:

    - name: cache check
      ansible.builtin.package:
        update_cache: yes

    - name: install apache
      ansible.builtin.package:
        name: apache2
        state: present

    - name: start apache
      ansible.builtin.service:
        name: apache2
        state: started
        enabled: yes
```

try@controller: ~/Final_Exam_Onod

GNU nano 7.2 install.yml

```
    - name: donwload node exporter
      ansible.builtin.get_url:
        url: "https://github.com/prometheus/node_exporter/releases/download/v1.8.1/node_exporter-1.8.1.linux-amd64.tar.>
        dest: /tmp/node_exporter.tar.gz
        mode: '0644'

    - name: extract node exporter
      ansible.builtin.unarchive:
        src: /tmp/node_exporter.tar.gz
        dest: /usr/local/bin/
        remote_src: yes
        extra_opts: [--strip-components=1]

    - name: create service for node exporter
      ansible.builtin.copy:
```

```
try@controller: ~/Final_Exam_Onod
 GNU nano 7.2                                          install.yml
      dest: /etc/systemd/system/node_explorer.service
      content: |
        [Unit]
        Description=Prometheus Node Exporter
        After=network.target

        [Service]
        ExecStart=/usr/local/bin/node_exporter
        User=nobody
        Group=nogroup

        [Install]
        WantedBy=multi-user.target

  - name: start node exporter
    ansible.builtin.systemd:
      name: node_exporter
      state: started
      enabled: yes

  - name: update motd
    ansible.builtin.copy:
      dest: /etc/motd
      content: "Ansible by Ubuntu_Boi"
      owner: root
      group: root
      mode: '0644'
```

4. Push and commit your files in GitHub

```
try@controller:~/Final_Exam_Onod$ git add .
try@controller:~/Final_Exam_Onod$ git commit -m "Added"
[main 4af293b] Added
 3 files changed, 71 insertions(+)
 create mode 100644 config.yml
 create mode 100644 install.yml
 create mode 100644 inventory.ini
try@controller:~/Final_Exam_Onod$ git push origin main
remote: Permission to EarelJohnOnod/Final_Exam_Onod.git denied to EarelJohnOnod.
fatal: unable to access 'https://github.com/EarelJohnOnod/Final_Exam_Onod/': The requested URL returned error: 403
try@controller:~/Final_Exam_Onod$ sudo git push origin main
Username for 'https://github.com': EarelJohnOnod
Password for 'https://EarelJohnOnod@github.com':
remote: Invalid username or token. Password authentication is not supported for Git operations.
fatal: Authentication failed for 'https://github.com/EarelJohnOnod/Final_Exam_Onod/'
```

Push doesn't work so I just placed the files manually instead.

5. Make sure to show evidence of input (codes) process (codes successfully running) and output (evidence of installation)

```
try@controller:~/Final_Exam_Onod$ sudo ansible-playbook -i inventory.ini install.yml

PLAY [setup] ***********************************************************************************************************

TASK [Gathering Facts] *************************************************************************************************
ok: [localhost]

TASK [cache check] *****************************************************************************************************
changed: [localhost]

TASK [install apache] **************************************************************************************************
ok: [localhost]

TASK [start apache] ****************************************************************************************************
ok: [localhost]

TASK [donwload node exporter] ******************************************************************************************
ok: [localhost]

TASK [extract node exporter] *******************************************************************************************
ok: [localhost]

TASK [create service for node exporter] ********************************************************************************
ok: [localhost]

TASK [start node exporter] *********************************************************************************************
fatal: [localhost]: FAILED! => {"changed": false, "msg": "Could not find the requested service node_exporter: host"}

PLAY RECAP *************************************************************************************************************
localhost                  : ok=7    changed=1    unreachable=0    failed=1    skipped=0    rescued=0    ignored=0
```

5. For your final exam to be counted, please paste your repository link as an answer in this exam.

https://github.com/EarelJohnOnod/Final_Exam_Onod.git

Note: Extra points if you will implement the said services via containerization.