# PROJECT 13
ANSIBLE DYNAMIC ASSIGNMENT AND CONCEPT OF ROLES

In this project, we introduced the concept of the use of Dynamic assignments. The major difference between static and dynamic assignments is in the use of `import and include ststements`.

Include does similar thing as Imports but differs because it is dynamic. Dynamic in the sense that ansible is able pick changes in playbooks added to a master playbook in real time. In import ansible preprocesses everything runs the playbook with the data it has. Changes made while executing the playbook is ignored.

- I Created a folder called `dynamic-assignments` and a file inside it called `env-vars.yml.`
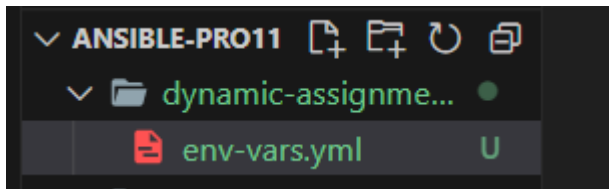
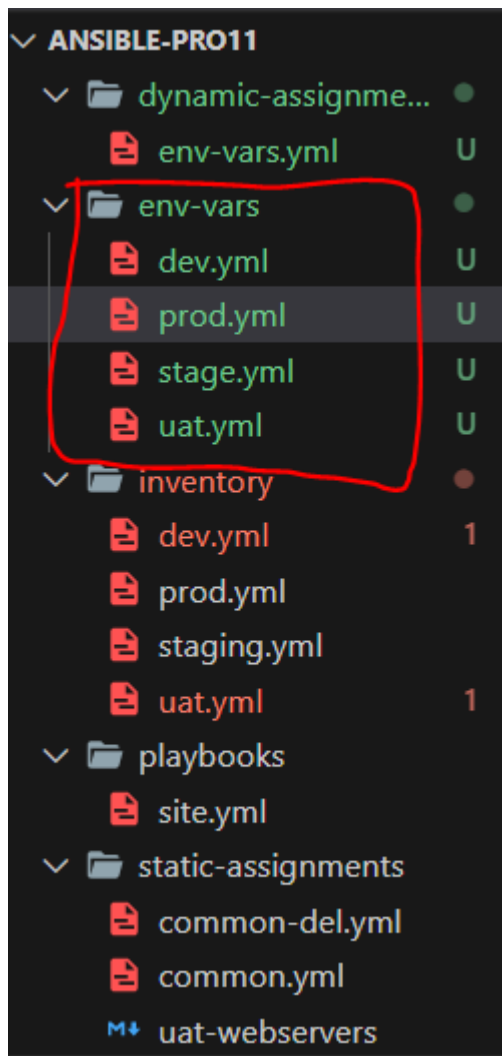- I Started a new branch called `dynamic-assignments` in my ansible-pro11 GitHub repository;
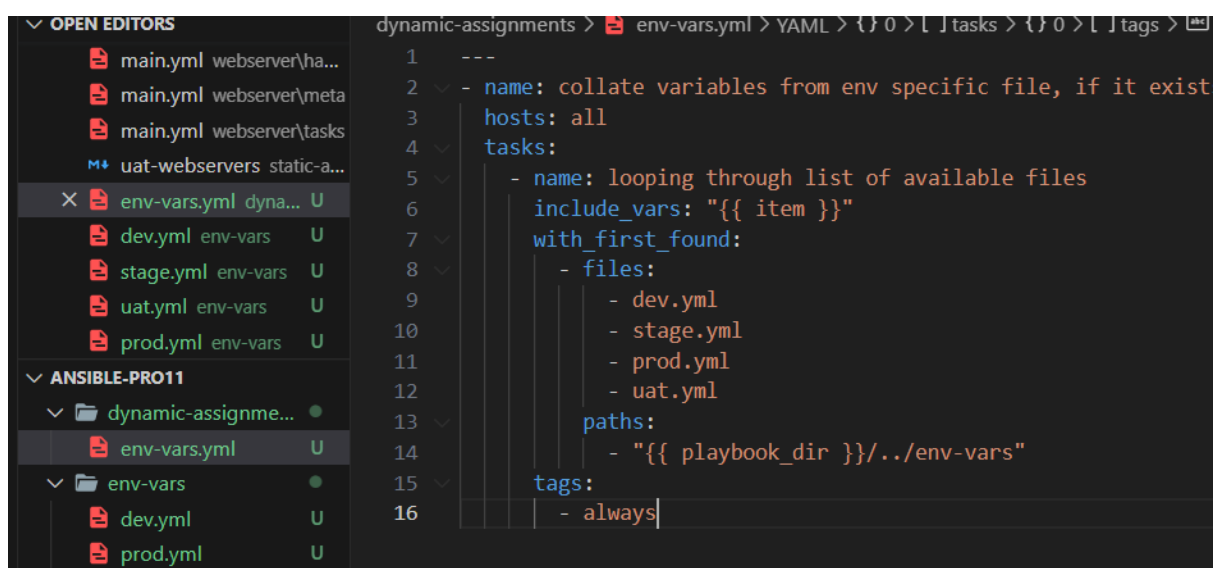

Since we will be using the same Ansible to configure multiple environments, and each of these environments will have certain unique attributes, such as **servername**, **ip-address** etc., we will need a way to set values to variables per specific environment.

For this reason, we will now create a folder to keep each environment's variables file. Therefore, create a new folder `env-vars`, then for each environment, create new **YAML** files which we will use to set variables.

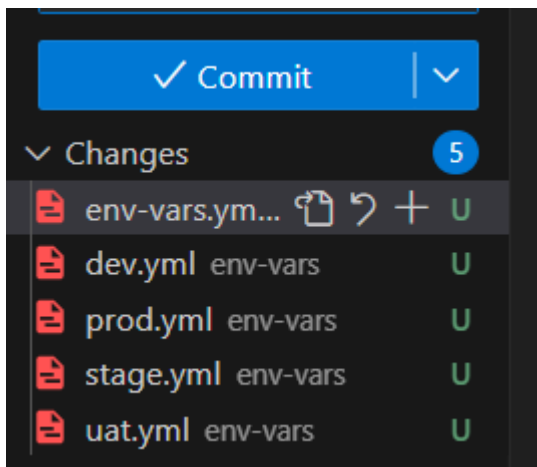Your layout should now look like this;

- Now paste the instruction below into the `env-vars.yml` file


```yaml
---
- name: collate variables from env specific file, if it exist
  hosts: all
  tasks:
    - name: looping through list of available files
      include_vars: "{{ item }}"
      with_first_found:
        - files:
            - dev.yml
            - stage.yml
            - prod.yml
            - uat.yml
          paths:
            - "{{ playbook_dir }}/../env-vars"
      tags:
        - always
```

● At this moment I committed my code;

Before the commit;

After the commit;
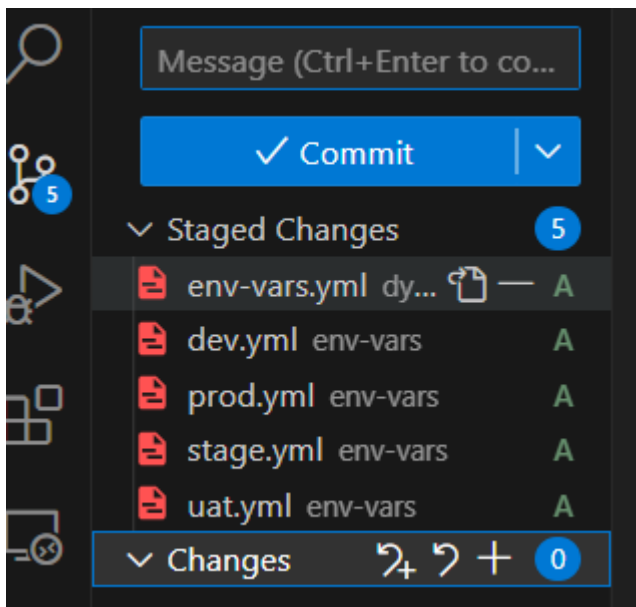
UPDATE SITE.YML WITH DYNAMIC ASSIGNMENTS

```yaml
playbooks > site.yml > YAML > {} 3
      You, 4 minutes ago | 1 author (You) | Ansible Playbook - Ansible playbook files (ansible.json)
   1    ---
   2    - hosts: all
   3    - name: Include dynamic variables
   4        tasks:
   5        import_playbook: ../static-assignments/common.yml
   6        include: ../dynamic-assignments/env-vars.yml
   7        tags:
   8          - always
   9
  10    - hosts: uat-webservers
  11    - import_playbook: ../static-assignments/uat-webservers.yml
  12
```

Community Roles

Download Mysql Ansible Role

```
ubuntu@ip-172-31-24-30:~/ansible-config-artifact/roles$ sudo ansible-galaxy install geerlingguy.mysql
- downloading role 'mysql', owned by geerlingguy
- downloading role from https://github.com/geerlingguy/ansible-role-mysql/archive/4.3.3.tar.gz
- extracting geerlingguy.mysql to /home/ubuntu/ansible-config-artifact/roles/geerlingguy.mysql
- geerlingguy.mysql (4.3.3) was installed successfully
ubuntu@ip-172-31-24-30:~/ansible-config-artifact/roles$ ls
geerlingguy.mysql  webserver
ubuntu@ip-172-31-24-30:~/ansible-config-artifact/roles$ mv geerlingguy.mysql/ mysql
mv: cannot move 'geerlingguy.mysql/' to 'mysql': Permission denied
ubuntu@ip-172-31-24-30:~/ansible-config-artifact/roles$ sudo mv geerlingguy.mysql/ mysql
ubuntu@ip-172-31-24-30:~/ansible-config-artifact/roles$ ls
mysql  webserver
ubuntu@ip-172-31-24-30:~/ansible-config-artifact/roles$
```

```
git add .
git commit -m "Commit new role files into GitHub"
git push --set-upstream origin roles-feature
```

LOAD BALANCER ROLES

Using ansible galaxy, installing configuration roles for apache and nginx. This configurations have been pre-written and referenced inside our static-assignments.
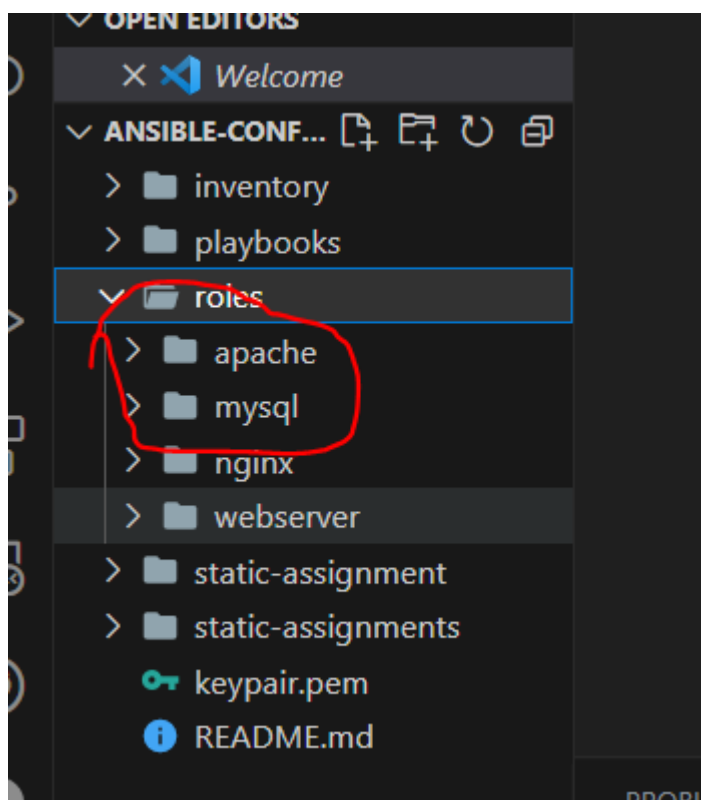
It is now time to twirk the configurations;

```
                                    "discovered_interpreter_python": "/usr/bin/python"
        },
        "changed": false,
        "ping": "pong"
}
ubuntu@ip-172-31-24-30:~$ ansibleuat-webservers -m ping
ansibleuat-webservers: command not found
ubuntu@ip-172-31-24-30:~$ ansible uat-webservers -m ping
[DEPRECATION WARNING]: The TRANSFORM_INVALID_GROUP_CHARS settings is set to a
configurable on deprecation. This feature will be removed in version 2.10. Dep
ansible.cfg.
[WARNING]: Invalid characters were found in group names but not replaced, use
[DEPRECATION WARNING]: Distribution rhel 9.2 on host 172.31.19.230 should use
compatibility with prior Ansible releases. A future Ansible release will defa
https://docs.ansible.com/ansible/2.9/reference_appendices/interpreter_discove
Deprecation warnings can be disabled by setting deprecation_warnings=False in
172.31.19.230 | SUCCESS => {
        "ansible_facts": {
                "discovered_interpreter_python": "/usr/bin/python"
        },
        "changed": false,
        "ping": "pong"
}
[DEPRECATION WARNING]: Distribution rhel 9.2 on host 172.31.25.233 should use
```

ANSIBLE-PRO1...
- dynamic-assignments
- env-vars
- inventory
- playbooks
- roles
  - apache
  - mysql
  - nginx
- static-assignments
  - common-del.yml
  - common.yml
  - db.yml
  - lb.yml
  - uat-webservers
- webserver
- README.md

```
ubuntu@ip-172-31-24-30:~$ ansible uat-webservers -m ping
[DEPRECATION WARNING]: The TRANSFORM_INVALID_GROUP_CHARS settings is set to allow bad characters
configurable on deprecation. This feature will be removed in version 2.10. Deprecation warnings c
ansible.cfg.
[WARNING]: Invalid characters were found in group names but not replaced, use -vvvv to see detail
[DEPRECATION WARNING]: Distribution rhel 9.2 on host 172.31.19.230 should use /usr/libexec/platfo
compatibility with prior Ansible releases. A future Ansible release will default to using the dis
https://docs.ansible.com/ansible/2.9/reference_appendices/interpreter_discovery.html for more inf
Deprecation warnings can be disabled by setting deprecation_warnings=False in ansible.cfg.
172.31.19.230 | SUCCESS => {
        "ansible_facts": {
                "discovered_interpreter_python": "/usr/bin/python"
        },
        "changed": false,
        "ping": "pong"
}
[DEPRECATION WARNING]: Distribution rhel 9.2 on host 172.31.25.233 should use /usr/libexec/platfo
compatibility with prior Ansible releases. A future Ansible release will default to using the dis
https://docs.ansible.com/ansible/2.9/reference_appendices/interpreter_discovery.html for more inf
Deprecation warnings can be disabled by setting deprecation_warnings=False in ansible.cfg.
172.31.25.233 | SUCCESS => {
        "ansible_facts": {
                "discovered_interpreter_python": "/usr/bin/python"
        },
        "changed": false,
        "ping": "pong"
}
ubuntu@ip-172-31-24-30:~$
```

```
                                          ubuntu@ip-172-31-24-30:~/Ansible-Pro11$ ansible-playbook -i inventory/uat.yml playbooks/site.yml
  dev.yml                                 [DEPRECATION WARNING]: The TRANSFORM_INVALID_GROUP_CHARS settings is set to allow bad characters in group names by default, this w
  prod.yml                                configurable on deprecation. This feature will be removed in version 2.10. Deprecation warnings can be disabled by setting deprecat
  staging.yml                             [WARNING]: Invalid characters were found in group names but not replaced, use -vvvv to see details
  uat.yml
> playbooks                    ●          PLAY [collate variables from env specific file, if it exists] ************************************************************
∨ roles
  > apache                                TASK [Gathering Facts] **************************************************************************************************
  ∨ mysql                                 [DEPRECATION WARNING]: Distribution rhel 9.2 on host 172.31.25.233 should use /usr/libexec/platform-python, but is using /usr/bin/
    > .github                             prior Ansible releases. A future Ansible release will default to using the discovered platform python for this host. See
    ∨ defaults                            https://docs.ansible.com/ansible/2.9/reference_appendices/interpreter_discovery.html for more information. This feature will be re
      main.yml                            warnings can be disabled by setting deprecation_warnings=False in ansible.cfg.
    > handlers                            ok: [172.31.25.233]
    > meta                                [DEPRECATION WARNING]: Distribution rhel 9.2 on host 172.31.19.230 should use /usr/libexec/platform-python, but is using /usr/bin/
    > molecule                            prior Ansible releases. A future Ansible release will default to using the discovered platform python for this host. See
    > tasks                               https://docs.ansible.com/ansible/2.9/reference_appendices/interpreter_discovery.html for more information. This feature will be re
    > templates                           warnings can be disabled by setting deprecation_warnings=False in ansible.cfg.
    > vars                                ok: [172.31.19.230]
    .ansible-lint
                                          TASK [looping through list of available files] **********************************************************************
                                          ok: [172.31.25.233] => (item=/home/ubuntu/Ansible-Pro11/env-vars/dev.yml)
                                          ok: [172.31.19.230] => (item=/home/ubuntu/Ansible-Pro11/env-vars/dev.yml)

                                          PLAY [uat-webservers] ***************************************************************************************************

> OUTLINE                                 TASK [Gathering Facts] **************************************************************************************************
                                          ok: [172.31.25.233]
```