Day 1

- Install ansible

$Sudo dnf -y install ansible-core

- Create the server container which will be managed through our ansible controller (local host).

```
FROM ubuntu:20.04
RUN apt update -y && apt install ssh -y && apt install sudo -y
RUN adduser ansible ; echo "ansible:123"  | chpasswd
RUN usermod -aG sudo ansible
RUN mkdir -p /home/ansible/.ssh
COPY id_rsa.pub /home/ansible/.ssh/authorized_keys
RUN chown ansible:ansible /home/ansible/.ssh/authorized_keys
RUN chmod 600 /home/ansible/.ssh/authorized_keys
ENTRYPOINT service ssh restart && bash
```

- Create the inventory file
- Put the IP of host 1 in the inventory file
- Use the inventory file path in your ad-hoc command instead of using the IP hard-coded
- Example:
  ansible all -i inventory --private-key ~/.ssh/devops -u ubuntu -m ping

```
#the_inventory_file

[myservers]
172.17.0.2
```

- Create the configuration file
- Insert some values in the configuration file
- Run the minimized ad-hoc command
- Example: ansible all -m ping

```
#the_ansible.cfg_file
[defaults]
inventory = ./inventory
remote_user = ansible
[privilege_escalation]
become = true
become_ask_pass = true
```

ansible-builtin modules

- Update cache
- Install latest nginx
- Copy index.html from controller to host 1
- Restart nginx service
- Can you see your index.html file when you hit host 1 on port 80 ?

```yaml
- name: my first play
  hosts: myservers
  gather_facts: false
  tasks:
  - name: update cache
    apt:
     update_cache: true

  - name: install nginx
    apt:
     name: nginx
     state: latest

  - name: copy index
    copy:
      src: ./index.html
      dest: /var/www/html/index.html

  - name: restart nginx
    service:
      name: nginx
      state: restarted
      use: sysvini
```

```
[ahmad@localhost ansible-day1]$ sudo docker run --rm --name ubuntu-ansi -itd -p 8080:80 ubuntu-ssh
99052d54d646f0cb53a243174cd9600690bb0108990d0cce42c9a65c58b0197d
[ahmad@localhost ansible-day1]$ ansible-playbook playbook.yml
BECOME password:

PLAY [my first play] ***********************************************************************************************************

TASK [update cache] ************************************************************************************************************
ok: [172.17.0.2]

TASK [install nginx] ***********************************************************************************************************
changed: [172.17.0.2]

TASK [copy index] **************************************************************************************************************
changed: [172.17.0.2]

TASK [restart nginx] ***********************************************************************************************************
changed: [172.17.0.2]

PLAY RECAP *********************************************************************************************************************
172.17.0.2                 : ok=4    changed=3    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

[ahmad@localhost ansible-day1]$ curl localhost
curl: (7) Failed to connect to localhost port 80: Connection refused
[ahmad@localhost ansible-day1]$ curl localhost:8080
Hello from the container. Rest assured, my nginx works just fine :)
[ahmad@localhost ansible-day1]$ curl 172.17.0.2:80
Hello from the container. Rest assured, my nginx works just fine :)
```

Day 2

- Create your first role with name (web)
- The task book will include:

1. installing a package
   (get the package name from vars)
2. Copying a file from controller to host using template
   (get the template name & template message from vars)
   (the actual template file will be stored in ./roles/web/templates)
   (will also notify the restart handler)
3. copying a list of files from controller to host using loop
   (get the list of file names from vars)
   (the actual files will be stored in ./roles/web/files)
   (will be executed using Handlers)

- Restart the service of the installed package
  (will be executed using Handlers chaining)

```
[ahmad@localhost ansible-day1]$ docker run --rm --name ubuntu-ansi -p 8080:80 -itd ubuntu-ssh
dc3d96922e1cd77bff40fbc6d04917b5e8cb32fa832241a3d3fba0e7061e9415
[ahmad@localhost ansible-day1]$ ansible-playbook playbook.yml
BECOME password:

PLAY [my first play] ***********************************************************************************************
***********************************

TASK [webserv : install] *******************************************************************************************
***********************************
changed: [172.17.0.2]

RUNNING HANDLER [webserv : template_handler] ***********************************************************************
***********************************
changed: [172.17.0.2]

RUNNING HANDLER [webserv : copy_handler] ***************************************************************************
***********************************
changed: [172.17.0.2] => (item=script.js)
changed: [172.17.0.2] => (item=cascade.css)

RUNNING HANDLER [webserv : restart_handler] ************************************************************************
***********************************
changed: [172.17.0.2]

PLAY RECAP *********************************************************************************************************
***********************************
172.17.0.2                 : ok=4    changed=4    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

[ahmad@localhost ansible-day1]$ curl 172.17.0.2
<html>
<body>
<h1> "Hello! your first role completed impeccably" </h1>
</body>
</html>
```