**Cloud Computing Lab**

**Nayab Khazin**

**BSE-V B**

**2023-BSE-046**

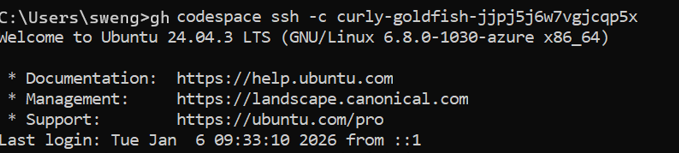
**LAB 11**

# Task 0 Lab Setup (Codespace & GH CLI)

* taskA\_codespace\_create\_and\_list.png



* taskA\_codespace\_ssh\_connected.png

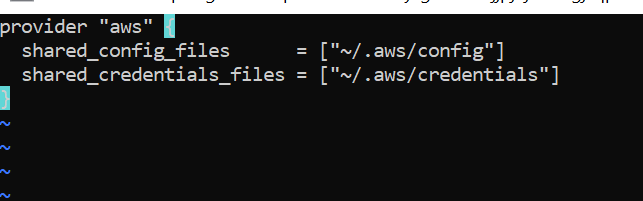


# Task 1 — Provider & Basic variable (variable precedence)

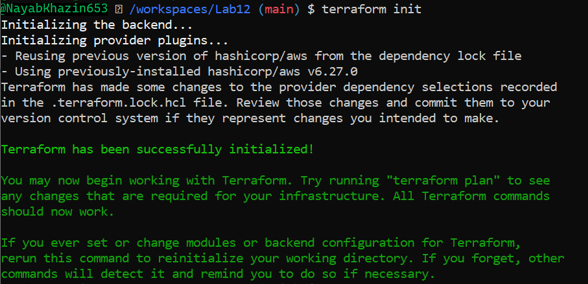
* task1\_touch\_main\_tf.png



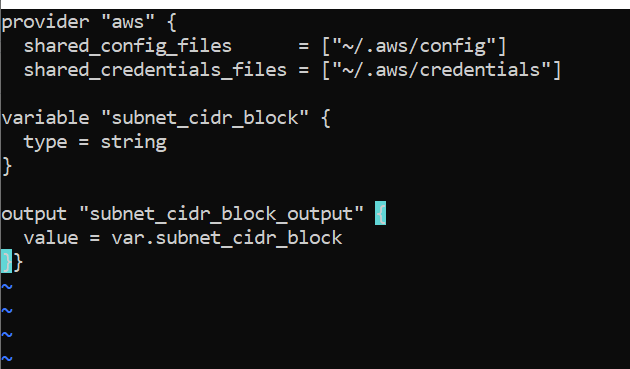
* task1\_main\_tf\_provider.png



* task1\_terraform\_init.png



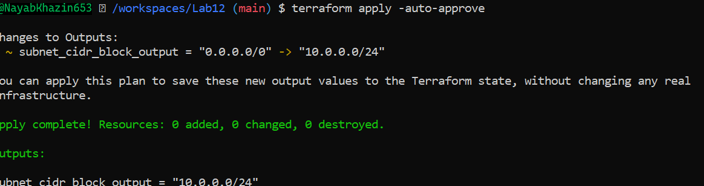
* task1\_variable\_and\_output\_added.png



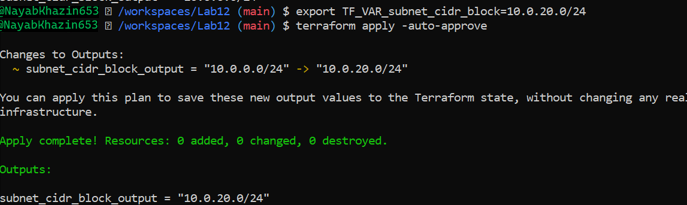
* task1\_apply\_prompt\_for\_var.png



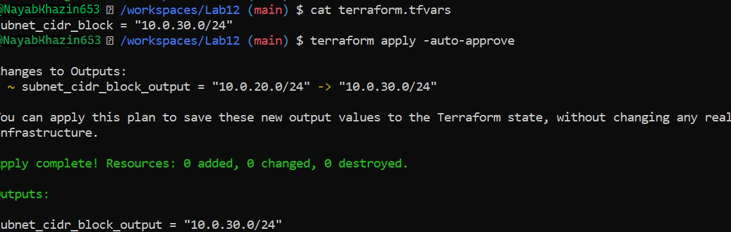
* task1\_apply\_with\_default.png



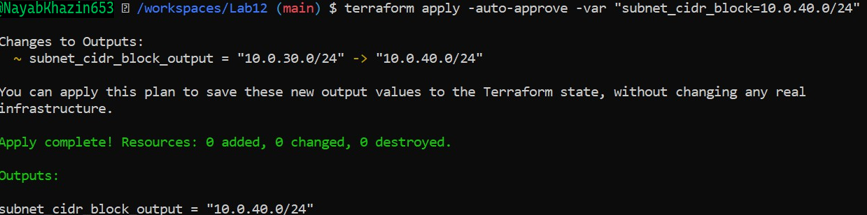
* task1\_env\_var\_set\_and\_apply.png



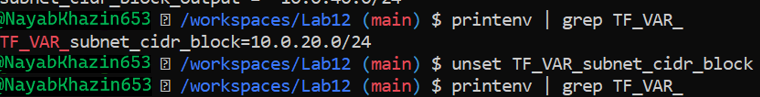
* task1\_terraform\_tfvars\_and\_apply.png



* task1\_var\_override\_with\_dash\_var.png

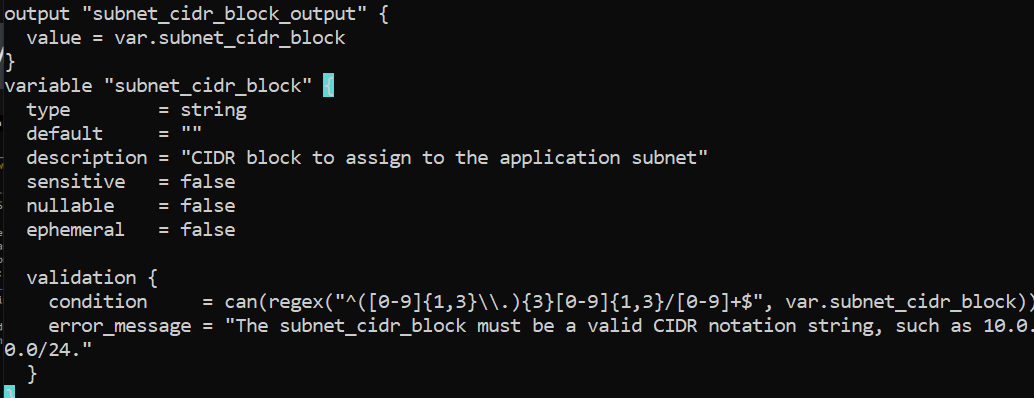


* task1\_printenv\_tf\_var\_and\_unset.png

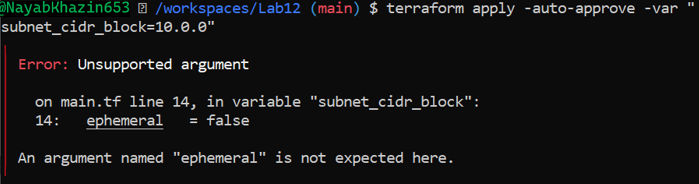


# Task 2 — Variable validation & sensitive / ephemeral variables

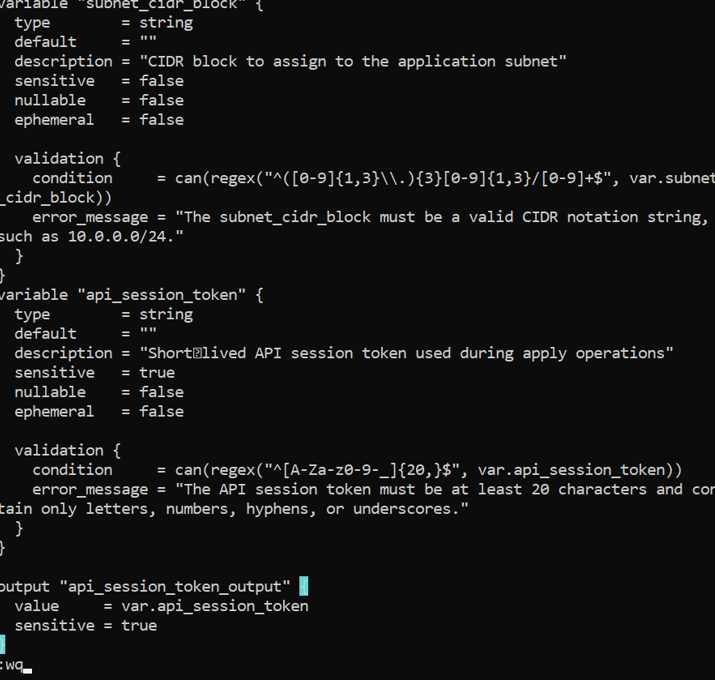
* task2\_subnet\_variable\_with\_validation.png



* task2\_subnet\_validation\_error.png



* task2\_api\_token\_variable\_added.png



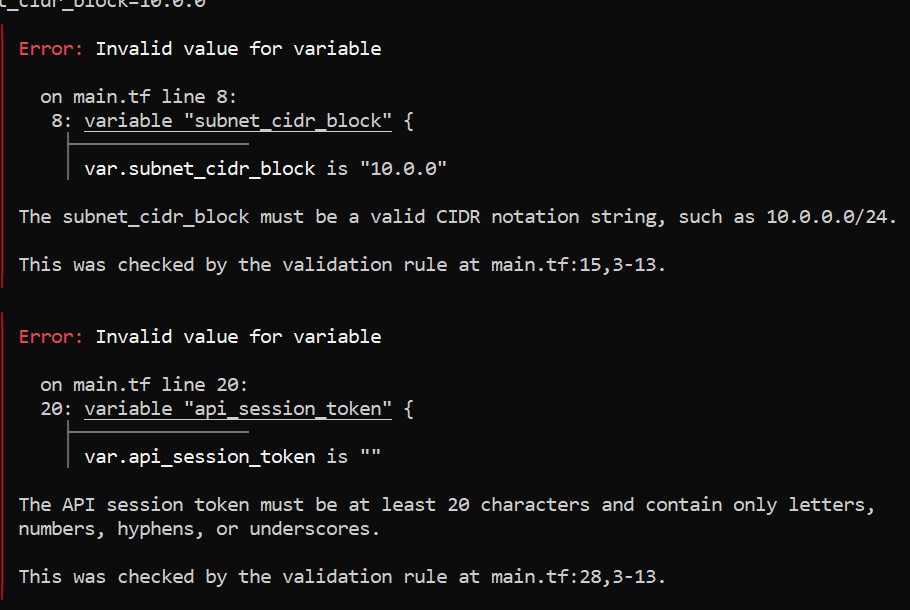
* task2\_api\_token\_apply\_sensitive.png



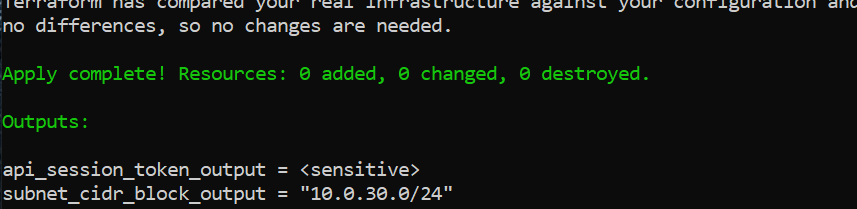
* task2\_check\_terraform\_state\_api\_token.png



* task2\_api\_token\_ephemeral\_error.png

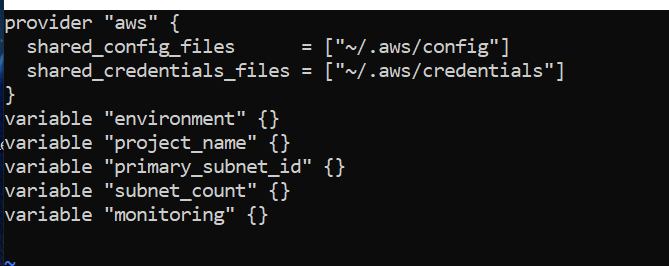


* task2\_api\_token\_default\_apply.png

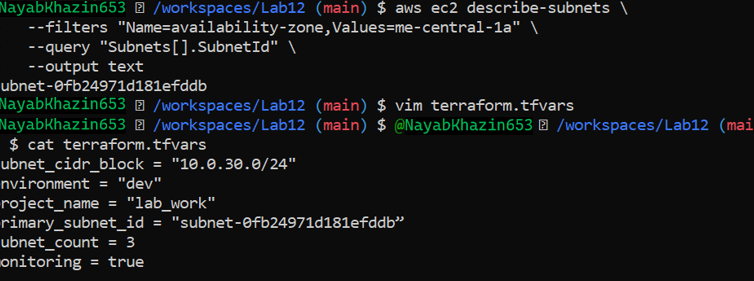


# Task 3 — Project-level variables, locals, and outputs

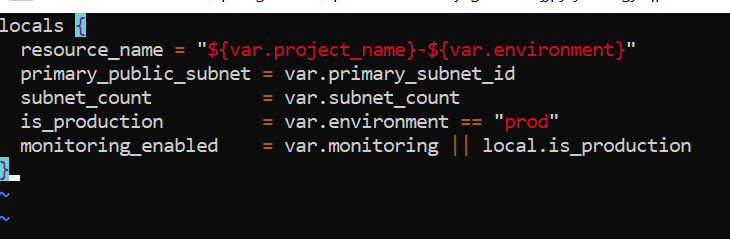
* task3\_variables\_added.png



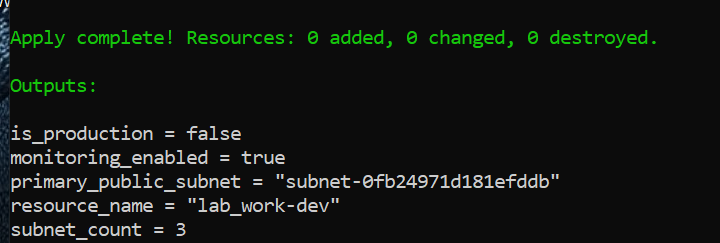
* task3\_terraform\_tfvars\_populated.png



* task3\_locals\_tf\_created.png

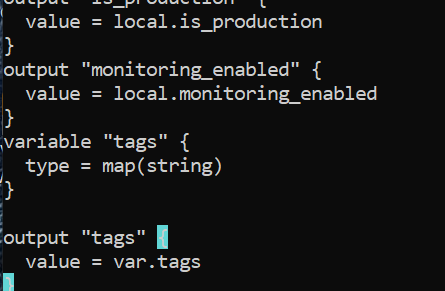


* task3\_outputs\_apply.png

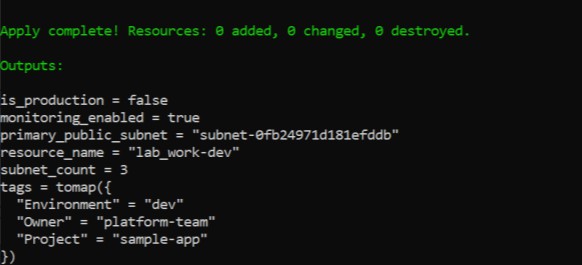


# Task 4 — Maps and Objects

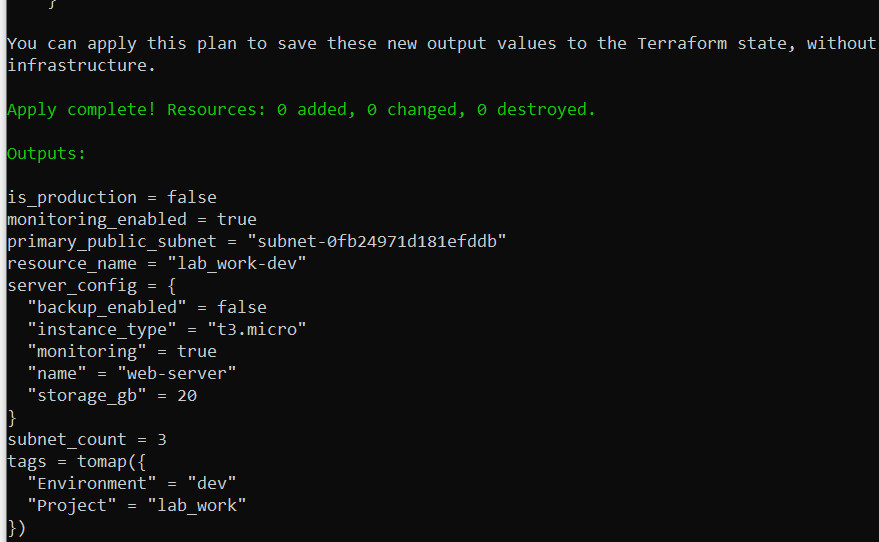
* task4\_tags\_variable\_added.png



* task4\_tags\_output.png

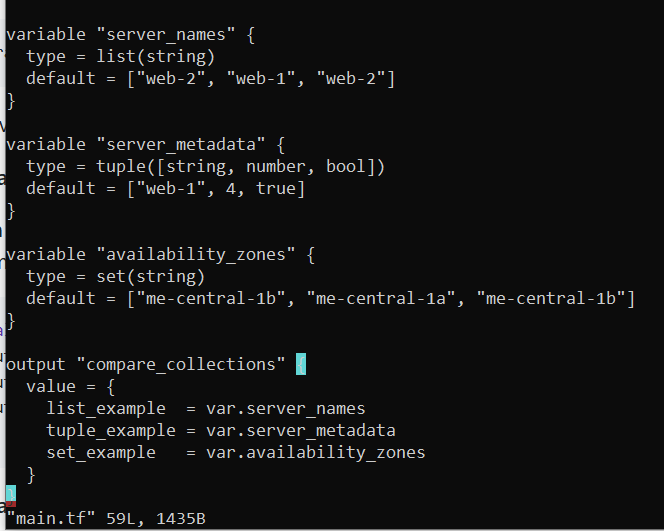


* task4\_server\_config\_output.png



# Task 5 — Collections: list, tuple, set & mutation via locals

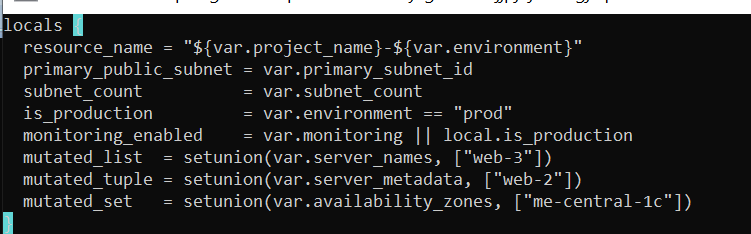
* task5\_collections\_defined.png



* task5\_compare\_collections.png



* task5\_locals\_mutations.png

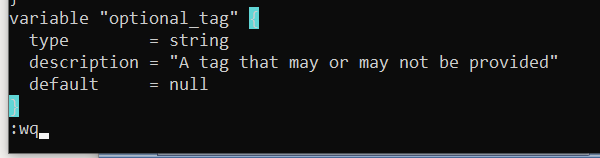


* task5\_mutation\_comparison.png

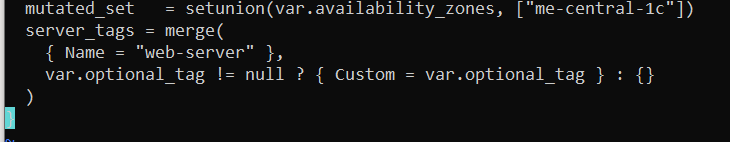


# Task 6 — Null, any type & dynamic values

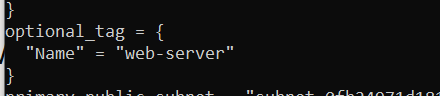
* task6\_optional\_tag\_variable.png



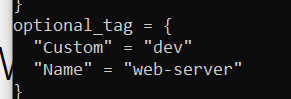
* task6\_locals\_merge.png



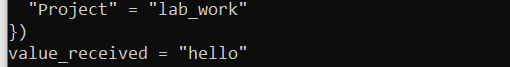
* task6\_optional\_tag\_no\_value.png



* task6\_optional\_tag\_with\_value.png



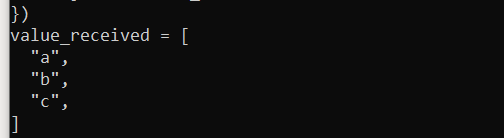
* task6\_dynamic\_value\_string.png



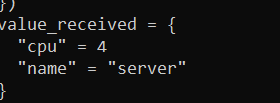
* task6\_dynamic\_value\_number.png



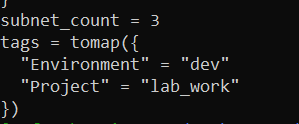
* task6\_dynamic\_value\_list.png



* task6\_dynamic\_value\_map.png

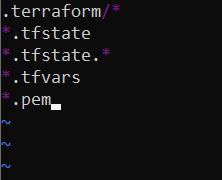


* task6\_dynamic\_value\_null.png(previous outputs only)



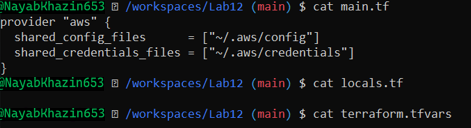
# Task 7 — Git ignore

* task7\_gitignore\_created.png

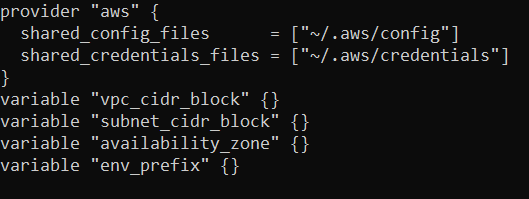


# Task 8 — Clean-up then build real infra (VPC, Subnet, IGW, routing, default route table)

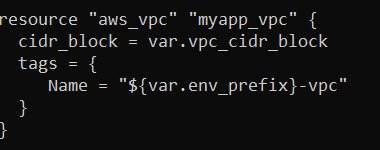
* task8\_clean\_files.png



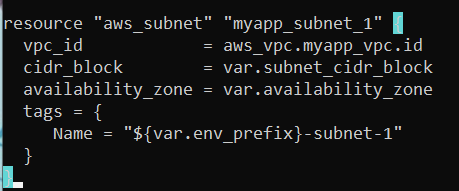
* task8\_variables\_recreated.png



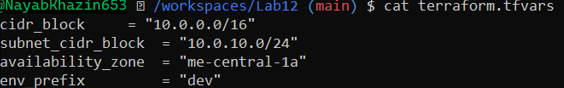
* task8\_vpc\_resources\_added.png



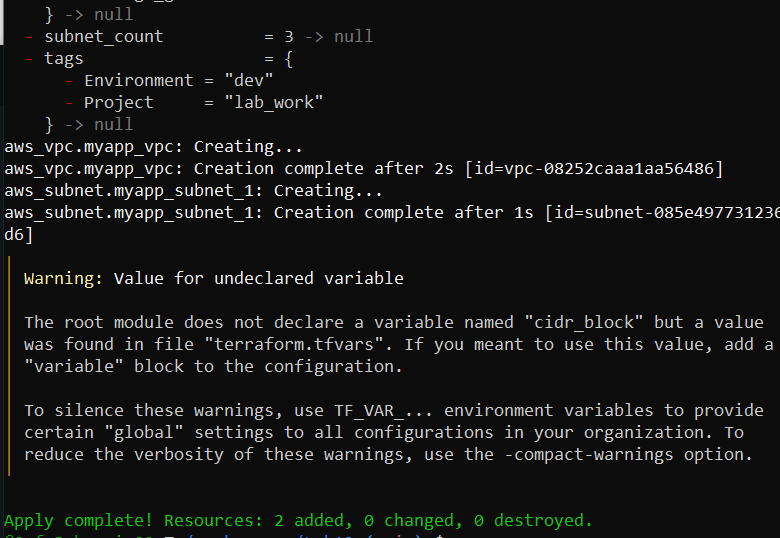
* task8\_subnet\_resources\_added.png



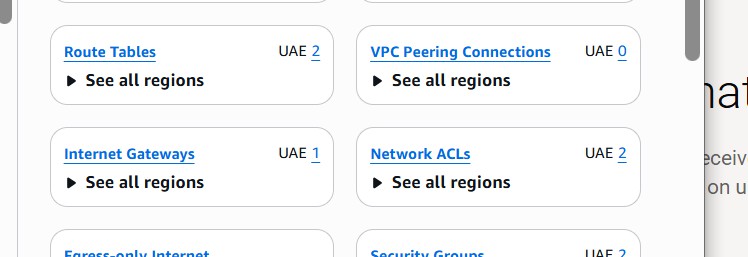
* task8\_terraform\_tfvars\_vpc\_values.png



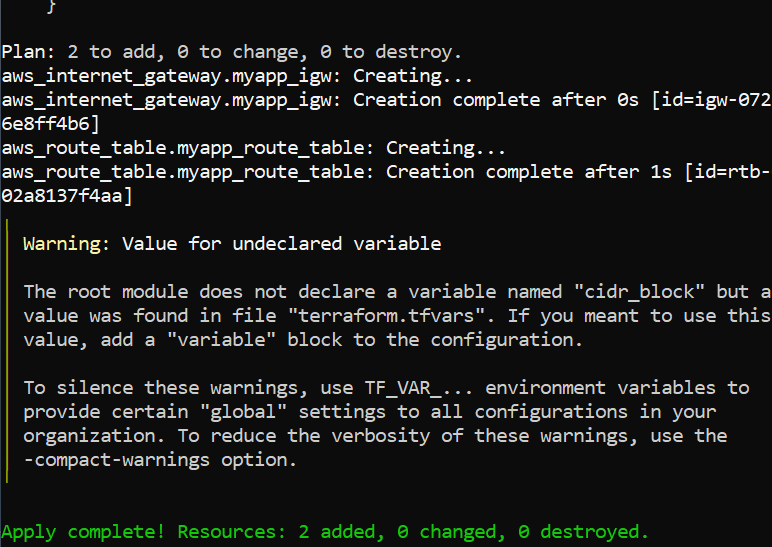
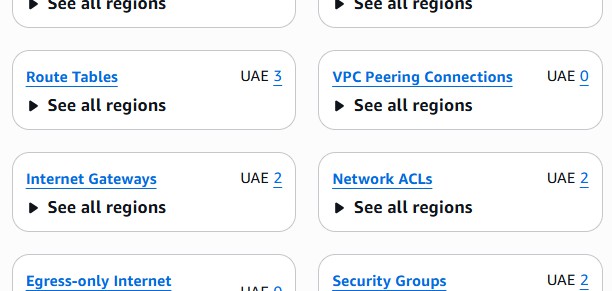
* task8\_vpc\_subnet\_apply.png



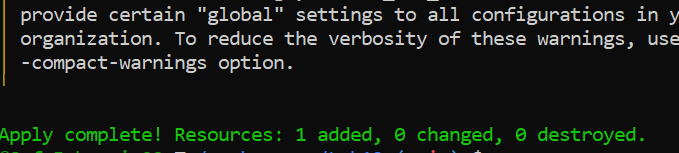
* task8\_igw\_route\_table\_before\_apply.png



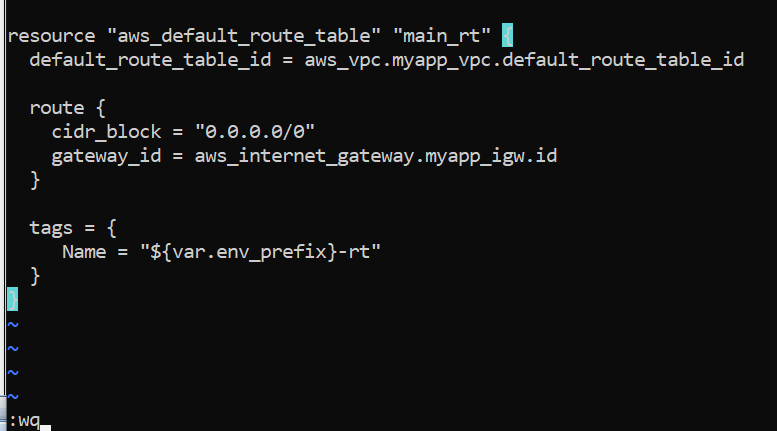
* task8\_igw\_route\_table\_after\_apply.png



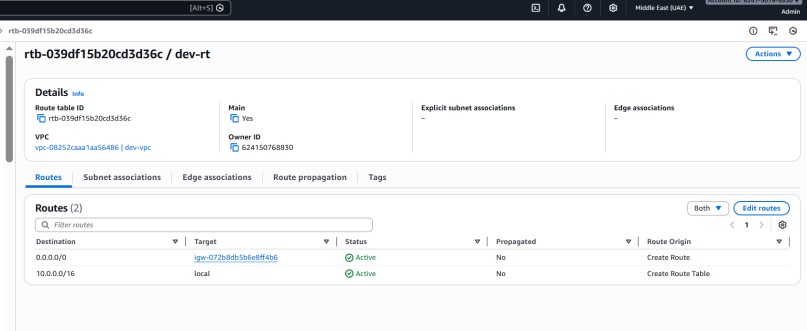
* task8\_association\_apply.png



* task8\_default\_route\_table.png

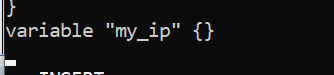


* task8\_default\_route\_table\_apply.png

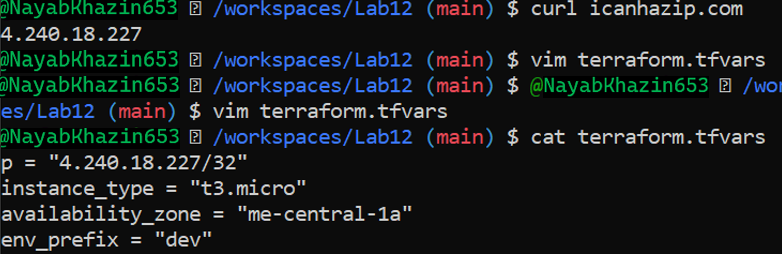


# Task 9 — Security Group, Key Pair, EC2 Instance, user\_data & nginx

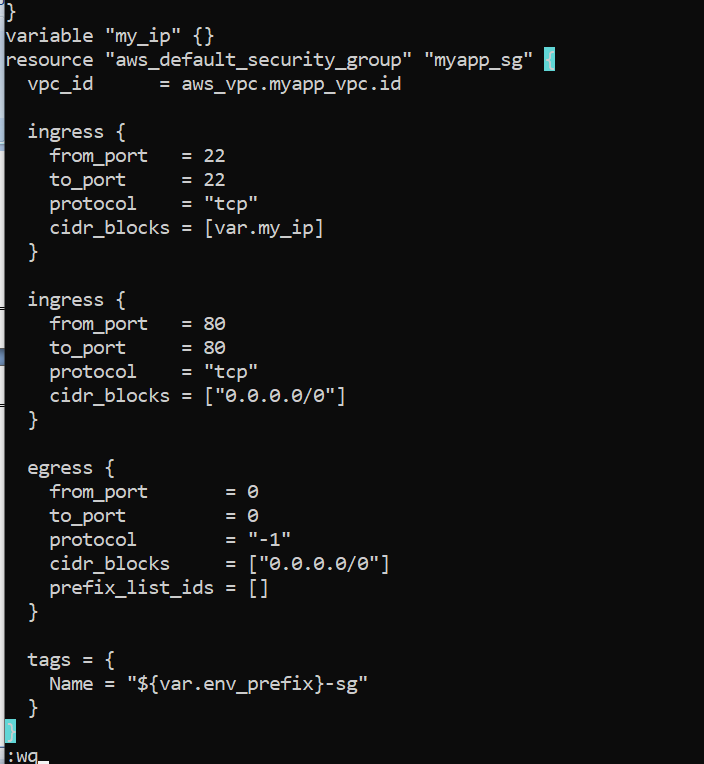
* task9\_my\_ip\_variable\_added.png

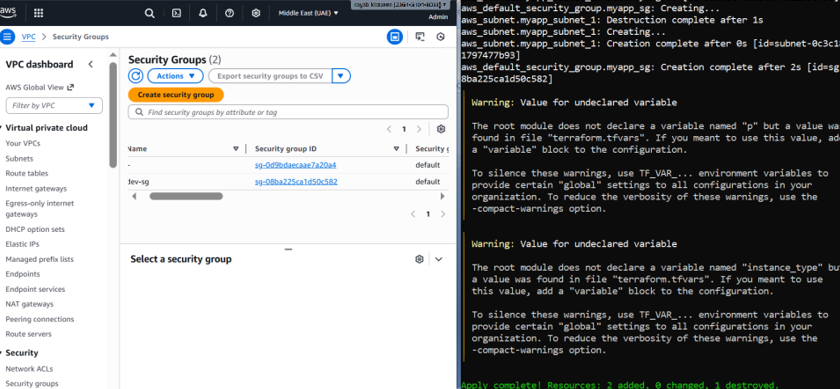


* task9\_public\_ip\_curl.png

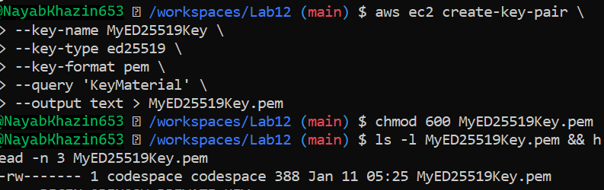


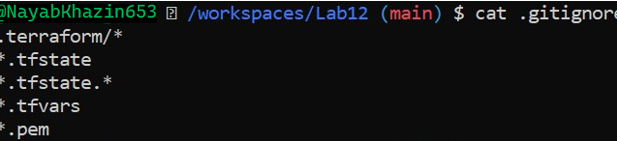
* task9\_security\_group\_apply.png



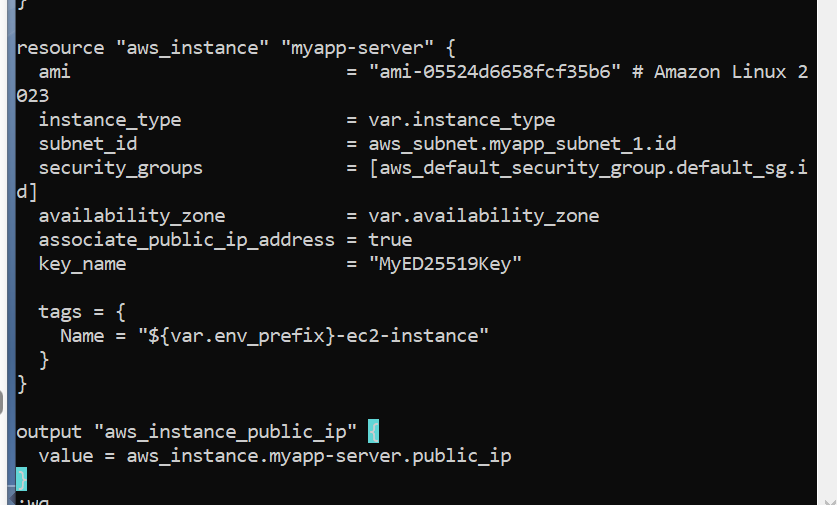


* task9\_keypair\_created\_and\_saved.png

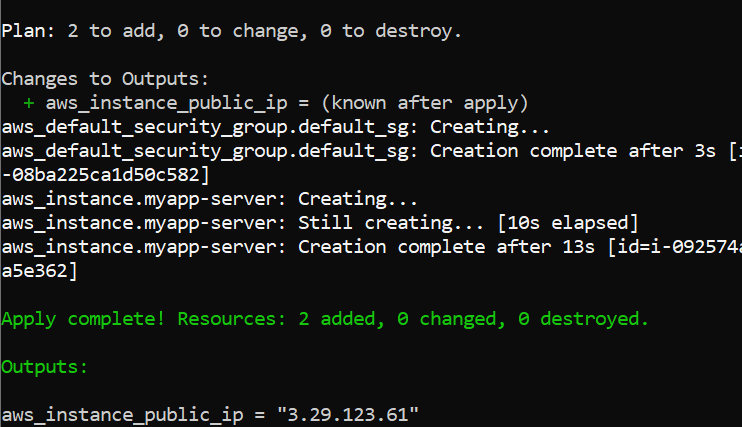


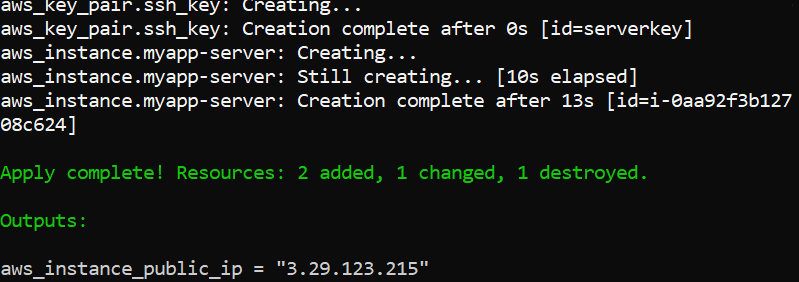


* task9\_instance\_type\_set.png

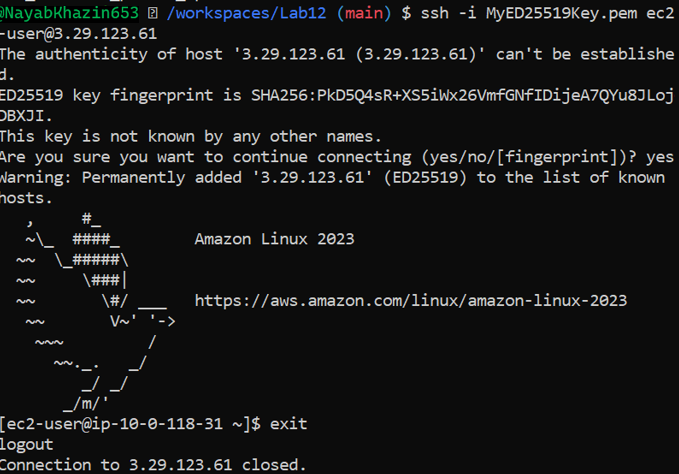


* task9\_ec2\_apply\_and\_public\_ip.png

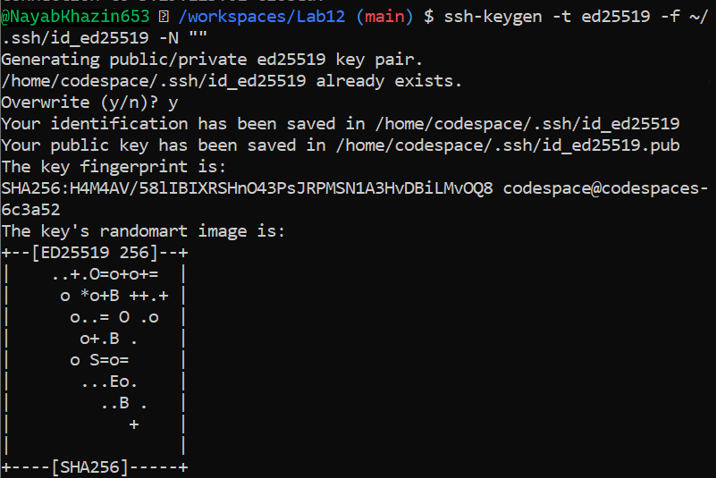


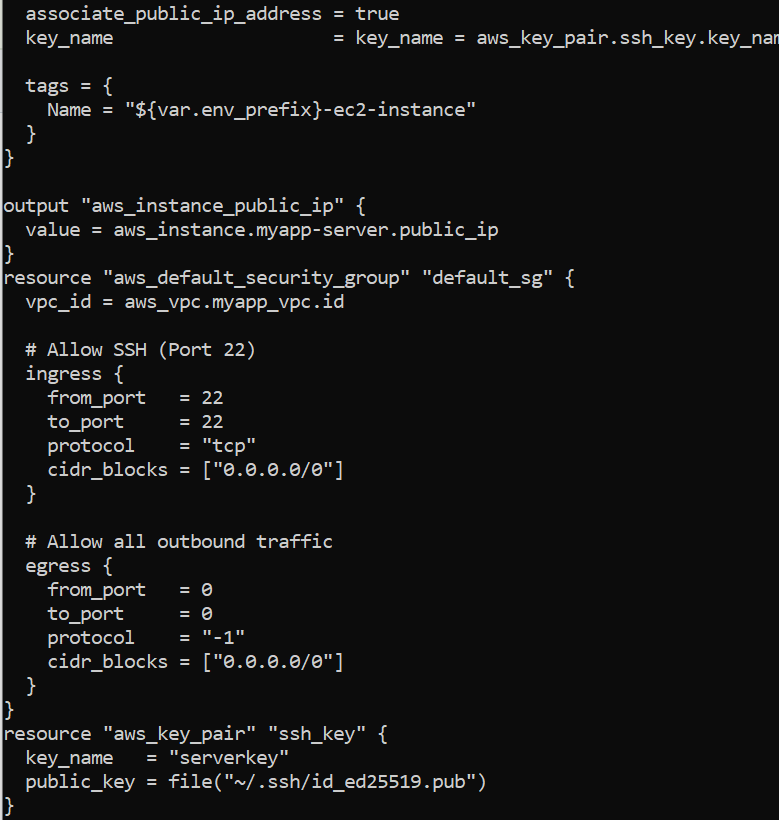


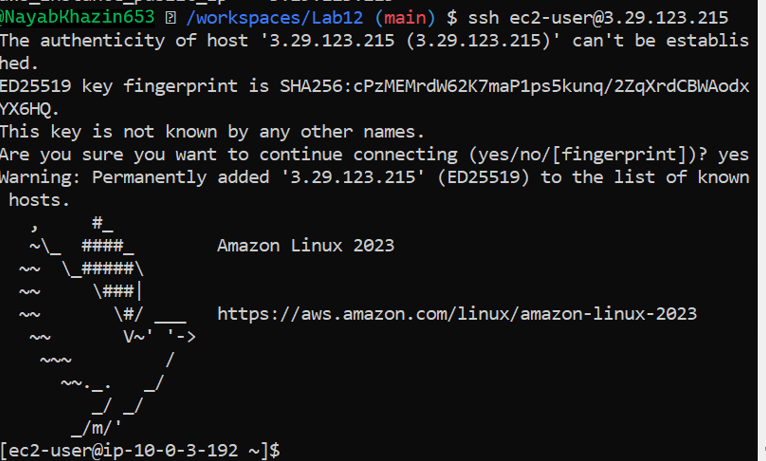
* task9\_ssh\_into\_ec2.png



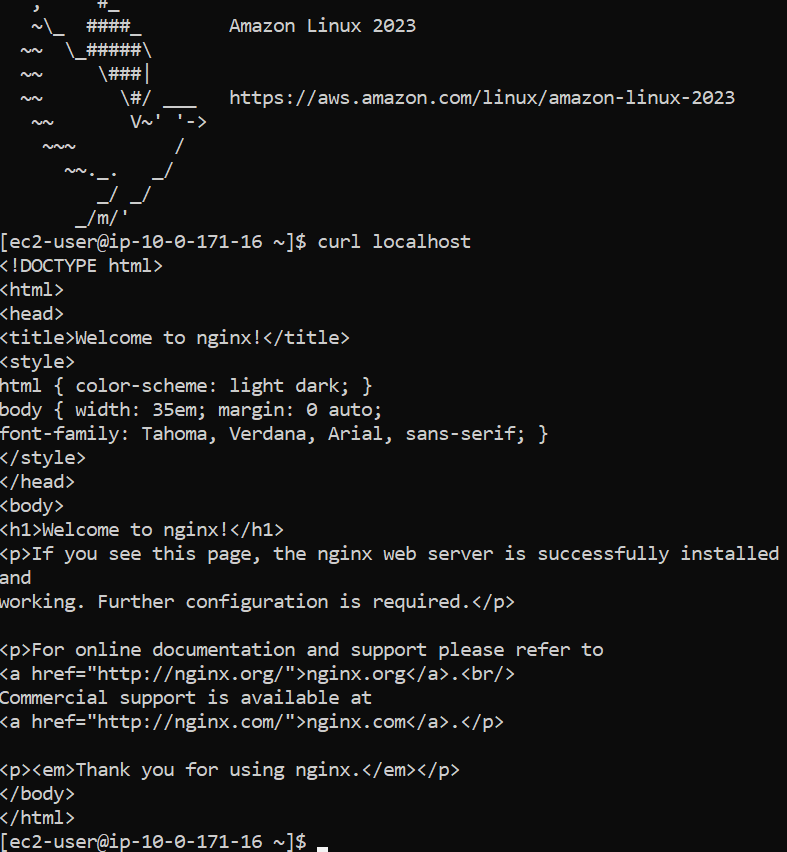
* task9\_ssh\_keypair\_and\_ssh.png

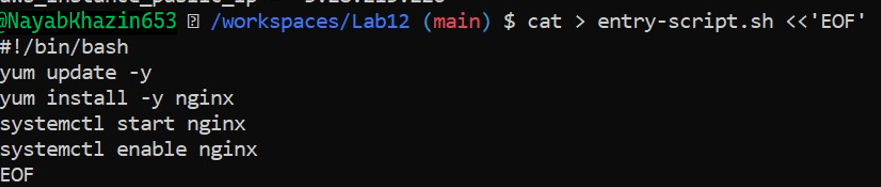






* task9\_nginx\_local\_curl.png



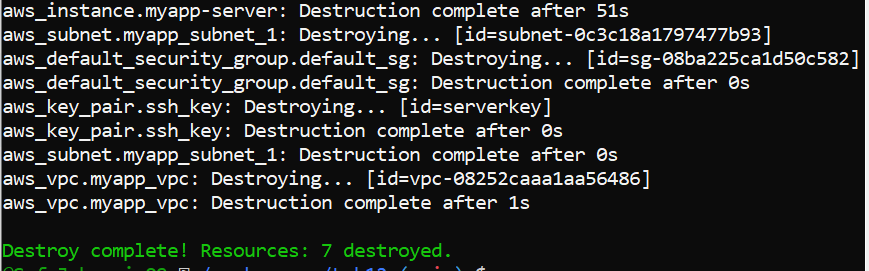


* task9\_nginx\_browser\_page.png

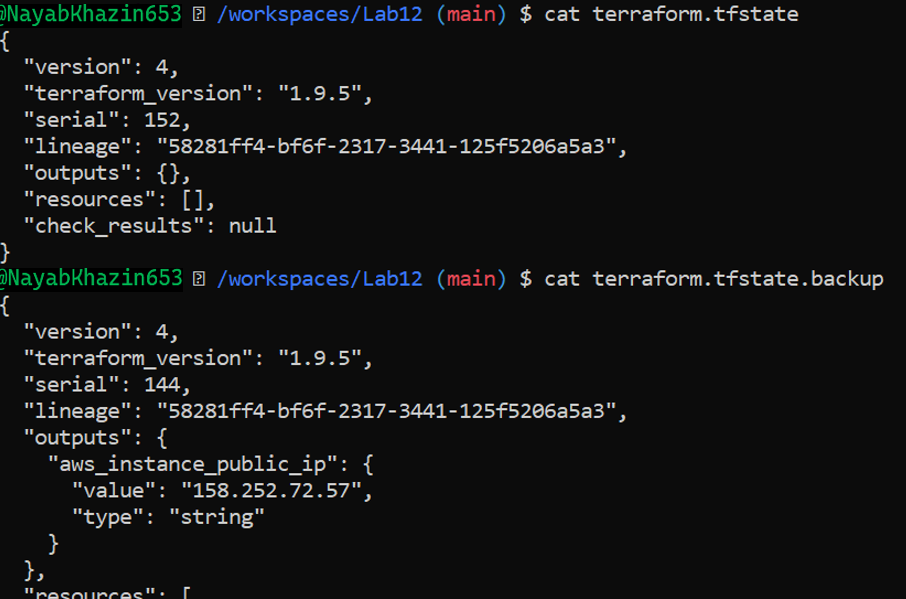


# Cleanup

* cleanup\_destroy.png



* cleanup\_state\_files.png



* cleanup\_verify\_no\_secrets.png

