AWS Challenge:

The intention of this lab is to create an AWS Infrastructure to provide a new VPC, subnets, routing tables, NATs and Web Servers with terraform code.
On the first phase a single web server will be created, after that the infrastructure will be completely destroyed and recreated with two web servers instead of one.

Steps:

Step 1:

- Create a VPC with public and private subnet
- Create the NAT, Elastic IP and Routes needed for the Web Servers
- Create an EC2 server
- Install a web service (httpd, nginx) and publish a simple web page (Hello World)
- Open the web service to be accessible from the internet

Step 2:

- Delete all the Infrastructure deployed on Step 1

Step 3:

- Deploy the Infrastructure on Step 1 with two Servers and their web Services

Step 4:

- Delete all the Infrastructure deployed on Step 3

Procedure (How it is done):

1-First, I check that there is only one default VPN and no EC2 instances on my AWS account **(Please see the attached images 001 and 002 on the IMAGES dir)**

2-Add the Provider (aws) section to the file main.tf

3-Add the "Main VPC" for the project (ChallengeVPC)

4-Add the "Public and Private Subnets" (Inside the ChallengeVPC)

5-Add the "Internet Gateway"

6-Add the "Elastic IP" for the NAT Gateway

7-Add the "NAT Gateway"

8-Add the "Route" for the public subnet and add the "route table association"

9-Add the "Security Group", and allow anyone on the internet to reach the port 80 for the web server

10-Add an EC2 server (copy the AMI code from the AWS web console to be used on the main.tf file), and add a script to be executed within the instance to install httpd service with a **"Hello World - Server 1"** message

11-After creating the main.tf file on terraform, I execute:

#terraform init

#terraform plan (I check that all the changes to be applied to AWS are correct, and then proceed)

#terraform apply

(The VPC, networking, NAT, routes and the EC2 instance/web server are created)

I go to the EC2 instance page on AWS web console, copy the Internet IP address, paste it on a web client on my side and check that the web server is up and running **(Please see the attached image 003a/b and 004)**

12-I destroy everything, with ***#terraform destroy***

13-Add the secondary EC2 instance, as the secondary web server, with the same config than the first one, but with the text "Hello World - Server 2" message on their web server

14-After modify the main.tf file on terraform, I execute:

#terraform plan (I check that all the changes to be applied to AWS are correct, and then proceed)

#terraform apply

(The secondary EC2 instance is created)

-I go to the EC2 instance page on AWS console, copy the Internet IP address of both instances, paste it on a web client on my side and check that the web servers are up and running **(Please see the attached images 005, 006, 007 and 008)**

15-Finally, everything is deleted again, with ***#terraform destroy***