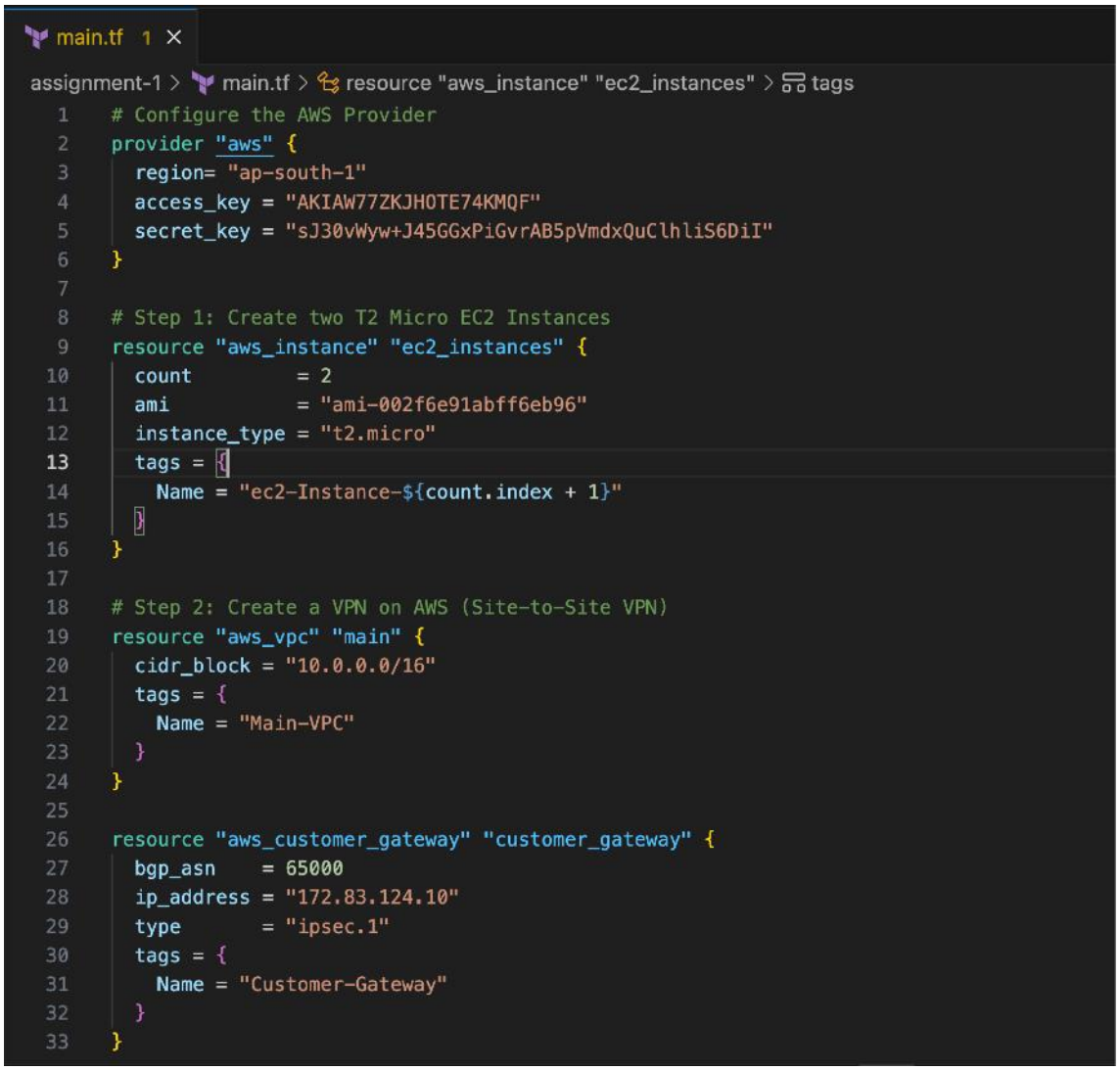
ASSIGNMENT-1

Task : Write Terraform script to do perform following tasks on AWS cloud Platform.

Step 1: Create two T2 Micro EC2 Instances.
Step2: Create a VPN on AWS
Step 3: Create a S3 Bucket
Step 4: Write the code for step 1,2 and 3 in a IaC terraform file and run terraform commands
to execute these steps.
Step 5: Create a PDF file using all screenshots. A small description need to be added with each
screenshot.
Step 6: PDF filename name should be your complete roll no.
Step 7: Push your pdf file in this GitHub Repo in your respective folder.
https://github.com/hkshitesh/SPCM-2025-ASSIGNMENTS-SUBMISSION.git

Solution :

1. Main.tf file with all the necessary commands to complete the steps :



```
main.tf 1 ×
assignment-1 > main.tf > resource "aws_instance" "ec2_instances" > tags
1   # Configure the AWS Provider
2   provider "aws" {
3     region= "ap-south-1"
4     access_key = "AKIAW77ZKJHOTE74KMQF"
5     secret_key = "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"
6   }
7
8   # Step 1: Create two T2 Micro EC2 Instances
9   resource "aws_instance" "ec2_instances" {
10    count         = 2
11    ami           = "ami-002f6e91abff6eb96"
12    instance_type = "t2.micro"
13    tags = {
14      Name = "ec2-Instance-${count.index + 1}"
15    }
16  }
17
18  # Step 2: Create a VPN on AWS (Site-to-Site VPN)
19  resource "aws_vpc" "main" {
20    cidr_block = "10.0.0.0/16"
21    tags = {
22      Name = "Main-VPC"
23    }
24  }
25
26  resource "aws_customer_gateway" "customer_gateway" {
27    bgp_asn    = 65000
28    ip_address = "172.83.124.10"
29    type       = "ipsec.1"
30    tags = {
31      Name = "Customer-Gateway"
32    }
33  }
```

```
35  resource "aws_vpn_gateway" "vpn_gateway" {
36    vpc_id = aws_vpc.main.id
37    tags = {
38      Name = "VPN-Gateway"
39    }
40  }
41
42  resource "aws_vpn_connection" "main" {
43    vpn_gateway_id      = aws_vpn_gateway.vpn_gateway.id
44    customer_gateway_id = aws_customer_gateway.customer_gateway.id
45    type                = "ipsec.1"
46    static_routes_only  = true
47    tags = {
48      Name = "VPN-Connection"
49    }
50  }
51
52  # Step 3: Create a S3 Bucket
53  resource "aws_s3_bucket" "example_bucket" {
54    bucket = "my-unique-bucket-name-${random_id.bucket_suffix.hex}" # Must be globally unique
55    acl    = "private"
56    tags = {
57      Name = "MyAssignmentBucket"
58    }
59  }
60
61  resource "random_id" "bucket_suffix" {
62    byte_length = 4
63  }
```

```
64
65  output "ec2_public_ips" {
66    value = aws_instance.ec2_instances[*].public_ip
67  }
68
69  output "s3_bucket_name" {
70    value = aws_s3_bucket.example_bucket.bucket
71  }
72
73  output "vpn_connection_id" {
74    value = aws_vpn_connection.main.id
75  }
```

2. Executing the script :

```
Initializing the backend...
Initializing provider plugins...
- Finding latest version of hashicorp/random...
- Finding latest version of hashicorp/aws...
- Installing hashicorp/random v3.7.1...
- Installed hashicorp/random v3.7.1 (signed by HashiCorp)
- Installing hashicorp/aws v5.94.1...
- Installed hashicorp/aws v5.94.1 (signed by HashiCorp)
Terraform has created a lock file .terraform.lock.hcl to record the provider
selections it made above. Include this file in your version control repository
so that Terraform can guarantee to make the same selections by default when
you run "terraform init" in the future.

Terraform has been successfully initialized!

You may now begin working with Terraform. Try running "terraform plan" to see
any changes that are required for your infrastructure. All Terraform commands
should now work.

If you ever set or change modules or backend configuration for Terraform,
rerun this command to reinitialize your working directory. If you forget, other
commands will detect it and remind you to do so if necessary.
```

3. Terraform init :

```
Plan: 8 to add, 0 to change, 0 to destroy.

Changes to Outputs:
  + ec2_public_ips    = [
      + (known after apply),
      + (known after apply),
    ]
  + s3_bucket_name    = (known after apply)
  + vpn_connection_id = (known after apply)

Warning: Argument is deprecated

  with aws_s3_bucket.example_bucket,
  on main.tf line 55, in resource "aws_s3_bucket" "example_bucket":
  55:   acl    = "private"

acl is deprecated. Use the aws_s3_bucket_acl resource instead.

(and one more similar warning elsewhere)
```

4. Terraform plan :

```
Plan: 8 to add, 0 to change, 0 to destroy.

Changes to Outputs:
  + ec2_public_ips    = [
      + (known after apply),
      + (known after apply),
    ]
  + s3_bucket_name    = (known after apply)
  + vpn_connection_id = (known after apply)

Warning: Argument is deprecated

  with aws_s3_bucket.example_bucket,
  on main.tf line 55, in resource "aws_s3_bucket" "example_bucket":
  55:   acl    = "private"

acl is deprecated. Use the aws_s3_bucket_acl resource instead.

(and one more similar warning elsewhere)
```

5. Terraform apply and Terraform validate :

```
Warning: Argument is deprecated

  with aws_s3_bucket.example_bucket,
  on main.tf line 55, in resource "aws_s3_bucket" "example_bucket":
  55:   acl    = "private"

acl is deprecated. Use the aws_s3_bucket_acl resource instead.

Success! The configuration is valid, but there were some validation warnings as shown above.
```

```
Do you want to perform these actions?
  Terraform will perform the actions described above.
  Only 'yes' will be accepted to approve.

  Enter a value: yes

random_id.bucket_suffix: Creating...
random_id.bucket_suffix: Creation complete after 0s [id=WvQVkg]
aws_customer_gateway.customer_gateway: Creating...
aws_vpc.main: Creating...
aws_s3_bucket.example_bucket: Creating...
aws_instance.ec2_instances[1]: Creating...
aws_instance.ec2_instances[0]: Creating...
aws_vpc.main: Creation complete after 2s [id=vpc-055aea51f92e6109b]
aws_vpn_gateway.vpn_gateway: Creating...
aws_s3_bucket.example_bucket: Creation complete after 2s [id=my-unique-bucket-name-5af41592]
aws_customer_gateway.customer_gateway: Still creating... [10s elapsed]
aws_instance.ec2_instances[0]: Still creating... [10s elapsed]
aws_instance.ec2_instances[1]: Still creating... [10s elapsed]
aws_customer_gateway.customer_gateway: Creation complete after 10s [id=cgw-0ebbcc01cc21e9f10]
aws_vpn_gateway.vpn_gateway: Still creating... [10s elapsed]
aws_instance.ec2_instances[0]: Creation complete after 13s [id=i-02d6f62dc79c16755]
aws_instance.ec2_instances[1]: Creation complete after 13s [id=i-0da604c15066c2e24]
aws_vpn_gateway.vpn_gateway: Still creating... [20s elapsed]
aws_vpn_gateway.vpn_gateway: Still creating... [30s elapsed]
aws_vpn_gateway.vpn_gateway: Creation complete after 34s [id=vgw-044134d1f94cf566c]
aws_vpn_connection.main: Creating...
aws_vpn_connection.main: Still creating... [10s elapsed]
```

6. Terraform destroy :

```
aws_instance.ec2_instances[1]: Destroying... [id=i-0da604c15066c2e24]
aws_vpn_connection.main: Destroying... [id=vpn-06e1588bf57e52b8b]
aws_instance.ec2_instances[0]: Destroying... [id=i-02d6f62dc79c16755]
aws_s3_bucket.example_bucket: Destruction complete after 0s
random_id.bucket_suffix: Destroying... [id=WvQVkg]
random_id.bucket_suffix: Destruction complete after 0s
aws_vpn_connection.main: Still destroying... [id=vpn-06e1588bf57e52b8b, 10s elapsed]
aws_instance.ec2_instances[1]: Still destroying... [id=i-0da604c15066c2e24, 10s elapsed]
aws_instance.ec2_instances[0]: Still destroying... [id=i-02d6f62dc79c16755, 10s elapsed]
aws_vpn_connection.main: Destruction complete after 11s
aws_vpn_gateway.vpn_gateway: Destroying... [id=vgw-044134d1f94cf566c]
aws_customer_gateway.customer_gateway: Destroying... [id=cgw-0ebbcc01cc21e9f10]
aws_customer_gateway.customer_gateway: Destruction complete after 0s
aws_instance.ec2_instances[1]: Still destroying... [id=i-0da604c15066c2e24, 20s elapsed]
aws_instance.ec2_instances[0]: Still destroying... [id=i-02d6f62dc79c16755, 20s elapsed]
aws_vpn_gateway.vpn_gateway: Still destroying... [id=vgw-044134d1f94cf566c, 10s elapsed]
aws_instance.ec2_instances[0]: Still destroying... [id=i-02d6f62dc79c16755, 30s elapsed]
aws_instance.ec2_instances[1]: Still destroying... [id=i-0da604c15066c2e24, 30s elapsed]
aws_vpn_gateway.vpn_gateway: Still destroying... [id=vgw-044134d1f94cf566c, 20s elapsed]
aws_vpn_gateway.vpn_gateway: Destruction complete after 24s
aws_vpc.main: Destroying... [id=vpc-055aea51f92e6109b]
aws_vpc.main: Destruction complete after 0s
aws_instance.ec2_instances[1]: Still destroying... [id=i-0da604c15066c2e24, 40s elapsed]
aws_instance.ec2_instances[0]: Still destroying... [id=i-02d6f62dc79c16755, 40s elapsed]
aws_instance.ec2_instances[0]: Destruction complete after 40s
aws_instance.ec2_instances[1]: Still destroying... [id=i-0da604c15066c2e24, 50s elapsed]
aws_instance.ec2_instances[1]: Destruction complete after 50s

Destroy complete! Resources: 8 destroyed.
```