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Assignment 5.5(B)

Make a module of yesterday's task, name it "s3_module". Pass bucket name to the module using variable "bucket_name". Use the returned "s3_bucket" variable to add "day2/IaC/" directory to this bucket in the main module.

For performing the given task, we create the following .tf file

so, here is main.tf file

```
main.tf x
main.tf > ...
1 terraform {
2   required_providers {
3     aws = {
4       source = "hashicorp/aws"
5       version = ">= 3.20.0"
6     }
7   }
8 }
9
10 provider "aws" {
11   # profile = var.aws_tf_profile
12   region = var.region
13 }
14
15 module "s3_module" {
16   source      = "./s3_module"
17   bucket_name = var.bucket_name
18 }
19
20 output "s3_bucket_id" {
21   value = module.s3_module.s3_bucket_name
22 }
23
```

Here is our variable.tf file for aws region and bucket_name

```
variables.tf s3_module • variables.tf ./ x
variables.tf > variable "region"
1 variable "region" {
2   description = "AWS Region"
3   default = "us-east-1"
4 }
5
6
7
8 # S3
9 variable "bucket_name" {
10  description = "AWS S3 bucket name"
11  default = "osama-razzak-terraform-bucket"
12 }
```

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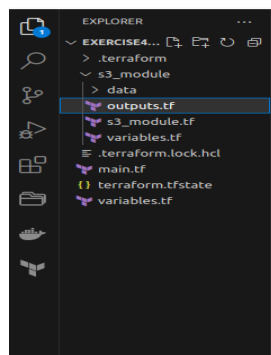
here is s3_module.tf file

```
Variables.tf • s3_module.tf x
s3_module > s3_module.tf > resource "aws_s3_bucket" "s3_module"
1 resource "aws_s3_bucket" "s3_module" {
2   bucket = var.bucket_name
3 }
4 resource "aws_s3_object" "folder" {
5   bucket = "${aws_s3_bucket.s3_module.id}"
6   key    = "/day2/IaC/"
7   source = "/dev/null"
8 }
```

here is outputs.tf file

```
Variables.tf • outputs.tf x
s3_module > outputs.tf > output "s3_bucket_name"
1 output "s3_bucket_name" {
2   description = "AWS S3 bucket name"
3   value       = aws_s3_bucket.s3_module.id
4 }
```

and here is our updated folder



then we initialized terraform using ‘terraform init’

```
Destroy complete! Resources: 0 destroyed.
(base) osamaabdurazzak@all-MS-7035:~/Desktop/data_engineering_bootcamp_2303/tasks/5_data_pipelines/day_5_IaC/exercise4_5.5b$ terraform init

Initializing the backend...
Initializing modules...

Initializing provider plugins...
- Reusing previous version of hashicorp/aws from the dependency lock file
- Using previously-installed hashicorp/aws v4.67.0

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
```

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then we apply the changes, defines in terraform configuration file using ‘terraform apply’

```
• (base) osamaabduRazzak@all-MS-7D35:~/Desktop/data_engineering_bootcamp_2303/tasks/5_data_pipelines/day_5_IaC/exercise4_5.5b$ terraform apply

Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the following symbols:
+ create

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

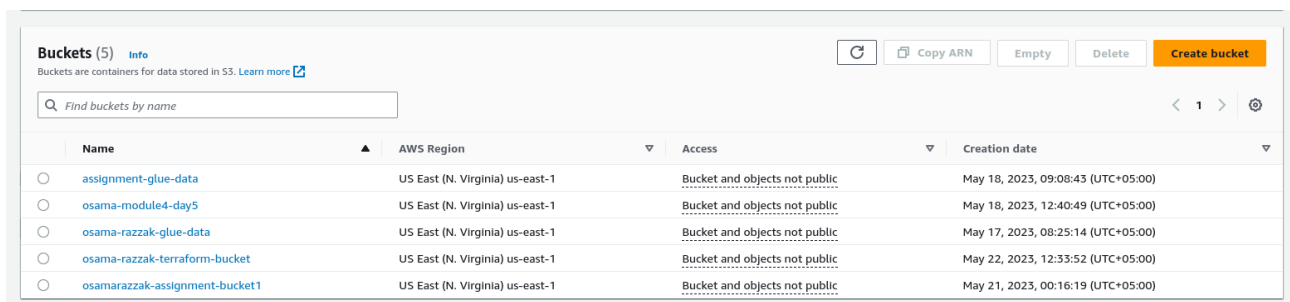
module.s3_module.aws_s3_bucket.s3_module: Creating...
module.s3_module.aws_s3_bucket.s3_module: Creation complete after 4s [id=osama-razzak-terraform-bucket]
module.s3_module.aws_s3_object.folder: Creating...
module.s3_module.aws_s3_object.folder: Creation complete after 1s [id=/day2/IaC/]

Apply complete! Resources: 2 added, 0 changed, 0 destroyed.
```

then we observe the output s3_bucket_id in terminal

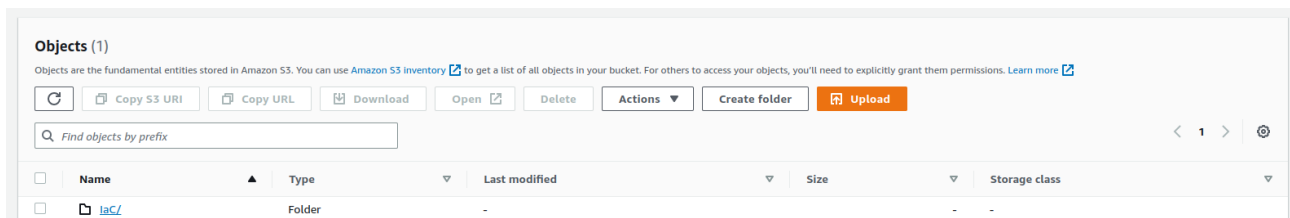
```
Outputs:
s3_bucket_id = "osama-razzak-terraform-bucket"
```

Also, observe the s3 bucket on AWS cloud too



	Name	AWS Region	Access	Creation date
<input type="radio"/>	assignment-glue-data	US East (N. Virginia) us-east-1	Bucket and objects not public	May 18, 2023, 09:08:43 (UTC+05:00)
<input type="radio"/>	osama-module4-day5	US East (N. Virginia) us-east-1	Bucket and objects not public	May 18, 2023, 12:40:49 (UTC+05:00)
<input type="radio"/>	osama-razzak-glue-data	US East (N. Virginia) us-east-1	Bucket and objects not public	May 17, 2023, 08:25:14 (UTC+05:00)
<input type="radio"/>	osama-razzak-terraform-bucket	US East (N. Virginia) us-east-1	Bucket and objects not public	May 22, 2023, 12:33:52 (UTC+05:00)
<input type="radio"/>	osamarazzak-assignment-bucket1	US East (N. Virginia) us-east-1	Bucket and objects not public	May 21, 2023, 00:16:19 (UTC+05:00)

As you can see, our bucket ‘osama-razzak-terraform-bucket’ is successfully created and inside that bucket the directory day2/IaC as we defined in configuration file



	Name	Type	Last modified	Size	Storage class
<input type="checkbox"/>	IaC/	Folder	-	-	-

And we can also destroy it by using the ‘terraform destroy’

And for your reference , we also the upload the whole folder