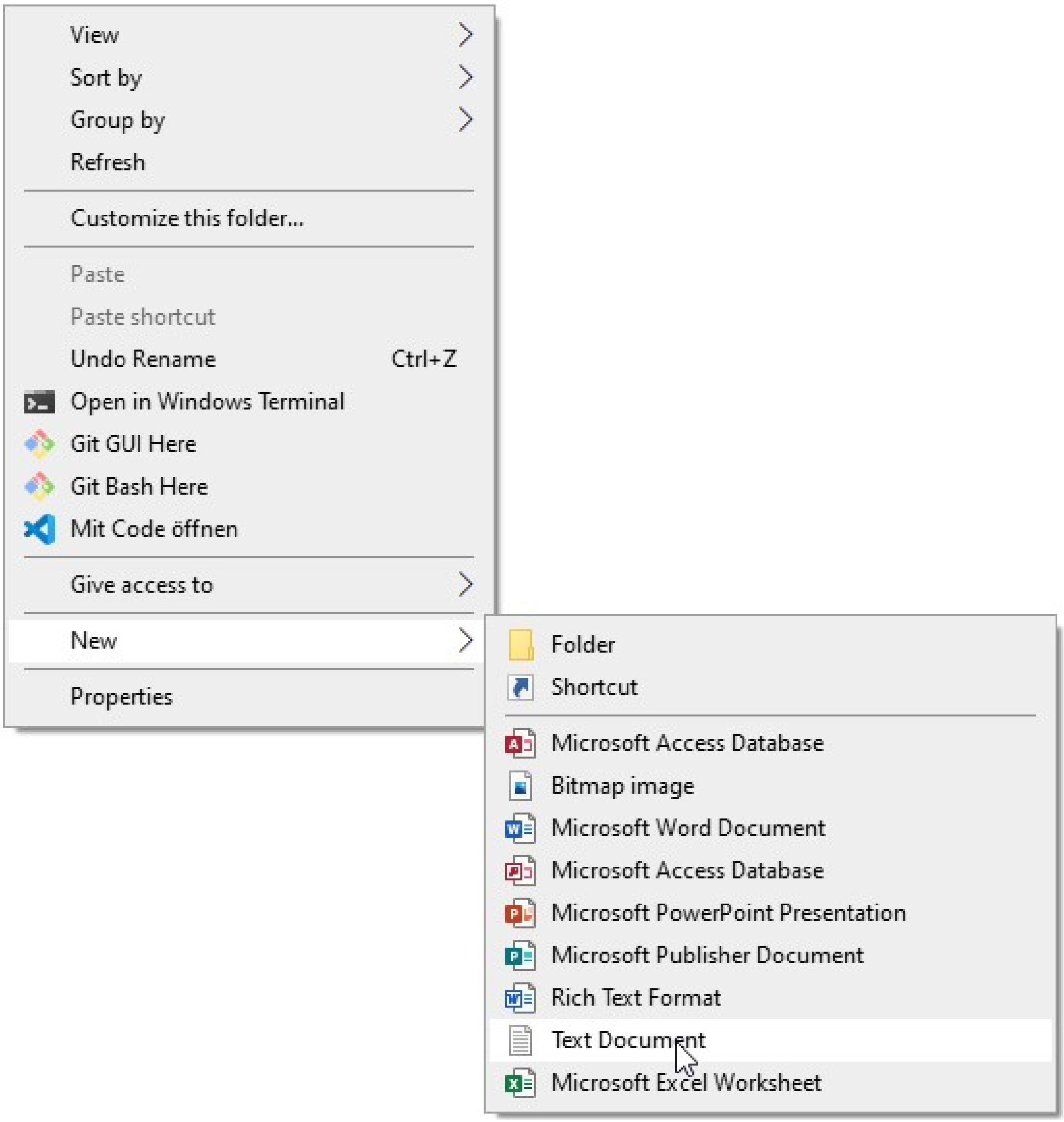
# Terraform Training Step-by-Step Documentation

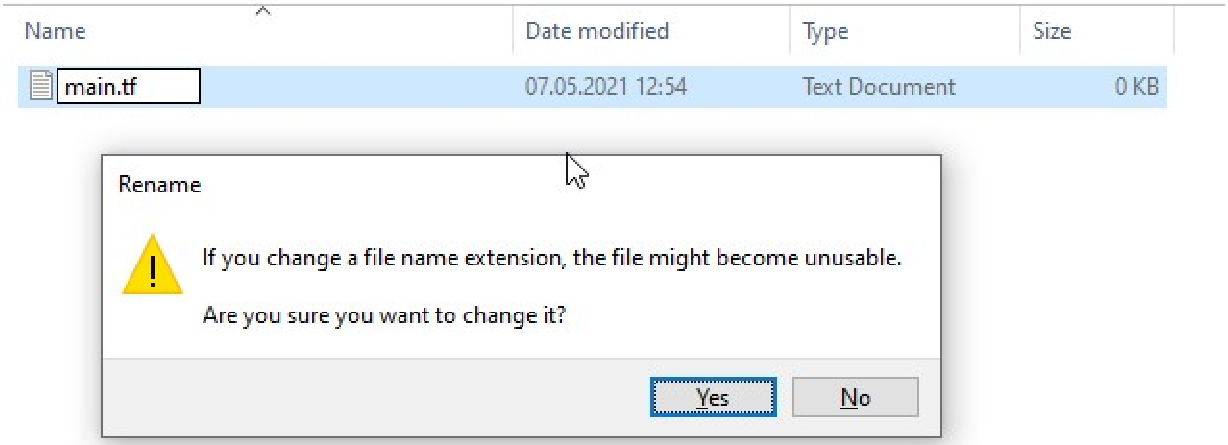
This Document should be used as a Step-by-Step Guide to proceed the Steps of the GKGAB Hands-On Labs within the Terraform Basic Trainings.

## Task 1:

- Create a Folder on your Client (e.g. C:\Terraform\Demo\)
- Navigate to this Folder and create a Text Document



- Rename this Text Document to main.tf



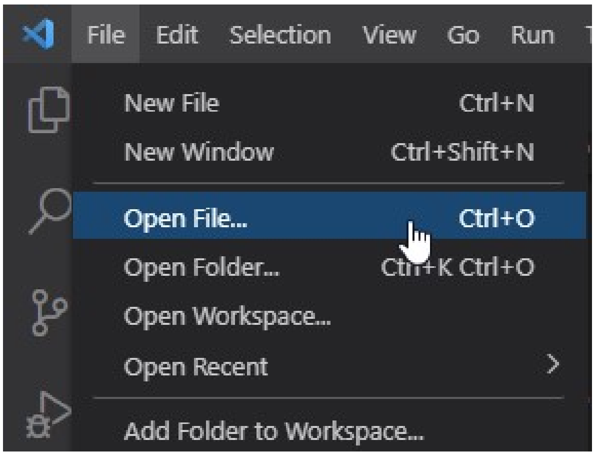
| Name | Date modified | Type | Size |
|---|---|---|---|
| main.tf | 07.05.2021 12:54 | Text Document | 0 KB |

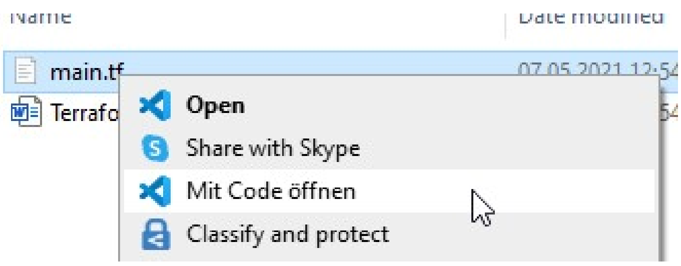
Rename

If you change a file name extension, the file might become unusable.

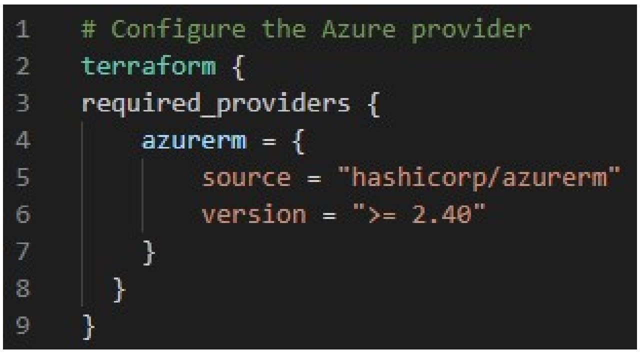
Are you sure you want to change it?

- Open this File with Visual Studio Code



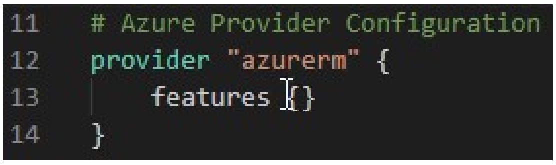


- Start to create the Terraform Provider Configuration Block



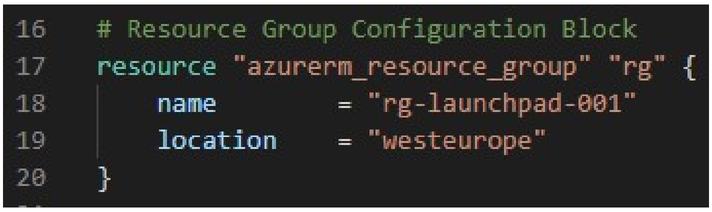
```
# Configure the Azure provider
terraform {
required_providers {
    azurerm = {
        source = "hashicorp/azurerm"
        version = ">= 2.40"
    }
  }
}
```

- Define the Provider



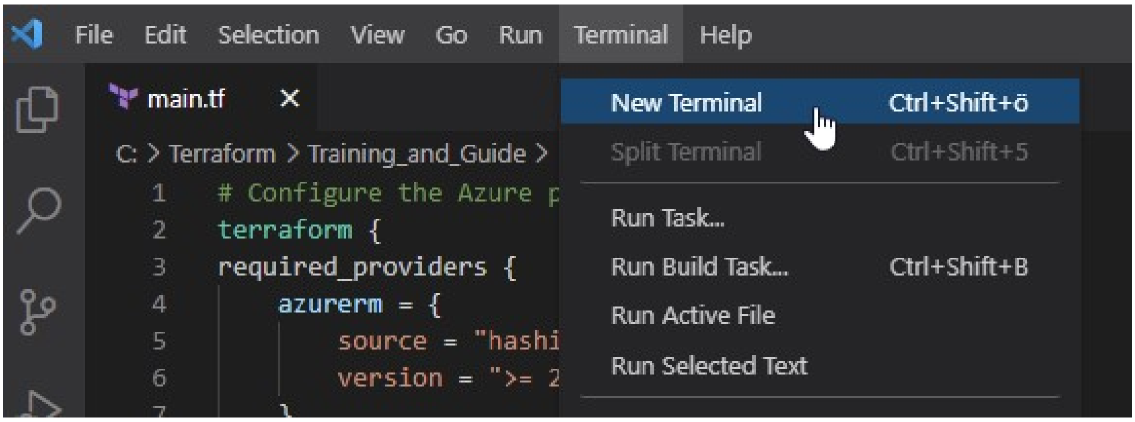
```
# Azure Provider Configuration
provider "azurerm" {
    features {}
}
```

- Add the Resource Group Configuration Block



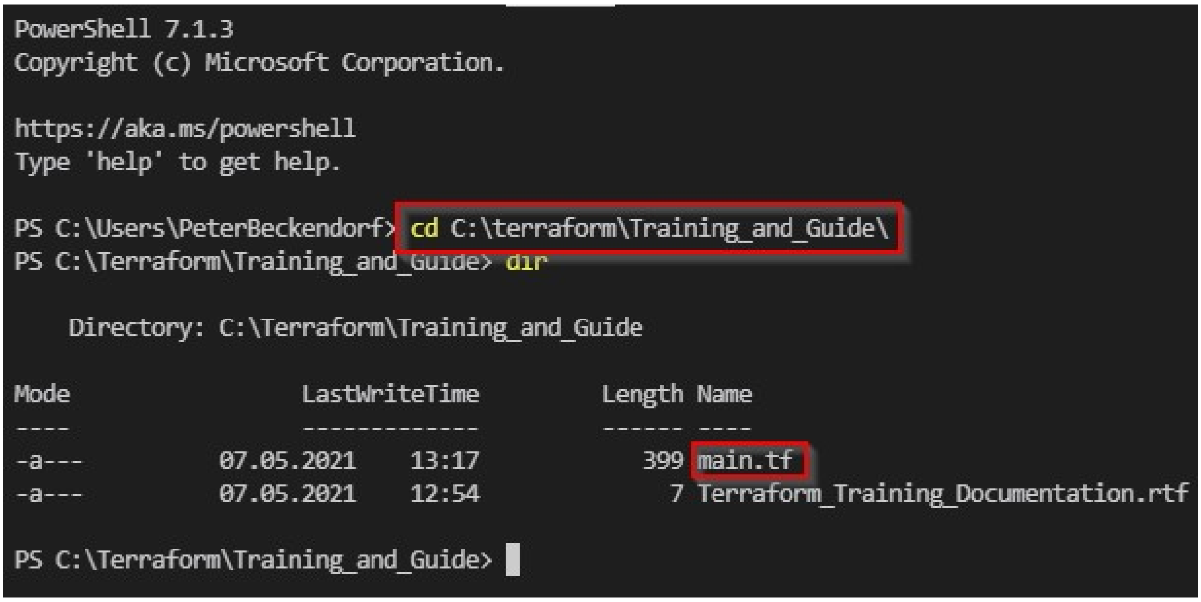
```
# Resource Group Configuration Block
resource "azurerm_resource_group" "rg" {
    name        = "rg-launchpad-001"
    location    = "westeurope"
}
```

- Save the Configured File -> use STRG+S as Save-Shortcut
- Now open a terminal Session within your Visual Studio Code


File
Edit
Selection
View
Go
Run
Terminal
Help
main.tf
C: > Terraform > Training_and_Guide >
New Terminal Ctrl+Shift+ö
Split Terminal Ctrl+Shift+5
Run Task...
Run Build Task... Ctrl+Shift+B
Run Active File
Run Selected Text

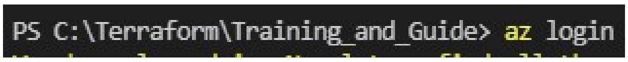
```
# Configure the Azure p
terraform {
required_providers {
    azurerm = {
        source = "hashi
        version = ">= 2
```

- Be sure it is a Powershell Terminal
- Navigate to your location of the Main.tf File

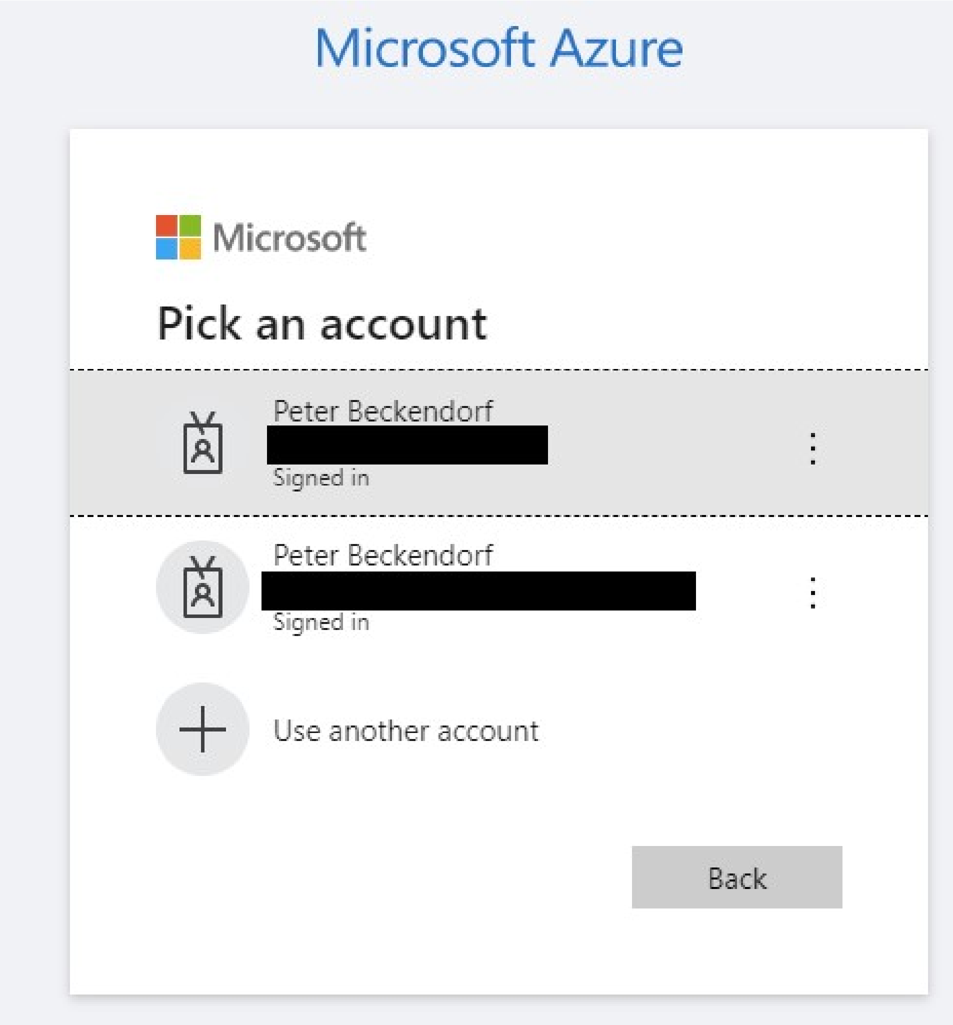


```
PowerShell 7.1.3
Copyright (c) Microsoft Corporation.

https://aka.ms/powershell
Type 'help' to get help.

PS C:\Users\PeterBeckendorf> cd C:\terraform\Training_and_Guide\
PS C:\Terraform\Training_and_Guide> dir

    Directory: C:\Terraform\Training_and_Guide

Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
-a---          07.05.2021    13:17            399 main.tf
-a---          07.05.2021    12:54              7 Terraform_Training_Documentation.rtf

PS C:\Terraform\Training_and_Guide>
```

- Next you have to login to azure, for this use ***az login***



```
PS C:\Terraform\Training_and_Guide> az login
```



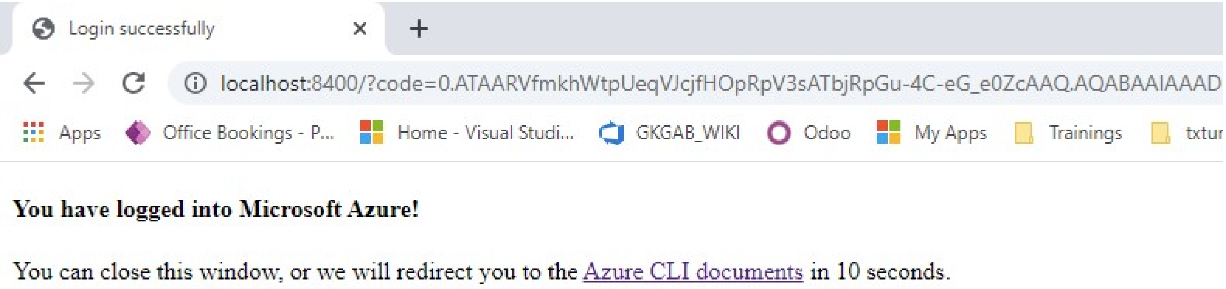
Microsoft Azure

Microsoft

Pick an account

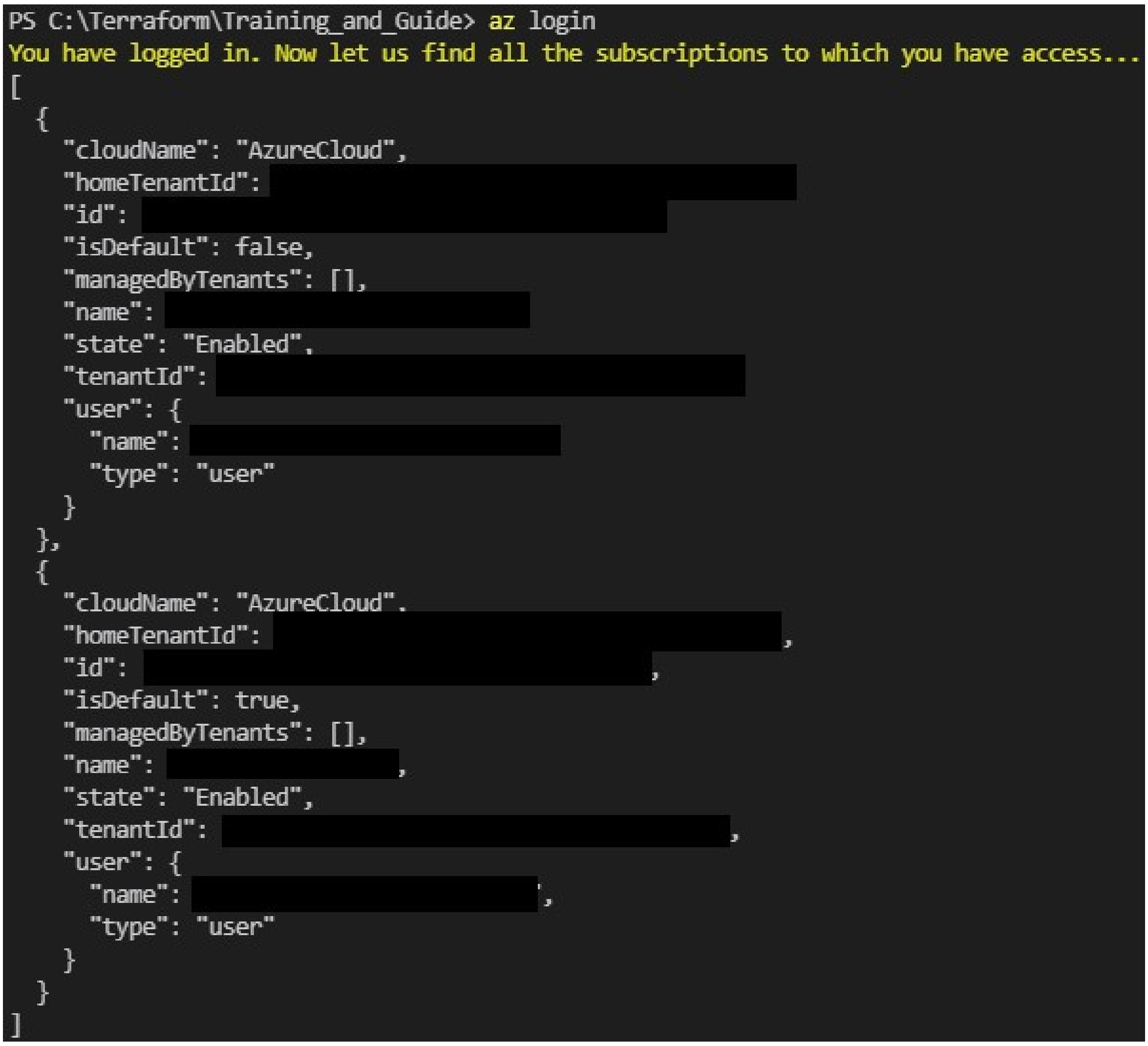
Peter Beckendorf
[redacted]
Signed in

Peter Beckendorf
[redacted]
Signed in



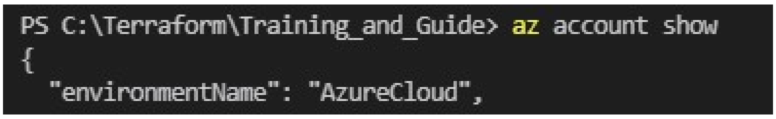
**You have logged into Microsoft Azure!**

You can close this window, or we will redirect you to the Azure CLI documents in 10 seconds.



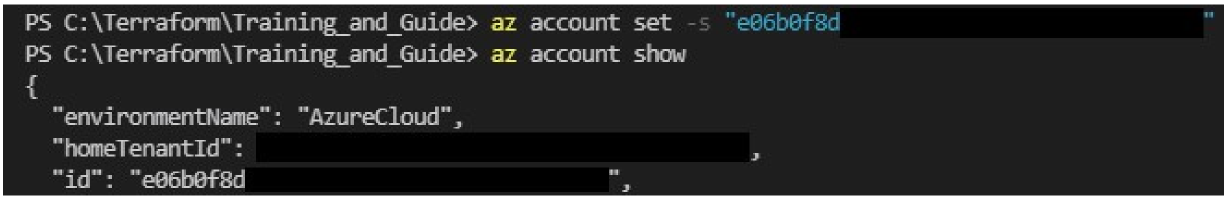
```
PS C:\Terraform\Training_and_Guide> az login
You have logged in. Now let us find all the subscriptions to which you have access...
[
  {
    "cloudName": "AzureCloud",
    "homeTenantId": [redacted]
    "id": [redacted]
    "isDefault": false,
    "managedByTenants": [],
    "name": [redacted]
    "state": "Enabled",
    "tenantId": [redacted]
    "user": {
      "name": [redacted]
      "type": "user"
    }
  },
  {
    "cloudName": "AzureCloud",
    "homeTenantId": [redacted],
    "id": [redacted],
    "isDefault": true,
    "managedByTenants": [],
    "name": [redacted],
    "state": "Enabled",
    "tenantId": [redacted],
    "user": {
      "name": [redacted],
      "type": "user"
    }
  }
]
```

- Check if your in the correct subsriction with ***az account show***



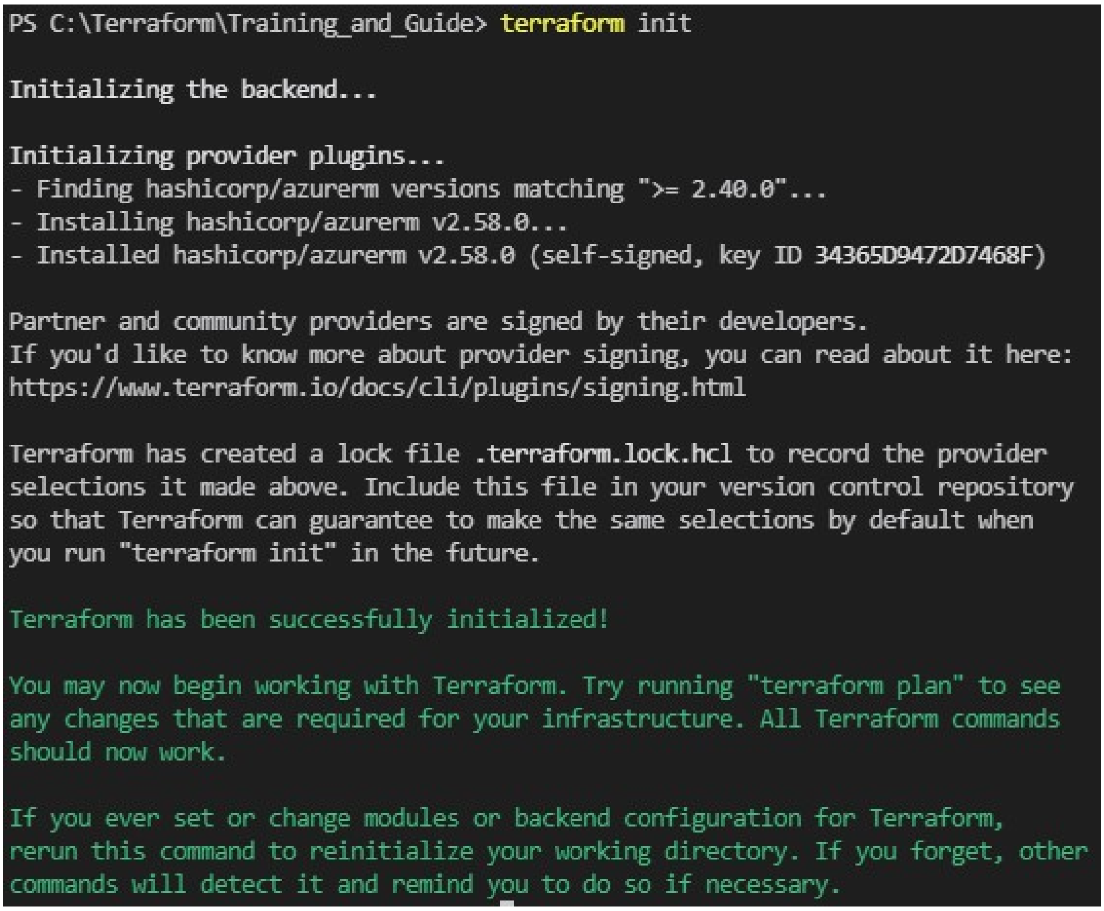
```
PS C:\Terraform\Training_and_Guide> az account show
{
  "environmentName": "AzureCloud",
```

- If your not tied to the right subscription, you can change this with ***az account set -s "***" ->*** **put in the Subscription ID or Subscription Name**



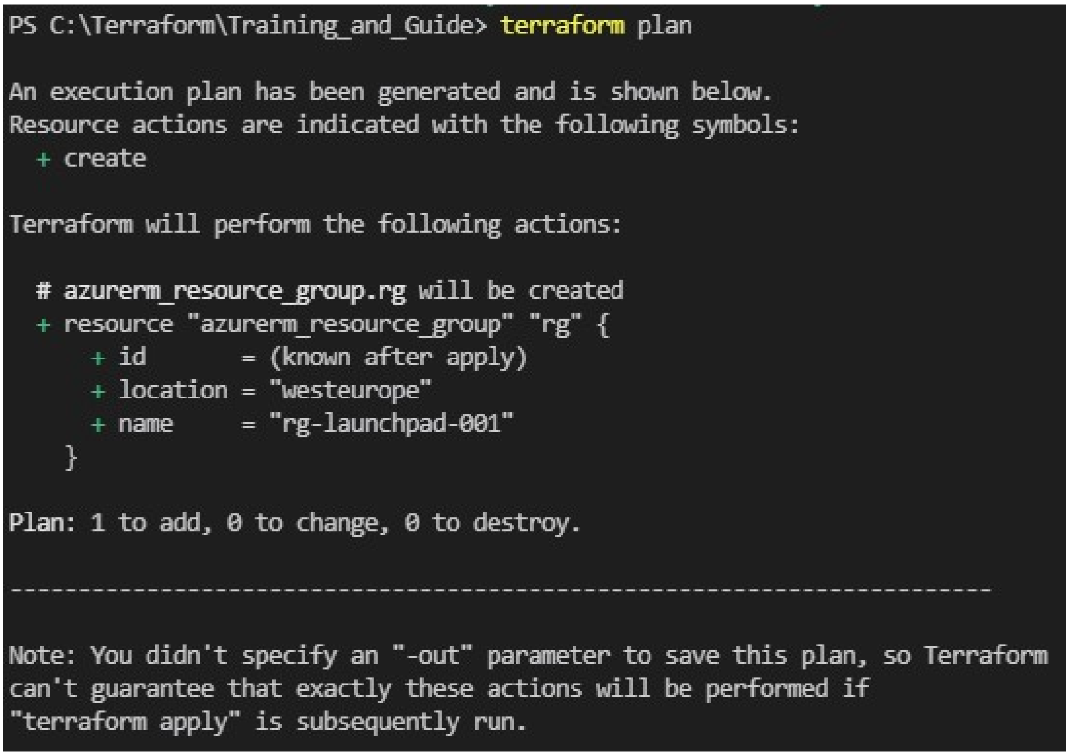
```
PS C:\Terraform\Training_and_Guide> az account set -s "e06b0f8d[redacted]"
PS C:\Terraform\Training_and_Guide> az account show
{
  "environmentName": "AzureCloud",
  "homeTenantId": [redacted],
  "id": "e06b0f8d[redacted]",
```

- Now proceed with the terraform deployment and start with ***terraform init***



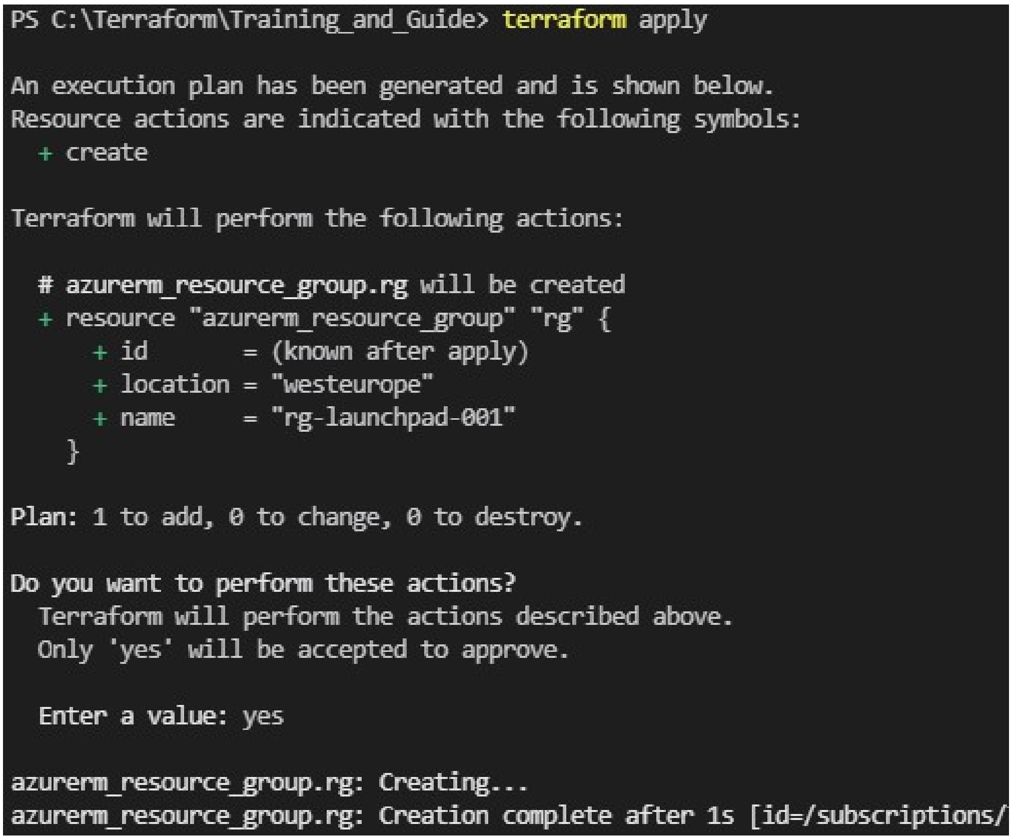
```
PS C:\Terraform\Training_and_Guide> terraform init

Initializing the backend...

Initializing provider plugins...
- Finding hashicorp/azurerm versions matching ">= 2.40.0"...
- Installing hashicorp/azurerm v2.58.0...
- Installed hashicorp/azurerm v2.58.0 (self-signed, key ID 34365D9472D7468F)

Partner and community providers are signed by their developers.
If you'd like to know more about provider signing, you can read about it here:
https://www.terraform.io/docs/cli/plugins/signing.html

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.
```

- Next will be a ***terraform plan*** to see what will happen when deploying the code



```
PS C:\Terraform\Training_and_Guide> terraform plan

An execution plan has been generated and is shown below.
Resource actions are indicated with the following symbols:
  + create

Terraform will perform the following actions:

  # azurerm_resource_group.rg will be created
  + resource "azurerm_resource_group" "rg" {
      + id       = (known after apply)
      + location = "westeurope"
      + name     = "rg-launchpad-001"
    }

Plan: 1 to add, 0 to change, 0 to destroy.

------------------------------------------------------------------------

Note: You didn't specify an "-out" parameter to save this plan, so Terraform
can't guarantee that exactly these actions will be performed if
"terraform apply" is subsequently run.
```

- Now do a ***terraform apply*** to get the code deployed and acknowledge to deploy it with a ***yes***

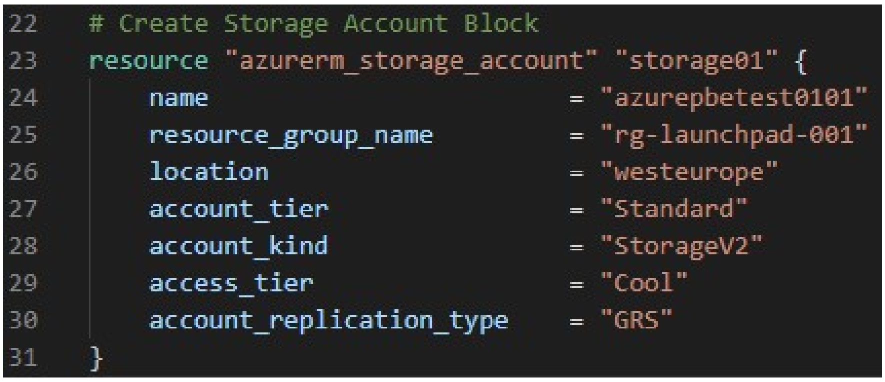


```
PS C:\Terraform\Training_and_Guide> terraform apply

An execution plan has been generated and is shown below.
Resource actions are indicated with the following symbols:
  + create

Terraform will perform the following actions:

  # azurerm_resource_group.rg will be created
  + resource "azurerm_resource_group" "rg" {
      + id       = (known after apply)
      + location = "westeurope"
      + name     = "rg-launchpad-001"
    }

Plan: 1 to add, 0 to change, 0 to destroy.

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

azurerm_resource_group.rg: Creating...
azurerm_resource_group.rg: Creation complete after 1s [id=/subscriptions/
```

- Now the Resources are created and cen be also found in the Azure Portal

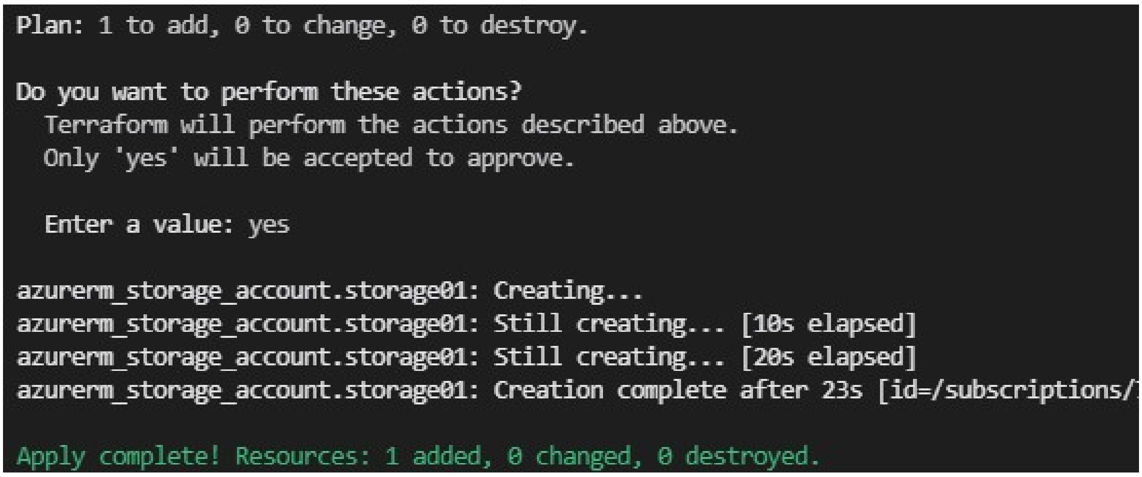
## Task 2

- Now to add the Storage Account Configuration, return to the Script within VS Code
- Add another Block for the Storage Account



```
# Create Storage Account Block
resource "azurerm_storage_account" "storage01" {
    name                        = "azurepbetest0101"
    resource_group_name         = "rg-launchpad-001"
    location                    = "westeurope"
    account_tier                = "Standard"
    account_kind                = "StorageV2"
    access_tier                 = "Cool"
    account_replication_type    = "GRS"
}
```

- and again perform a ***terraform plan*** and after that a ***terraform apply***

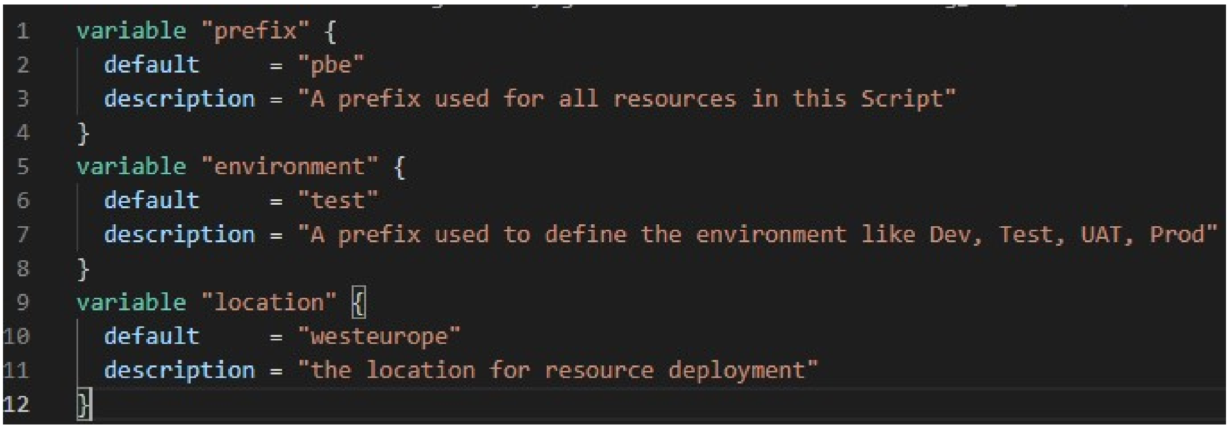


```
Plan: 1 to add, 0 to change, 0 to destroy.

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

azurerm_storage_account.storage01: Creating...
azurerm_storage_account.storage01: Still creating... [10s elapsed]
azurerm_storage_account.storage01: Still creating... [20s elapsed]
azurerm_storage_account.storage01: Creation complete after 23s [id=/subscriptions/

Apply complete! Resources: 1 added, 0 changed, 0 destroyed.
```

- those changes can now again also be found in the Azure Portal

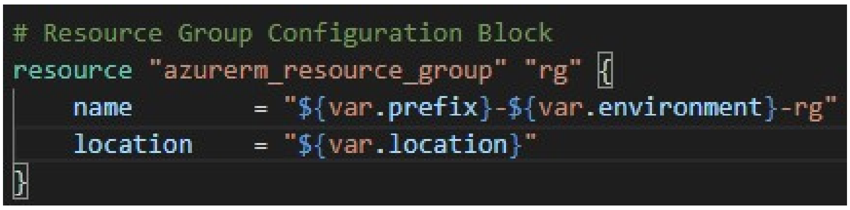
## Task 3

- in the Folder where the main.tf file is located, create a ***variables.tf*** file and open this one with Visual Studio Code
- Add the following variables configurations to this File (prefix will be your personal prefix)



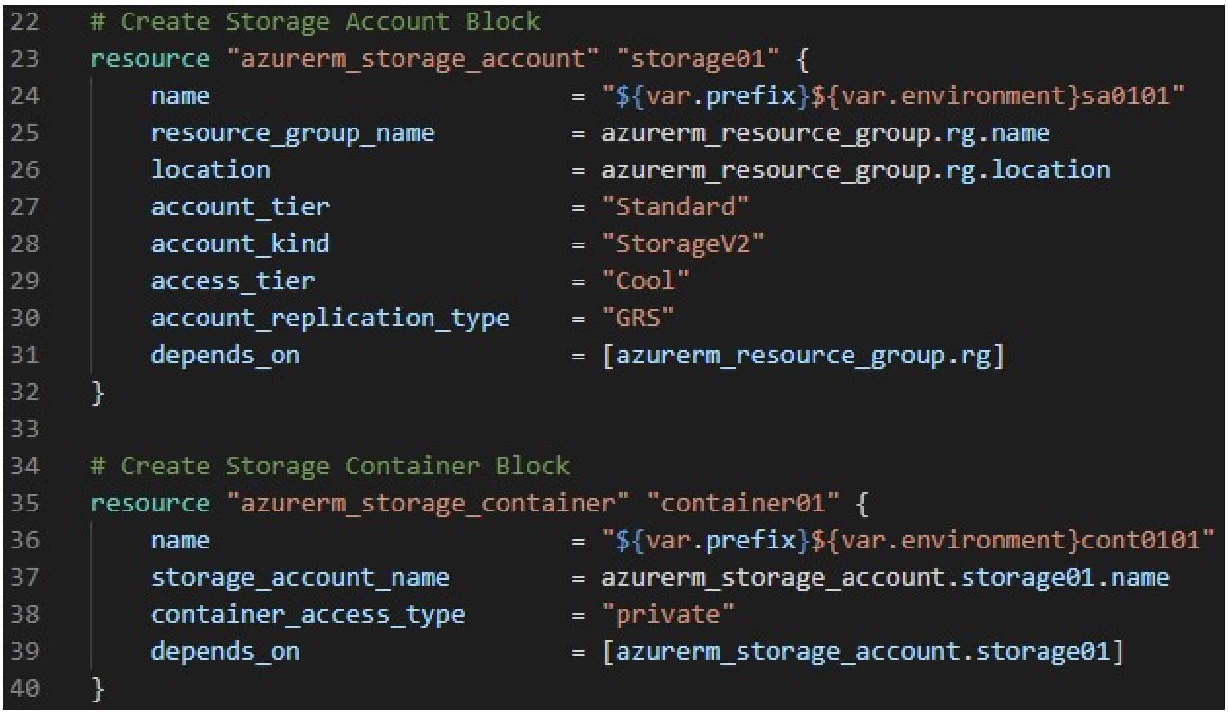
```
variable "prefix" {
  default     = "pbe"
  description = "A prefix used for all resources in this Script"
}
variable "environment" {
  default     = "test"
  description = "A prefix used to define the environment like Dev, Test, UAT, Prod"
}
variable "location" {
  default     = "westeurope"
  description = "the location for resource deployment"
}
```

- Then change to the main.tf file and adjust the resource group section
- reference to the variables file



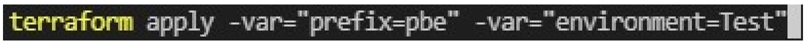
```
# Resource Group Configuration Block
resource "azurerm_resource_group" "rg" {
    name         = "${var.prefix}-${var.environment}-rg"
    location     = "${var.location}"
}
```

- you should now also add the storage container block, take care about the globally unique name and also about the dependency between the resources



```
# Create Storage Account Block
resource "azurerm_storage_account" "storage01" {
    name                         = "${var.prefix}${var.environment}sa0101"
    resource_group_name          = azurerm_resource_group.rg.name
    location                     = azurerm_resource_group.rg.location
    account_tier                 = "Standard"
    account_kind                 = "StorageV2"
    access_tier                  = "Cool"
    account_replication_type     = "GRS"
    depends_on                   = [azurerm_resource_group.rg]
}

# Create Storage Container Block
resource "azurerm_storage_container" "container01" {
    name                         = "${var.prefix}${var.environment}cont0101"
    storage_account_name         = azurerm_storage_account.storage01.name
    container_access_type        = "private"
    depends_on                   = [azurerm_storage_account.storage01]
}
```

- you can also pass variables while doing the ***terraform apply*** command, which would look like



```
terraform apply -var="prefix=pbe" -var="environment=Test"
```