Name: Muskan Chandiramani D15C Roll No: 05

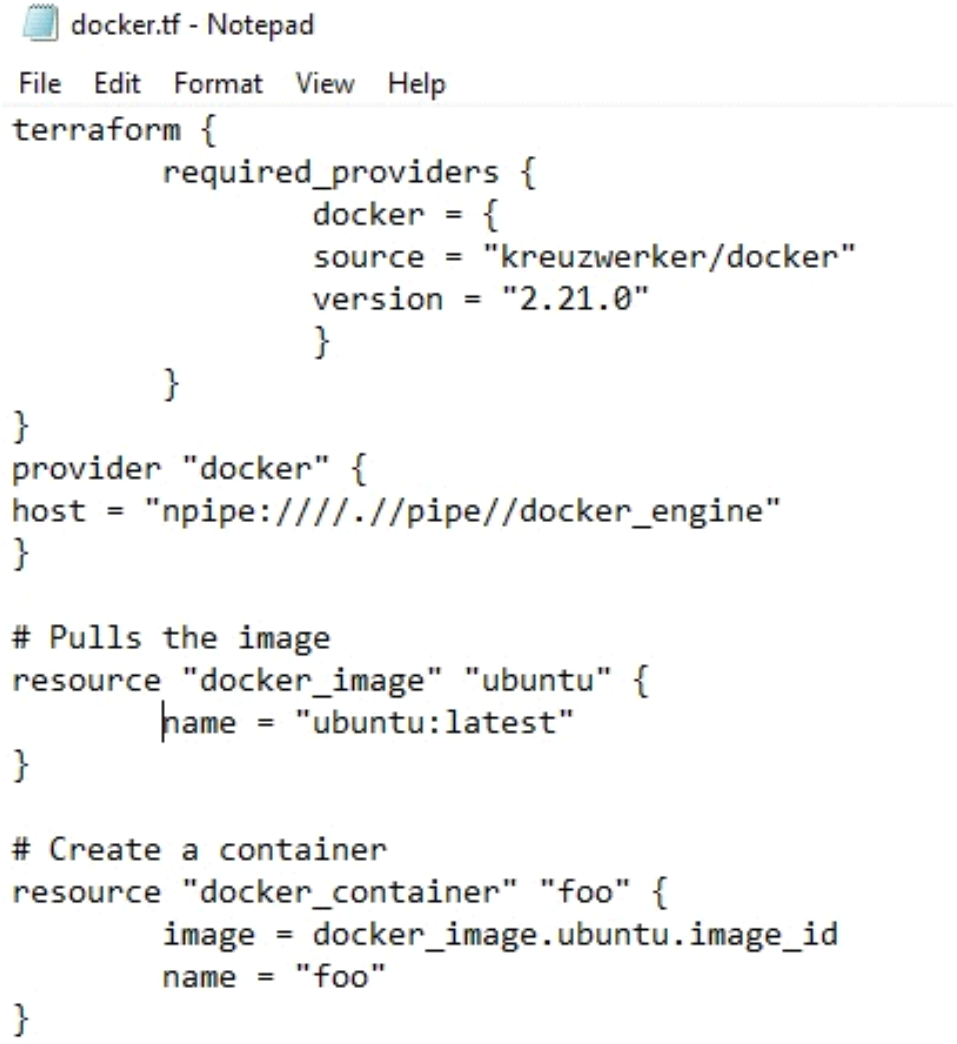
Experiment No. 6

- Creating a docker image using terraform

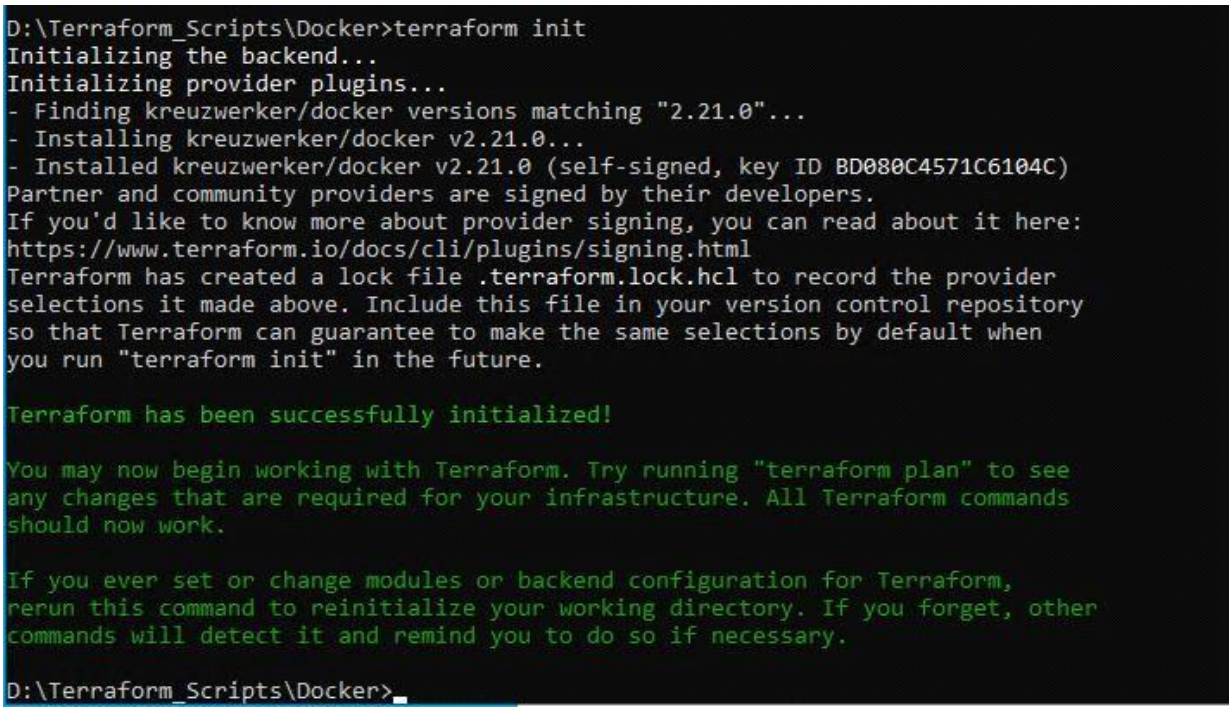
```
PS C:\ProgramData\Microsoft\Windows\Start Menu> Docker --version
Docker version 27.1.1, build 6312585
PS C:\ProgramData\Microsoft\Windows\Start Menu> docker

Usage:  docker [OPTIONS] COMMAND

A self-sufficient runtime for containers

Common Commands:
  run         Create and run a new container from an image
  exec        Execute a command in a running container
  ps          List containers
  build       Build an image from a Dockerfile
  pull        Download an image from a registry
  push        Upload an image to a registry
  images      List images
  login       Log in to a registry
  logout      Log out from a registry
  search      Search Docker Hub for images
  version     Show the Docker version information
  info        Display system-wide information

Management Commands:
  builder     Manage builds
  buildx*     Docker Buildx
  checkpoint  Manage checkpoints
  compose*    Docker Compose
  container   Manage containers
  context     Manage contexts
  debug*      Get a shell into any image or container
  desktop*    Docker Desktop commands (Alpha)
  dev*        Docker Dev Environments
  extension*  Manages Docker extensions
  feedback*   Provide feedback, right in your terminal!
  image       Manage images
```

- Create a folder named ‘Terraform Scripts’ in which we save our different types of scripts which will be further used in this experiment.

- Create a new folder named ‘Docker’ in the ‘TerraformScripts’ folder. Then create a new docker.tf file using a text editor and write the following contents into it to create a Ubuntu Linux container.



- Execute Terraform Init command to initialize the resources



- Execute Terraform plan to see the available resources

```
D:\Terraform_Scripts\Docker>terraform plan

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

Terraform will perform the following actions:

  # docker_container.foo will be created
  + resource "docker_container" "foo" {
      + attach           = false
      + bridge           = (known after apply)
      + command          = (known after apply)
      + container_logs   = (known after apply)
      + entrypoint       = (known after apply)
      + env              = (known after apply)
      + exit_code        = (known after apply)
      + gateway          = (known after apply)
      + hostname         = (known after apply)
      + id               = (known after apply)
      + image            = (known after apply)
      + init             = (known after apply)
      + ip_address       = (known after apply)
      + ip_prefix_length = (known after apply)
      + ipc_mode         = (known after apply)
      + log_driver       = (known after apply)
      + logs             = false
      + must_run         = true
      + name             = "foo"
      + network_data     = (known after apply)
      + read_only        = false
      + remove_volumes   = true
      + restart          = "no"
      + rm               = false
      + runtime          = (known after apply)
      + security_opts    = (known after apply)
      + shm_size         = (known after apply)
      + start            = true
      + stdin_open       = false
      + stop_signal      = (known after apply)
      + stop_timeout     = (known after apply)
      + tty              = false

      + healthcheck (known after apply)

      + labels (known after apply)
    }

  # docker_image.ubuntu will be created
  + resource "docker_image" "ubuntu" {
      + id          = (known after apply)
      + image_id    = (known after apply)
      + latest      = (known after apply)
      + name        = "ubuntu:latest"
      + output      = (known after apply)
      + repo_digest = (known after apply)
    }

Plan: 2 to add, 0 to change, 0 to destroy.
```

- Execute Terraform apply to apply the configuration, which will automatically create and run the Ubuntu Linux container based on our configuration. Using command : “terraform apply”

- Check Docker images, Before and After Executing Apply step

```
D:\Terraform_Scripts\Docker>docker images
REPOSITORY                                  TAG                                 IMAGE ID       CREATED       SIZE
mcr.microsoft.com/dotnet/framework/aspnet   4.8-windowsservercore-ltsc2022      0b1ef1176a57   6 weeks ago   5.43GB
mcr.microsoft.com/dotnet/framework/sdk      4.8-windowsservercore-ltsc2022      c3f8c2735565   6 weeks ago   9.04GB
mcr.microsoft.com/dotnet/framework/runtime  4.8-windowsservercore-ltsc2022      e69ea8a5ec1b   6 weeks ago   5.1GB
mcr.microsoft.com/windows/servercore        ltsc2022                            e60f47e635b7   7 weeks ago   4.84GB
mcr.microsoft.com/windows/nanoserver        ltsc2022                            f0ca29645006   7 weeks ago   292MB

D:\Terraform_Scripts\Docker>
```

```
D:\Terraform_Scripts\Docker>docker images
REPOSITORY                                  TAG                                 IMAGE ID       CREATED          SIZE
mcr.microsoft.com/dotnet/framework/aspnet   4.8-windowsservercore-ltsc2022      0b1ef1176a57   6 weeks ago      5.43GB
mcr.microsoft.com/dotnet/framework/sdk      4.8-windowsservercore-ltsc2022      c3f8c2735565   6 weeks ago      9.04GB
mcr.microsoft.com/dotnet/framework/runtime  4.8-windowsservercore-ltsc2022      e69ea8a5ec1b   6 weeks ago      5.1GB
mcr.microsoft.com/windows/servercore        ltsc2022                            e60f47e635b7   7 weeks ago      4.84GB
mcr.microsoft.com/windows/nanoserver        ltsc2022                            f0ca29645006   7 weeks ago      292MB
ubuntu                                      Latest                              2dc39ba859dc   2 minutes ago    77.8MB
```

- Execute Terraform destroy to delete the configuration, which will automatically delete the Ubuntu Container.

- Check Docker images, After Executing Destroy step

```
D:\Terraform_Scripts\Docker>docker images
REPOSITORY                                  TAG                                 IMAGE ID       CREATED       SIZE
mcr.microsoft.com/dotnet/framework/aspnet   4.8-windowsservercore-ltsc2022      0b1ef1176a57   6 weeks ago   5.43GB
mcr.microsoft.com/dotnet/framework/sdk      4.8-windowsservercore-ltsc2022      c3f8c2735565   6 weeks ago   9.04GB
mcr.microsoft.com/dotnet/framework/runtime  4.8-windowsservercore-ltsc2022      e69ea8a5ec1b   6 weeks ago   5.1GB
mcr.microsoft.com/windows/servercore        ltsc2022                            e60f47e635b7   7 weeks ago   4.84GB
mcr.microsoft.com/windows/nanoserver        ltsc2022                            f0ca29645006   7 weeks ago   292MB

D:\Terraform_Scripts\Docker>
```