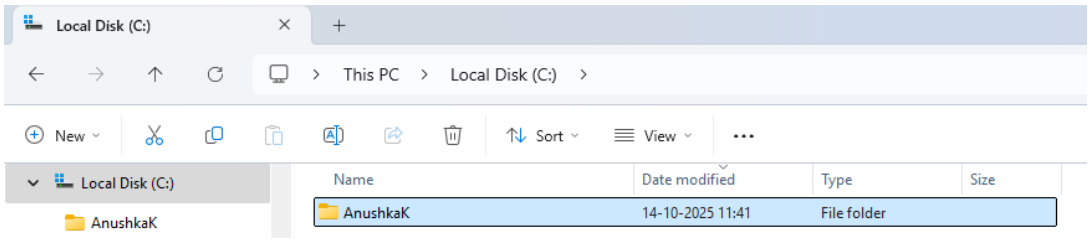
St. Francis Institute of Technology
Borivali (West), Mumbai-400103
Department of Information Technology
ADL Practical Exam

Name: Anushka Kotal	Date: 14\10\25
Class: TE INFT A	Exam seat no:
PID: 231055	Time: 11:15 to 1:15
Roll No: 52	No. of Pages:8
Duration: One Hour	

Sr No	**Problem Statement : To deploy and manage and NGINX web server container using Terraform with Docker as the provider**
1.	Step 1 (creation/configuration/initial step(s)): **Observation**: Here we created folder name AnushkaK in local disk. Screenshot 1: 
2.	Step 2 (internal step 1): **Observation**: Here opened Atom in that i opened my folder name AnushkaK. In that i created two files ie. docker.tf and index.html. In docker..tf we wrote the code to create docker image_ngnix image. And in index.html we wrote the code to show the text in localhost:8082 in nginx server and put the css. Screenshot 2:

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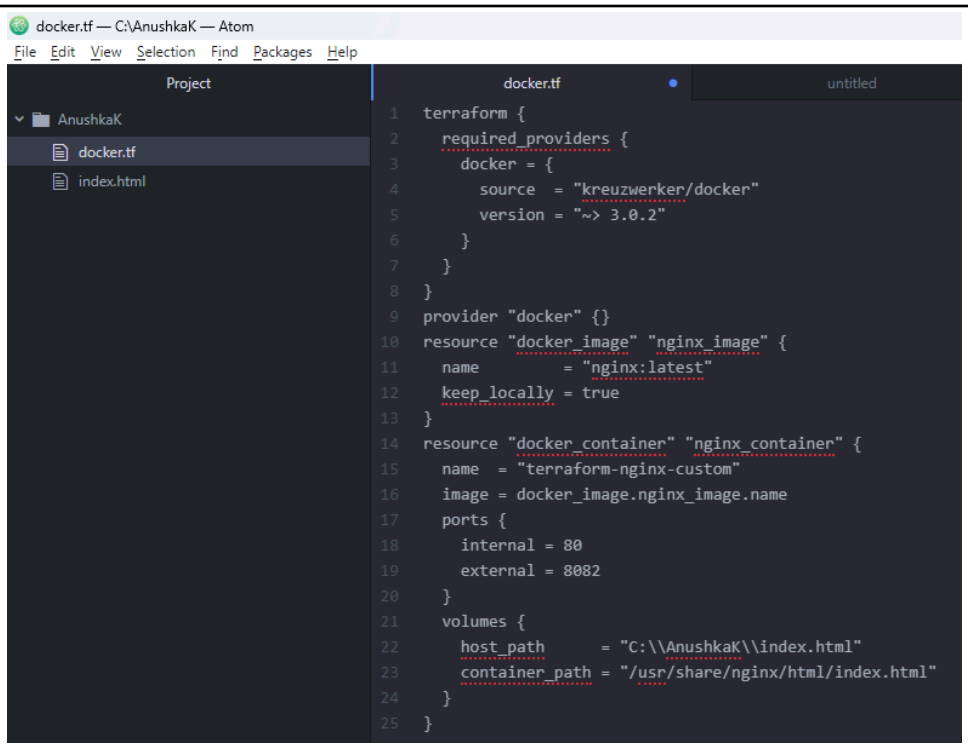

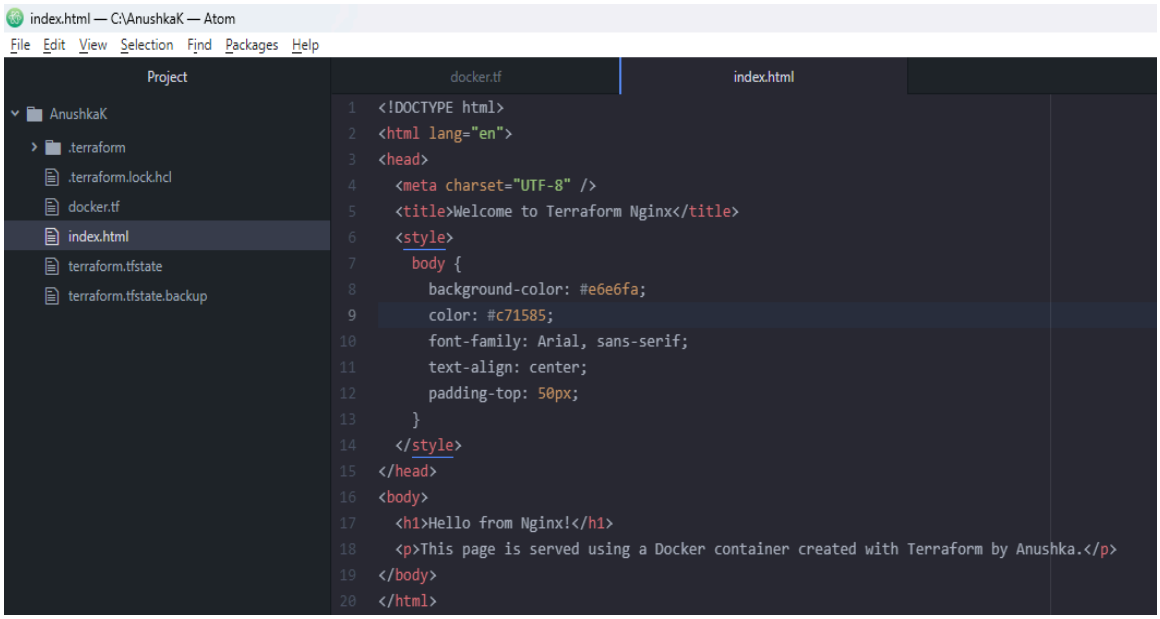

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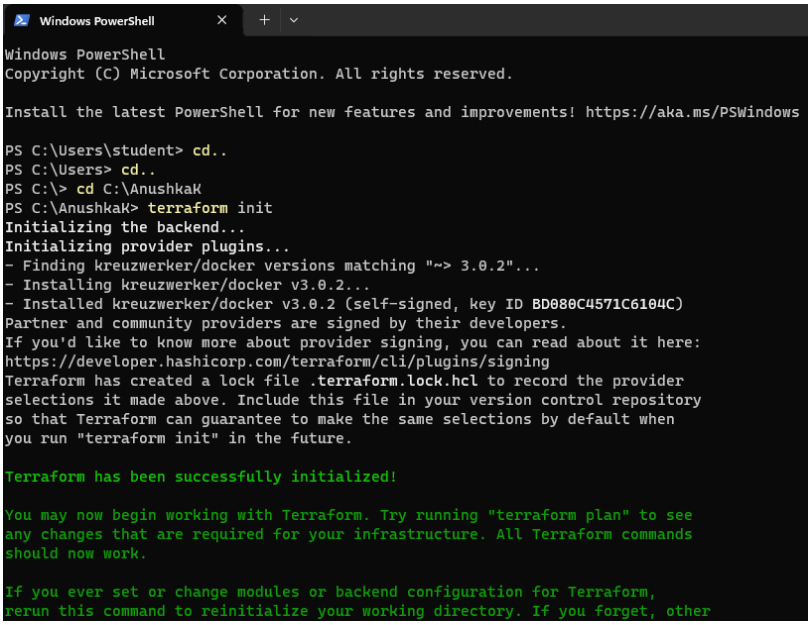
3.	Step 3 (internal step 2): **Observation:** Here we opened Windows powershell in that i put my directory of my folder ie. C:\AnushkaK then we run the terraform commands ie. terraform init, terraform plan, terraform apply Screenshot 3: 

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```
PS C:\AnushkaK> terraform plan

Terraform used the selected providers to generate the following execution plan. Resource a
following symbols:
  + create

Terraform will perform the following actions:

  # docker_container.nginx_container will be created
  + resource "docker_container" "nginx_container" {
      + attach                                      = false
      + bridge                                      = (known after apply)
      + command                                     = (known after apply)
      + container_logs                              = (known after apply)
      + container_read_refresh_timeout_milliseconds = 15000
      + entrypoint                                  = (known after apply)
      + env                                         = (known after apply)
      + exit_code                                   = (known after apply)
      + hostname                                    = (known after apply)
      + id                                          = (known after apply)
      + image                                       = "nginx:latest"
      + init                                        = (known after apply)
      + ipc_mode                                    = (known after apply)
      + log_driver                                  = (known after apply)
      + logs                                        = false
      + must_run                                    = true
      + name                                        = "terraform-nginx-custom"
      + 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
          + ip       = "0.0.0.0"
          + protocol = "tcp"
        }

      + volumes {
          + container_path = "/usr/share/nginx/html/index.html"
          + host_path      = "C:\\AnushkaK\\index.html"
            # (2 unchanged attributes hidden)
        }
    }

  # docker_image.nginx_image will be created
  + resource "docker_image" "nginx_image" {
      + id           = (known after apply)
      + image_id     = (known after apply)
      + keep_locally = true
      + name         = "nginx:latest"
      + repo_digest  = (known after apply)
    }

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

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```
PS C:\AnushkaK> terraform apply

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

Terraform will perform the following actions:

  # docker_container.nginx_container will be created
  + resource "docker_container" "nginx_container" {
      + attach                                      = false
      + bridge                                      = (known after apply)
      + command                                     = (known after apply)
      + container_logs                              = (known after apply)
      + container_read_refresh_timeout_milliseconds = 15000
      + entrypoint                                  = (known after apply)
      + env                                         = (known after apply)
      + exit_code                                   = (known after apply)
      + hostname                                    = (known after apply)
      + id                                          = (known after apply)
      + image                                       = "nginx:latest"
      + init                                        = (known after apply)
      + ipc_mode                                    = (known after apply)
      + log_driver                                  = (known after apply)
      + logs                                        = false
      + must_run                                    = true
      + name                                        = "terraform-nginx-custom"
      + 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
      + wait                                        = false
      + volumes {
          + container_path = "/usr/share/nginx/html/index.html"
          + host_path      = "C:\\AnushkaK\\index.html"
            # (2 unchanged attributes hidden)
        }
    }

  # docker_image.nginx_image will be created
  + resource "docker_image" "nginx_image" {
      + id           = (known after apply)
      + image_id     = (known after apply)
      + keep_locally = true
      + name         = "nginx:latest"
      + repo_digest  = (known after apply)
    }

Plan: 2 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

docker_image.nginx_image: Creating...
docker_image.nginx_image: Creation complete after 7s [id=sha256:3b7732505933ca591ce4a6d860cb713ad96
3486a0d6nginx:latest]
docker_container.nginx_container: Creating...
docker_container.nginx_container: Creation complete after 1s [id=21f6df30b79e761fc3c798624cfa4055ec
fcbe4741a]

Apply complete! Resources: 2 added, 0 changed, 0 destroyed.
PS C:\AnushkaK>
```

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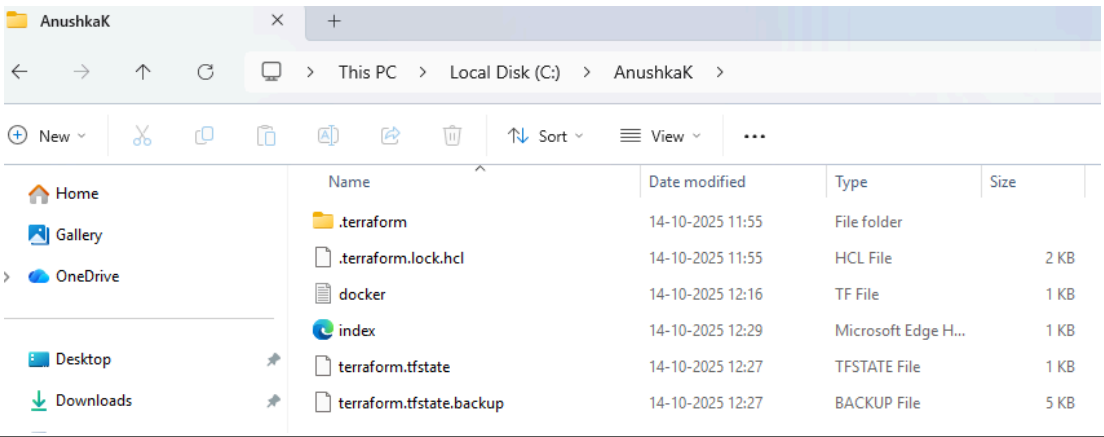
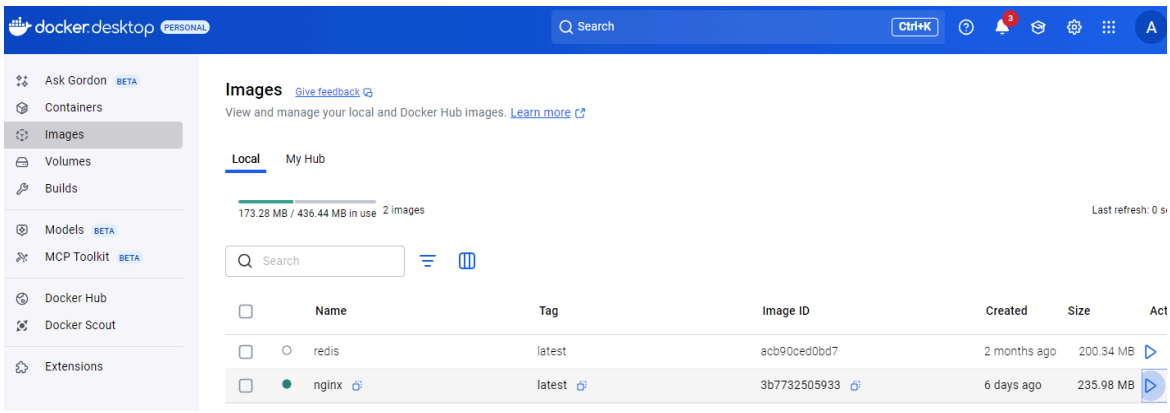
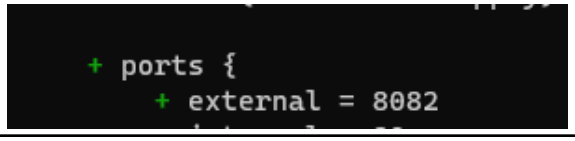


4. Step 4 (internal step 3):
Observation: Here we opened Docker Desktop and the terraform commands we applied to create docker_image.nginx_image.
Screenshot 4:



5. Step 5 (stop/delete step) :
Observation: Here in the browser we opened the localhost which was given in windows powershell while executing terraform apply command. In the browser we typed localhost:8082 and we go the output showing Hello from Nginx!.
Then we applied terraform destroy to terminate the docker image_ngnix image.
Screenshot 5:



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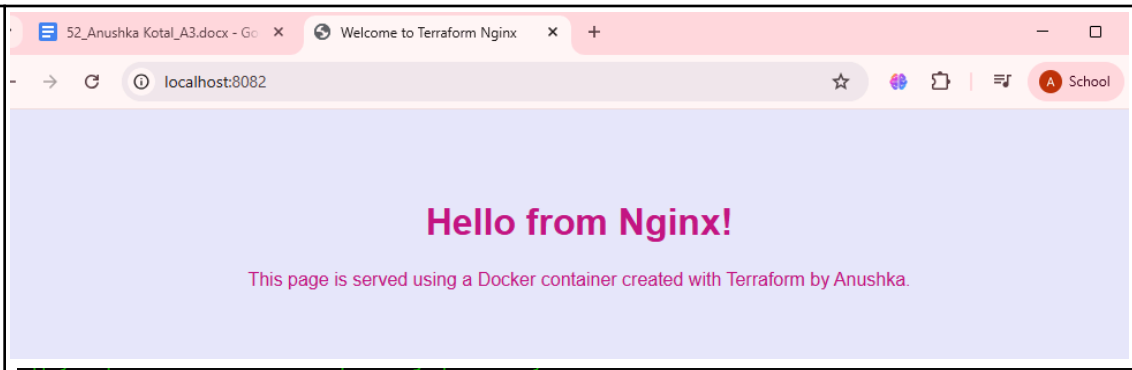


```
PS C:\AnushkaK> terraform destroy
docker_image.nginx_image: Refreshing state... [id=sha256:3b7732505933ca591ce4a6d860cb713ad96a3176b82f7979a8dfa9973486a0d
6nginx:latest]
docker_container.nginx_container: Refreshing state... [id=21f6df30b79e761fc3c798624cfa4055ec112bb89c1a1026142978ffcbe474
1a]

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

Terraform will perform the following actions:

  # docker_container.nginx_container will be destroyed
  - resource "docker_container" "nginx_container" {
      - attach                                      = false -> null
      - command                                     = [
          - "nginx",
          - "-g",
          - "daemon off;",
        ] -> null
      - container_read_refresh_timeout_milliseconds = 15000 -> null
      - cpu_shares                                  = 0 -> null
      - dns                                         = [] -> null
      - dns_opts                                    = [] -> null
      - dns_search                                  = [] -> null
      - entrypoint                                  = [
          - "/docker-entrypoint.sh",
        ] -> null
      - env                                         = [] -> null
      - group_add                                   = [] -> null
      - hostname                                    = "21f6df30b79e" -> null
      - id                                          = "21f6df30b79e761fc3c798624cfa4055ec112bb89c1a1026142978ffcbe4741a"
 -> null
      - image                                       = "sha256:3b7732505933ca591ce4a6d860cb713ad96a3176b82f7979a8dfa99734
86a0d6" -> null
      - init                                        = false -> null
      - ipc_mode                                    = "private" -> null
      - log_driver                                  = "json-file" -> null
      - log_opts                                    = {} -> null
      - logs                                        = false -> null
```

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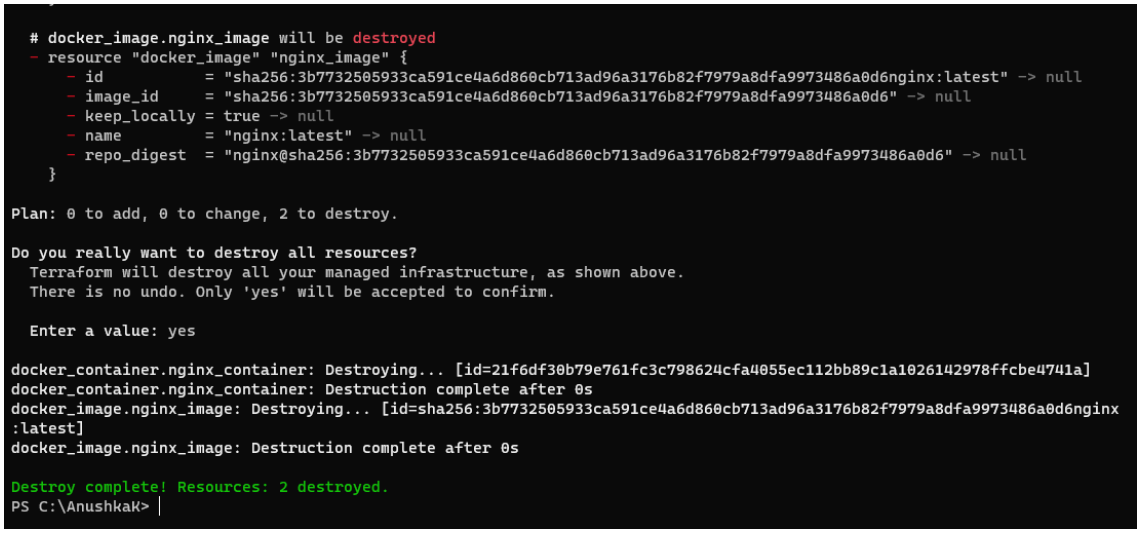

```
  # docker_image.nginx_image will be destroyed
  - resource "docker_image" "nginx_image" {
      - id           = "sha256:3b7732505933ca591ce4a6d860cb713ad96a3176b82f7979a8dfa9973486a0d6nginx:latest" -> null
      - image_id     = "sha256:3b7732505933ca591ce4a6d860cb713ad96a3176b82f7979a8dfa9973486a0d6" -> null
      - keep_locally = true -> null
      - name         = "nginx:latest" -> null
      - repo_digest  = "nginx@sha256:3b7732505933ca591ce4a6d860cb713ad96a3176b82f7979a8dfa9973486a0d6" -> null
    }

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

Do you really want to destroy all resources?
  Terraform will destroy all your managed infrastructure, as shown above.
  There is no undo. Only 'yes' will be accepted to confirm.

  Enter a value: yes

docker_container.nginx_container: Destroying... [id=21f6df30b79e761fc3c798624cfa4055ec112bb89c1a1026142978ffcbe4741a]
docker_container.nginx_container: Destruction complete after 0s
docker_image.nginx_image: Destroying... [id=sha256:3b7732505933ca591ce4a6d860cb713ad96a3176b82f7979a8dfa9973486a0d6nginx
:latest]
docker_image.nginx_image: Destruction complete after 0s

Destroy complete! Resources: 2 destroyed.
PS C:\AnushkaK>
```

Note: Adjust SS to fit in the table row. SS should include username and timestamp. Add rows if needed