Create AWS infrastructure using Terraform

Demonstrate AWS DevOps and Terraform

PIP Task - 1

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Prerequisite

Local Environment Setup

A .AWS Account

A. AWS CLI

B. Terraform .exc

C. Python

D. Tool for SSH Connection

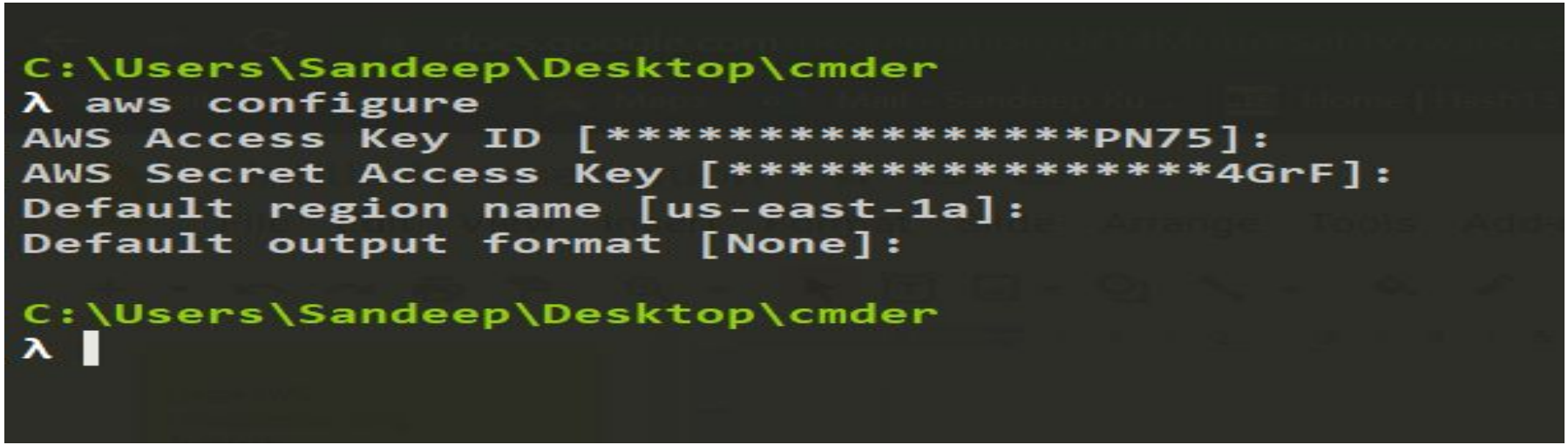
E. Git Bash

F. VS Code Editor

AWS Local Configure

To set up aws Access key and AWS Secret Key in local .aws profile

$ aws configure

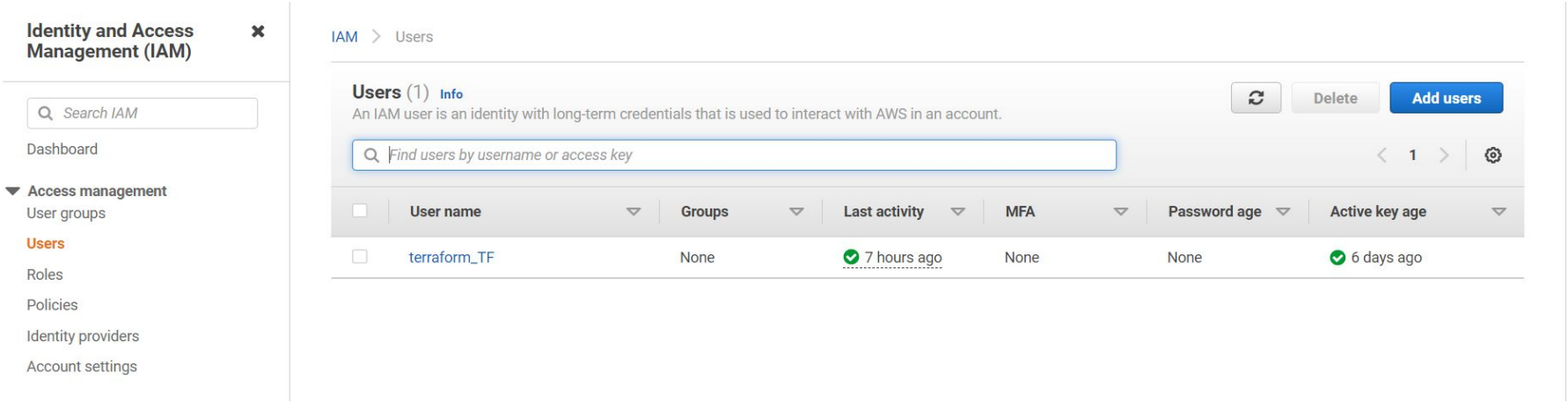


IAM User create

A.Create IAM user Name - terrafrom_TF

B. Attach policy -PowerUserAccess

C.Access key - Programmatic access



Terraform tfstate file store S3 and Dynamodb

```
6   terraform {
7     required_version = "~> 1.0"
8     # Backend block for terraform state
9     backend "s3" {
10      bucket = "ust-global-sandeep-kumar-patel-testing-s3-with-terraform"
11      key    = "HttpdWebServer/terrafrom.tfstate"
12      region = "us-east-1"
13      dynamodb_table = "value"
14    }
15    required_providers {
16      aws = {
```

List of Resources creating

1. **Networking**
   A. VPC
   B. Subnet
   C. Internet Gateway
   D. NAT Gateway
   E. Elastic IP
   F. Route Table
   G. Route

2. Storage

   A. EBS

   B. S3

Continue....

3.Backup Storage

A . AWS Ebs Snapshot

4. EC2 Instance

A .AWS Instance

B.AWS Security Group

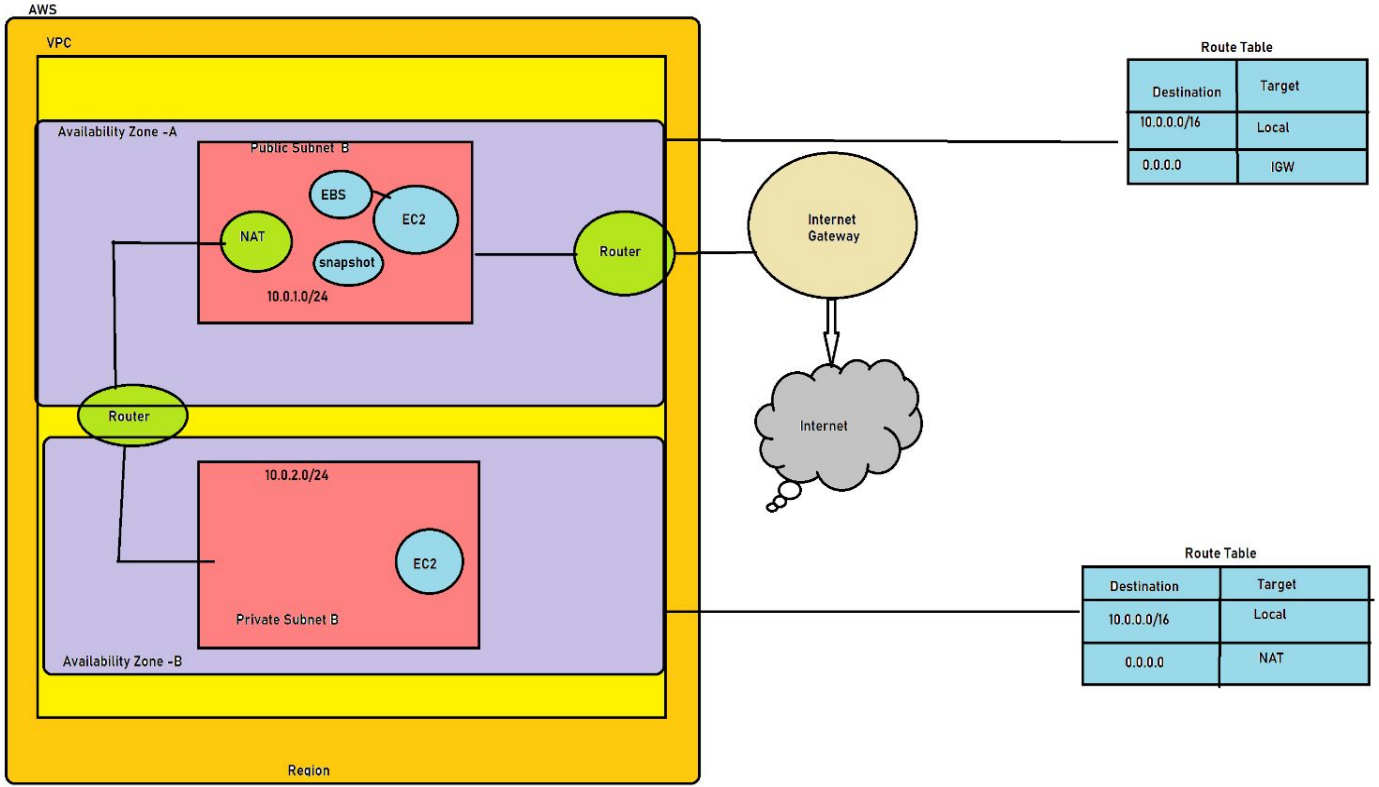
5. Null Resource

A.Local exec

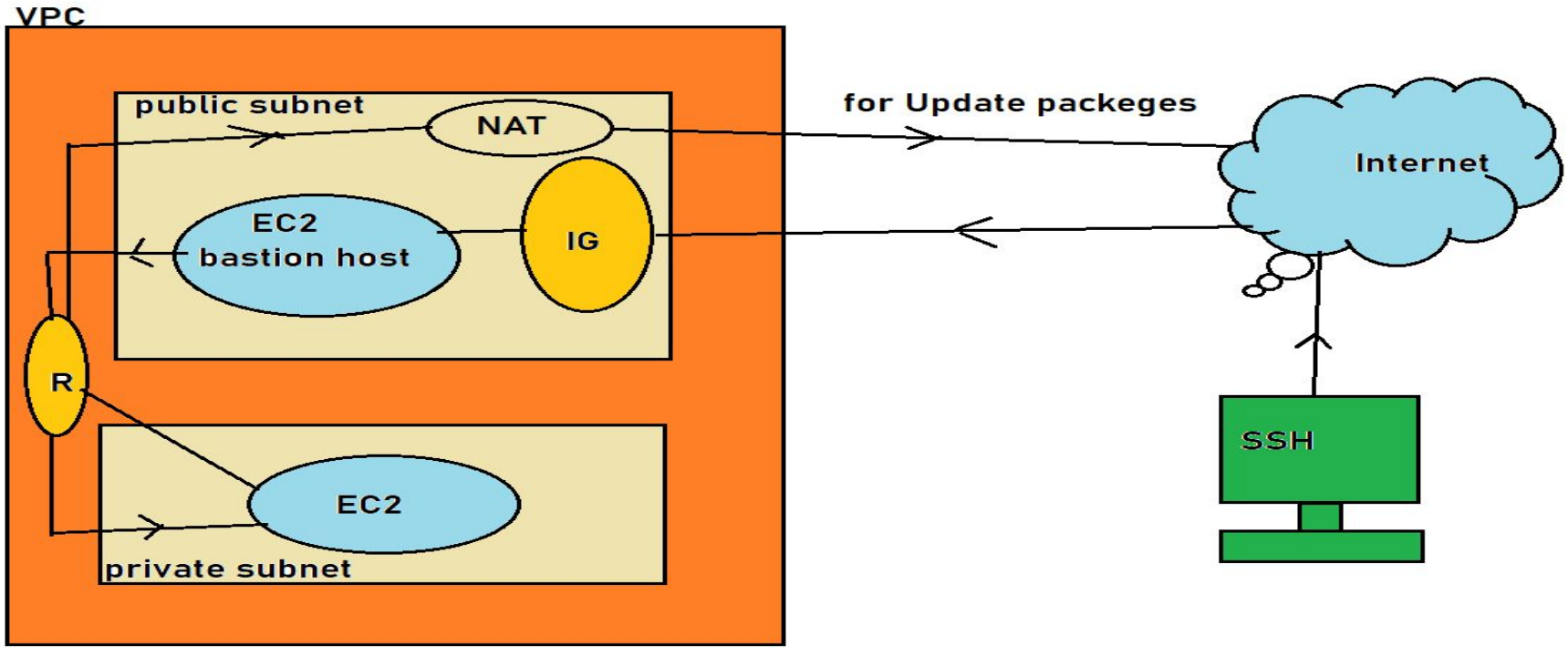
B Remote exec

C.Data

Architectural diagram



Architectural diagram jump box server(Bastion Host)



Terraform Command used

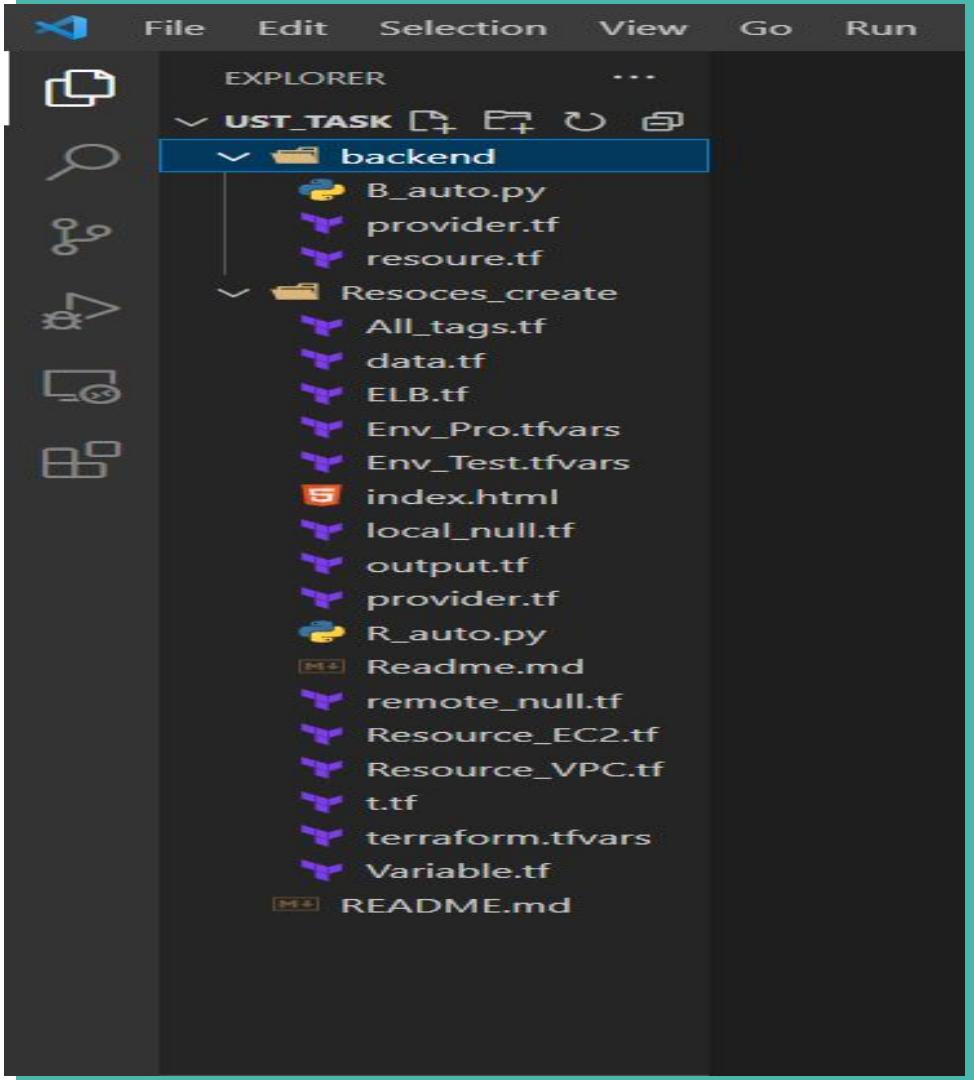
1. terraform init
2. terraform fmt
3. terraform validate
4. terraform plan
5. terraform apply
6. terraform destroy
7. terraform init -reconfigure

Terraform Command used for other env

A. **Local env setup**
    A. terraform apply -auto-approve
    B. terraform destroy -auto-approve
B. **Test env setup**
    A. terraform apply -var-file=Env_Test.tfvars
C. **Pro env Setup**
    A. terraform apply -var-file=Env_Pro.tfvars
D. **Setup Both env**
    A. terraform apply -var-file=Env_Test.tfvars -var-file=Env_Pro.tfvars

File tree

```
C:\Users\Sandeep\Desktop\Ust_task (master -> Master)
λ tree
Folder PATH listing for volume OS
Volume serial number is C0000100 940F:F262
C:.
├──backend
└──Resoces_create
```



Action Plan

VPC Resources

1. Create VPC - Main VPC -Cidr-Block - ”10.0.0.0/16”
2. Create 2 Subnet
    A. Public subnet Cidr-Block - “10.0.1.0/24”
    B. Private subnet Cidr-Block -”10.0.2.0/24”
3. Create 2 Route Table and associate route table
4. Create aws nat gateway and update to route table
5. Create aws internet gateway and update route table
6. Create EIP and associate it IGW

Instances Resources

1. Create 3 EC2 instances
    a. 2 Httpd Web server for hosting pages
    b. 1 DB Server for DB Storage
2. Create EBS for Attached DB Server
3. Create Snapshot for backup drive

Null Resources

1. **Create 3 Null Resources**
    a. Remote exec for install httpd web server
    b. Data for the copy index page to /var/www/html path
    c. Local exec for making inventory file to store IP for other tool like ansible other
    d. Crate null resources for destroy time for other task

Other Activate

Other Activate this script we are used to create resource for dev env,test env ,

Prod env also to run below command

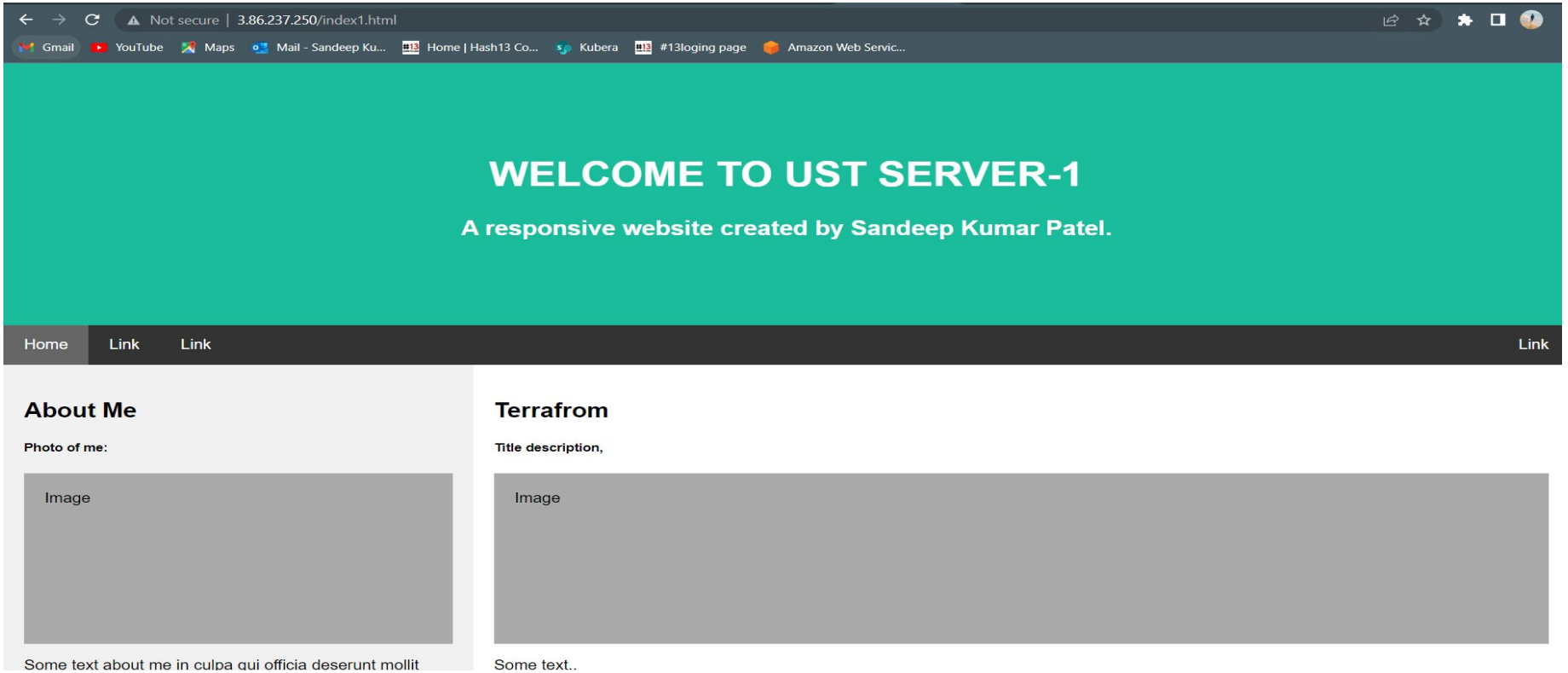
A. **Local env setup**
    A. terraform apply -auto-approve
    B. terraform destroy -auto-approve

B. **Test env setup**
    A. terraform apply -var-file=Env_Test.tfvars

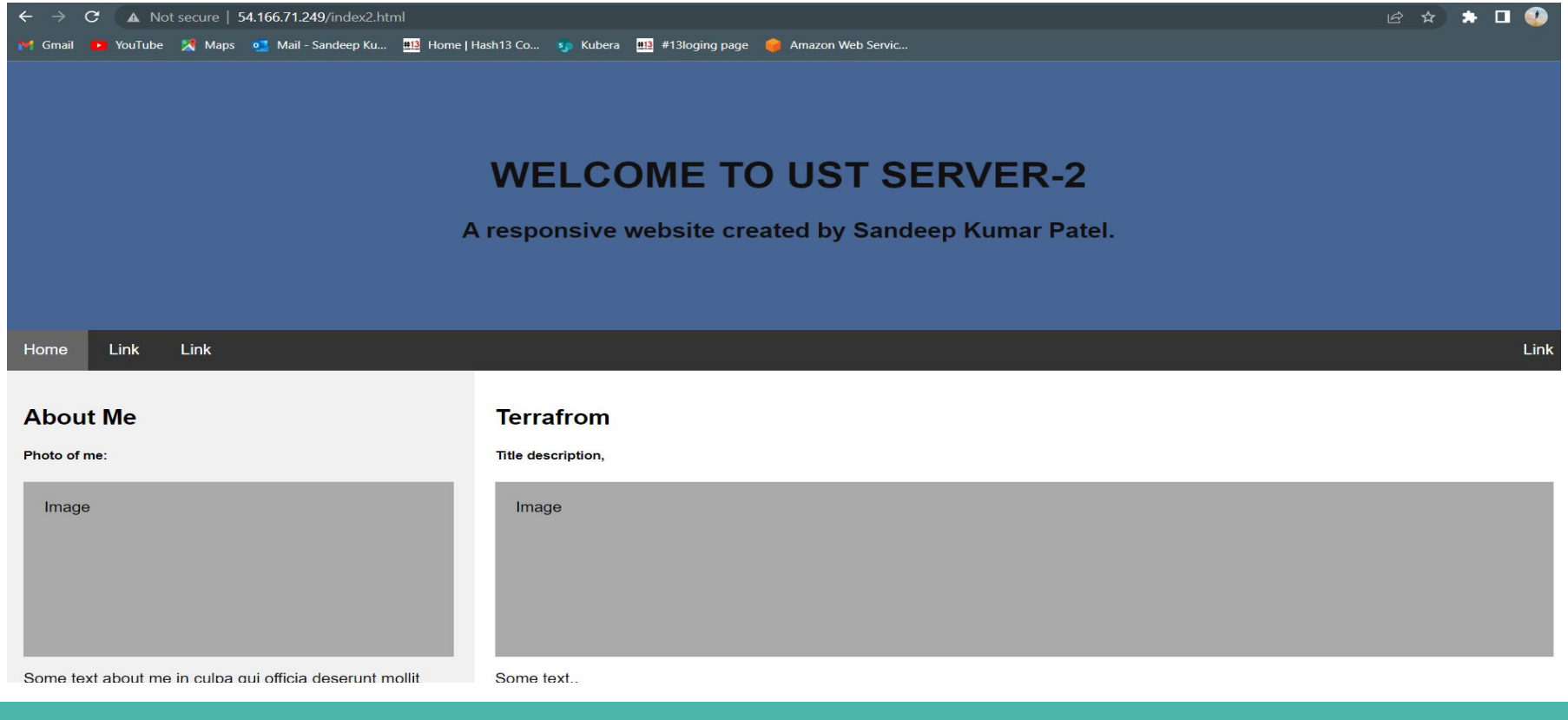
C. **Pro env Setup**
    A. terraform apply -var-file=Env_Pro.tfvars

D. **Setup Both env**
    A. terraform apply -var-file=Env_Test.tfvars -var-file=Env_Pro.tfvars

Output Server -1



Output Server -2



Future Activity

In future this script modified used modul and add to based on requirement

Due to less time only this terraform.tf file create

Thank you for your time and ask any question ???