**DAY-5:**

**TERRAFORM:**

Terraform is an **Infrastructure as Code (IaC)** tool developed by **HashiCorp** that allows users to define and provision infrastructure using a **declarative configuration language**. It supports various cloud providers like **AWS, Azure, GCP, and on-premises** environments.

```
terraform {
  required_providers {
    aws = {
      source = "hashicorp/aws"
      version = "5.92.0"
    }
  }
}

provider "aws" {
   region = "us-east-1"
}
resource "aws_vpc" "myvpc" {
  cidr_block       = "10.0.0.0/16"

  tags = {
    Name = "demovpc"
  }
resource "aws_subnet" "pubsub" {
  vpc_id     = aws_vpc.myvpc.id
  cidr_block = "10.0.1.0/24"
  availability_zone = "us-east-1a"

  tags = {
    Name = "sn1"
  }
}
resource "aws_subnet" "pubsub" {
  vpc_id     = aws_vpc.myvpc.id
  cidr_block = "10.0.2.0/24"
  availability_zone = "us-east-1b"

  tags = {
    Name = "sn2"
  }
}
resource "aws_subnet" "prisub" {
  vpc_id     = aws_vpc.myvpc.id
  cidr_block = "10.0.3.0/24"
  availability_zone = "us-east-1b"
```

```
  tags = {
    Name = "sn3"
  }
}

resource "aws_subnet" "prisub" {
  vpc_id     = aws_vpc.myvpc.id
  cidr_block = "10.0.4.0/24"
  availability_zone = "us-east-1b"

  tags = {
    Name = "sn4"
  }
}
resource "aws_internet_gateway" "tfigw" {
  vpc_id = aws_vpc.myvpc.id

  tags = {
    Name = "tfigw"
  }
}
resource "aws_route_table" "tfpubrt" {
  vpc_id = aws_vpc.myvpc.id

  route {
    cidr_block = "0.0.0.0/0"
    gateway_id = aws_internet_gateway.tfigw.id
  }

  tags = {
    Name = "tfpublicroute"
  }
}
resource "aws_route_table_association" "pubsn1" {
  subnet_id      = aws_subnet.pubsub.id
  route_table_id = aws_route_table.tfpubrt.id
}
resource "aws_route_table_association" "pubsn2" {
  subnet_id      = aws_subnet.pub_sub.id
  route_table_id = aws_route_table.tfpubrt.id
}
resource "aws_eip" "tfeip" {
  domain   = "vpc"
}
resource "aws_nat_gateway" "tfnat" {
  allocation_id = aws_eip.tfeip.id
  subnet_id     = aws_subnet.pub_sub.id

  tags = {
    Name = "gw NAT"
```

```
  }
}
resource "aws_route_table" "tfprirt" {
  vpc_id = aws_vpc.myvpc.id

  route {
    cidr_block = "0.0.0.0/0"
    gateway_id = aws_nat_gateway.tfnat.id
  }

  tags = {
    Name = "tfprivateroute"
  }
}
resource "aws_route_table_association" "prisn3" {
  subnet_id      = aws_subnet.prisub.id
  route_table_id = aws_route_table.tfprirt.id
}
resource "aws_route_table_association" "prisn4" {
  subnet_id      = aws_subnet.pri_sub.id
  route_table_id = aws_route_table.tfprirt.id
}
resource "aws_security_group" "allow_tfsg" {
  name        = "allow_tfsg"
  description = "Allow TLS inbound traffic"
  vpc_id      = aws_vpc.myvpc.id

  ingress {
    description      = "HTTPS "
    from_port        = 443
    to_port          = 443
    protocol         = "tcp"
    cidr_blocks      = ["0.0.0.0/0"]
  }
   ingress {
    description      = "HTTP "
    from_port        = 80
    to_port          = 80
    protocol         = "tcp"
    cidr_blocks      = ["0.0.0.0/0"]
  }
   ingress {
    description      = "SSH"
    from_port        = 22
    to_port          = 22
    protocol         = "tcp"
    cidr_blocks      = ["0.0.0.0/0"]
  }

  egress {
```

```
    from_port        = 0
    to_port          = 0
    protocol         = "-1"
    cidr_blocks      = ["0.0.0.0/0"]
  }

  tags = {
    Name = "TfsecurityGroup"
  }
}
resource "aws_instance" "pub_ins" {
  ami                         = "ami-0fc5d935ebf8bc3bc"
  instance_type               = "t2.micro"
  subnet_id                   = aws_subnet.pub_sub.id
  vpc_security_group_ids      = [aws_security_group.allow_tfsg.id]
 key_name                     = "David"
 associate_public_ip_address  =  "true"
}
resource "aws_instance" "pri_ins" {
  ami                         = "ami-0fc5d935ebf8bc3bc"
  instance_type               = "t2.micro"
  subnet_id                   =  aws_subnet.prisub.id
  vpc_security_group_ids      = [aws_security_group.allow_tfsg.id]
  key_name                    = "ashilin"
}
```