

## DEVOPS

No:-	Content
1.	3-Tier-Project in Terraform

```
resource "aws_vpc" "tier3vpc" {  
  cidr_block = "192.168.0.0/16"
```

```
  tags = {  
    Name="3-tier-vpc"  
  }  
}
```

//nginx server for which is in public connectivity

```
resource "aws_subnet" "public-nginx" {  
  vpc_id = aws_vpc.tier3vpc.id  
  cidr_block = "192.168.1.0/24"  
  availability_zone = "us-east-1a"  
  tags = {  
    Name="3-tier-subnet-public"  
  }  
  map_public_ip_on_launch = true
```

```
}
```

//tomcat server for which is in private connectivity

```
resource "aws_subnet" "private-tomcat" {  
  vpc_id = aws_vpc.tier3vpc.id  
  cidr_block = "192.168.4.0/24"  
  availability_zone = "us-east-1b"  
  tags = {  
    Name="subnet-private-tomcat"  
  }  
  map_public_ip_on_launch = false
```

```
}
```

//RDS for which is in private connectivity

```
resource "aws_subnet" "private-RDS" {  
  vpc_id = aws_vpc.tier3vpc.id
```

```
cidr_block = "192.168.3.0/24"
availability_zone = "us-east-1c"
tags = {
  Name="subnet-private-RDS"
}
map_public_ip_on_launch = false

}

resource "aws_internet_gateway" "IGW" {
  vpc_id = aws_vpc.tier3vpc.id
  tags = {
    Name="3-tier_IGW"
  }
}
resource "aws_eip" "nat_eip" {
# vpc=true

}
resource "aws_nat_gateway" "NAT" {
  allocation_id = aws_eip.nat_eip.id
  subnet_id = aws_subnet.public-nginx.id
  tags = {
    Name="3-tier-NAT"
  }
}

resource "aws_route_table" "RT1" {
  vpc_id = aws_vpc.tier3vpc.id
  tags = {
    Name= "3-tier-RT1-public"
  }
}
resource "aws_route" "route1" {
  route_table_id = aws_route_table.RT1.id
  destination_cidr_block = "0.0.0.0/0"
  gateway_id = aws_internet_gateway.IGW.id

}
resource "aws_route_table" "RT2" {
  vpc_id = aws_vpc.tier3vpc.id
  tags = {
    Name= "3-tier-RT2-private"
  }
}

resource "aws_route" "route2" {
  route_table_id = aws_route_table.RT2.id
```

```
destination_cidr_block = "0.0.0.0/0"
gateway_id = aws_nat_gateway.NAT.id

}

resource "aws_route_table_association" "subnet_asso_public" {
  route_table_id = aws_route_table.RT1.id
  subnet_id=aws_subnet.public-nginx.id
}
resource "aws_route_table_association" "subnet_asso_tomcat"
{
  route_table_id = aws_route_table.RT2.id
  subnet_id=aws_subnet.private-tomcat.id

}
resource "aws_route_table_association" "subnet_asso_RDS" {
  route_table_id = aws_route_table.RT2.id
  subnet_id=aws_subnet.private-RDS.id

}
resource "aws_security_group" "sec1" {
  vpc_id = aws_vpc.tier3vpc.id
  tags = {
    Name="3-tier-security_group"
  }
  ingress {
    from_port = 22
    to_port = 22
    protocol = "tcp"
    cidr_blocks = ["0.0.0.0/0"]
  }
  ingress {
    from_port = 80
    to_port = 80
    protocol = "tcp"
    cidr_blocks = ["0.0.0.0/0"]
  }
  ingress {
    from_port = 8080
    to_port = 8080
    protocol = "tcp"
    cidr_blocks = ["0.0.0.0/0"]
  }
  ingress {
    from_port = 3306
    to_port = 3306
    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"]
    }
  }

resource "aws_instance" "i1" {
  ami = "ami-0fff1b9a61dec8a5f"
  key_name = "new_key"
  instance_type = "t2.micro"
  subnet_id = aws_subnet.public-nginx.id
  vpc_security_group_ids = [aws_security_group.sec1.id]
  tags = {
    Name="nginx"
  }
}

resource "aws_instance" "i2" {
  ami = "ami-0fff1b9a61dec8a5f"
  key_name = "new_key"
  instance_type = "t2.micro"
  subnet_id = aws_subnet.private-tomcat.id
  vpc_security_group_ids = [aws_security_group.sec1.id]
  tags={
    Name="tomcat"
  }
}

resource "aws_instance" "i3" {
  ami = "ami-0fff1b9a61dec8a5f"
  key_name = "new_key"
  instance_type = "t2.micro"
  subnet_id = aws_subnet.private-RDS.id
  vpc_security_group_ids = [aws_security_group.sec1.id]
  tags={
    Name="RDS"
  }
}

resource "aws_db_subnet_group" "sub_grp_rds" {
  subnet_ids = [aws_subnet.private-RDS.id, aws_subnet.private-
tomcat.id]
  tags = {
    Name="3-tier-subnet-group"
  }
}

```

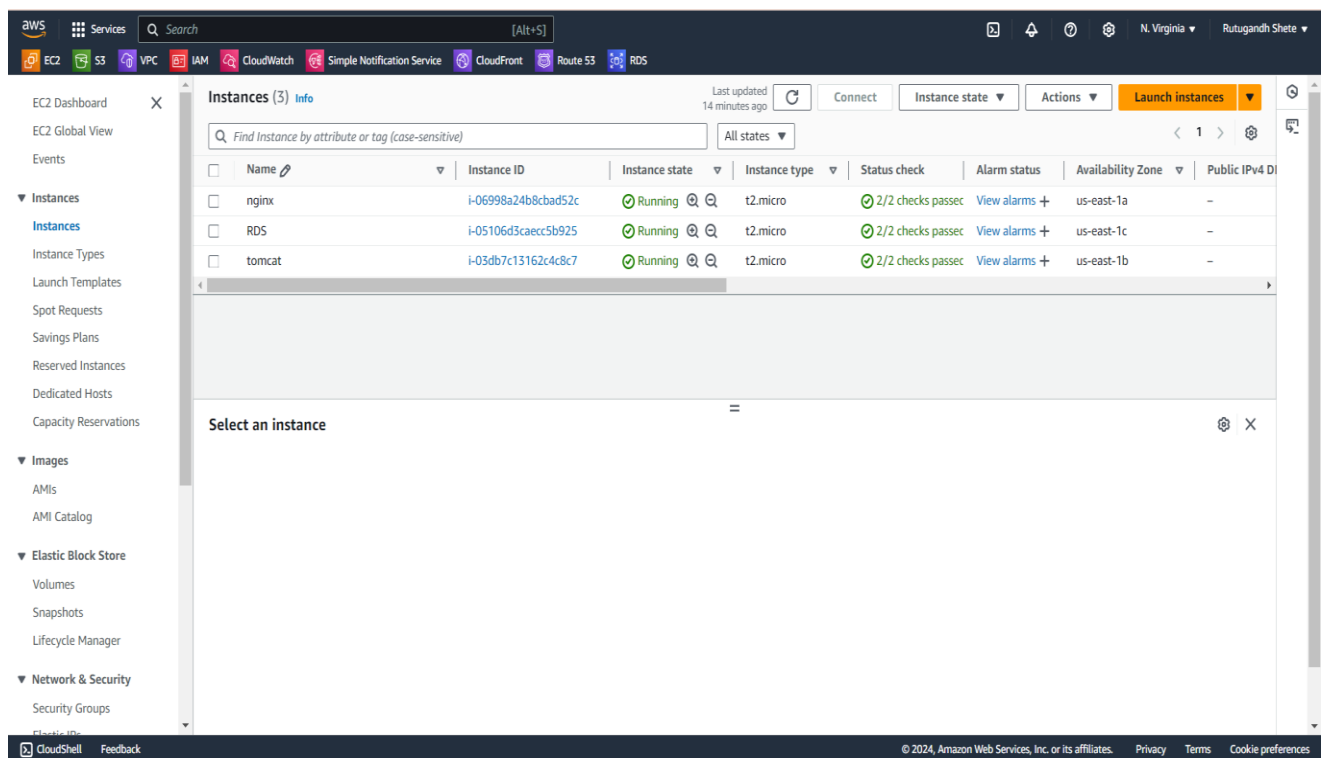
```

}

resource "aws_db_instance" "default" {
  identifier      = "mydb"
  engine         = "mysql"
  instance_class  = "db.t3.micro"
  allocated_storage = 20
  db_name        = "mydatabase"
  username       = "admin"
  password       = "password123"
  availability_zone = "us-east-1c"
  parameter_group_name = "default.mysql8.0"
  db_subnet_group_name =
aws_db_subnet_group.sub_grp_rds.id
  vpc_security_group_ids = [aws_security_group.sec1.id]
  skip_final_snapshot = true

  tags = {
    Name = "3-tier-RDS"
  }
}

```



The screenshot shows the AWS Management Console interface. The top navigation bar includes the AWS logo, a search bar, and various service icons. The left sidebar contains a navigation menu with categories like EC2, IAM, CloudWatch, and RDS. The main content area displays the 'Instances (3)' page for RDS. It features a table with columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, Availability Zone, and Public IPv4 D. The table lists three instances: 'nginx' (Instance ID: i-06998a24b8cbad52c), 'RDS' (Instance ID: i-05106d3caecc5b925), and 'tomcat' (Instance ID: i-03db7c13162c4c8c7). All instances are in a 'Running' state. Below the table, there is a 'Select an instance' section with a search bar and a list of instance types.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 D
nginx	i-06998a24b8cbad52c	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1a	-
RDS	i-05106d3caecc5b925	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1c	-
tomcat	i-03db7c13162c4c8c7	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1b	-

aws

Services

Search

[Alt+S]

EC2

S3

VPC

IAM

CloudWatch

Simple Notification Service

CloudFront

Route 53

RDS

N. Virginia

Rutugandh Shete

Amazon RDS

Dashboard

Databases

Query Editor

Performance insights

Snapshots

Exports in Amazon S3

Automated backups

Reserved instances

Proxies

Subnet groups

Parameter groups

Option groups

Custom engine versions

Zero-ETL integrations

Events

Event subscriptions

Recommendations

RDS > Databases

Databases (1)

Group resources

Modify

Actions

Restore from S3

Create database

Filter by databases

DB identifier	Status	Role	Engine	Region ...	Size	Recommendations	CPU
mydb	Available	Instance	MySQL Co...	us-east-1c	db.t3.micro		2.63%

VPC

Subnets (3)

Route tables (3)

Network connections (2)

Student Registration Form

Student Name

Rutugandh shete

Student Address

pune

Student Age

20

Student Qualification

12

Student Percentage

67

Year Passed

2020

register

[Register Student](#)

## Students List

Student ID	StudentName	Student Addr	Student Age	Student Qualification	Student Percentage	Student Year Passed	Edit	Delete
1	Rutugandh shete	pune	20	12	67	2020	<a href="#">edit</a>	<a href="#">delete</a>