

```
provider "aws" {  
  region = "ap-south-1"  
}
```

```
resource "aws_vpc" "my_vpc" {  
  cidr_block = "10.0.0.0/16"  
  enable_dns_support = true  
  enable_dns_hostnames = true  
  tags = {  
    Name = "my-vpc"  
  }  
}
```

```
resource "aws_subnet" "public_subnet" {  
  vpc_id   = aws_vpc.my_vpc.id  
  cidr_block = "10.0.1.0/24"  
  availability_zone = "ap-south-1a" # Adjust as needed  
  map_public_ip_on_launch = true  
  tags = {  
    Name = "public-subnet"  
  }  
}
```

```
resource "aws_subnet" "private_subnet" {  
  vpc_id   = aws_vpc.my_vpc.id  
  cidr_block = "10.0.2.0/24"  
  availability_zone = "ap-south-1a" # Adjust as needed
```

```
tags = {  
  Name = "private-subnet"  
}  
}
```

```
resource "aws_internet_gateway" "igw" {  
  vpc_id = aws_vpc.my_vpc.id  
  tags = {  
    Name = "my-igw"  
  }  
}
```

```
resource "aws_route_table" "public_route_table" {  
  vpc_id = aws_vpc.my_vpc.id  
  
  route {  
    cidr_block = "0.0.0.0/0"  
    gateway_id = aws_internet_gateway.igw.id  
  }  
}
```

```
tags = {  
  Name = "public-route-table"  
}  
}
```

```
resource "aws_route_table_association" "public_route_table_assoc" {  
  subnet_id    = aws_subnet.public_subnet.id  
  route_table_id = aws_route_table.public_route_table.id  
}
```

```
}
```

```
resource "aws_security_group" "web_sg" {  
  vpc_id = aws_vpc.my_vpc.id
```

```
  egress {  
    from_port = 0  
    to_port   = 0  
    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 = 443  
    to_port   = 443  
    protocol  = "tcp"  
    cidr_blocks = ["0.0.0.0/0"]  
  }  
}
```

```
  tags = {  
    Name = "web-sg"  
  }  
}
```

```
resource "aws_instance" "web_instance" {  
  ami      = "ami-0e53db6fd757e38c7" # Example AMI; choose one suitable for your region  
  instance_type = "t2.micro"  
  subnet_id   = aws_subnet.public_subnet.id  
  vpc_security_group_ids = [aws_security_group.web_sg.id]  
  
  user_data = <<-EOF  
    #!/bin/bash  
  
    sudo apt-get update  
  
    sudo apt-get install -y nginx  
  
    sudo systemctl start nginx  
  
    sudo systemctl enable nginx  
  
    EOF  
  
  tags = {  
    Name = "web-instance"  
  }  
}  
  
output "instance_public_ip" {  
  value = aws_instance.web_instance.public_ip  
}
```