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

}