**5. Implementing IaC with CloudFormation on AWS**

b. Steps to create a basic CloudFormation template to set up an EC2 instance

Step 1: Define the Template Format

Step 2: Define the Resources

Step 3: Add Required Parameters

Step 4: Deploy the CloudFormation Template

Step 5: Monitor and Verify

c. Write the CloudFormation YAML template for the EC2 instance

AWSTemplateFormatVersion: '2010-09-09'

Resources:

MyEC2Instance:

Type: 'AWS::EC2::Instance'

Properties:

InstanceType: t2.micro # Modify the instance type as needed

ImageId: ami-0c55b159cbfafe1f0 # Replace with the desired AMI ID

KeyName: MyKeyPair # Replace with your key pair name

SecurityGroups:

- Ref: MySecurityGroup # Reference to the security group created below

Tags:

- Key: Name

Value: MyEC2Instance

MySecurityGroup:

Type: 'AWS::EC2::SecurityGroup'

Properties:

GroupDescription: "Allow SSH access"

SecurityGroupIngress:

- IpProtocol: tcp

FromPort: '22'

ToPort: '22'

CidrIp: '0.0.0.0/0' # Adjust the CIDR block as needed for security

Outputs:

InstanceId:

Description: "Instance ID"

Value: !Ref MyEC2Instance

PublicIP:

Description: "Public IP Address of the EC2 instance"

Value: !GetAtt MyEC2Instance.PublicIp