In-Class Task# 3

Create an EC2 Instance Using Terraform with KMS-Encrypted SSH Key

Objective:

Learn to provision an EC2 instance in AWS using Terraform with separate variable and tfvars files. The task will include creating and managing a new KMS key for securing SSH access to the instance.

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Task Details:

1. **Provisioning an EC2 Instance**:
    - Instance type: t2.micro.
    - AMI: ami-0453ec754f44f9a4a (Ubuntu 24.04 LTS).
    - Place the instance in the default VPC.
2. **Key Management**:
    - Create a new AWS KMS key using Terraform.
    - Use the KMS key to encrypt a new SSH private key for the EC2 instance.
3. **File Structure**:
    - **main.tf**: Define the EC2 instance and the KMS key resources.
    - **variables.tf**: Define necessary variables (e.g., instance type, AMI, KMS alias).
    - **vars.tfvars**: Provide variable values (e.g., instance type, KMS alias).
    - **outputs.tf**: Output the private and public IPs of the EC2 instance.
4. **SSH Access**:
    - The Terraform plan should generate a new SSH key pair and encrypt the private key using the KMS key.
    - Save the decrypted private key locally to allow SSH access to the instance.