**Step-by-Step Guide: Day 2 Labs**

**Lab 1: Introduction to Terraform**

**Step 1: Install Terraform**

1. Download Terraform from the official website: https://developer.hashicorp.com/terraform/downloads
2. Extract the downloaded file and move the binary to a directory in your system PATH.
3. Verify the installation by running the following command:

terraform version

**Step 2: Initialize a Terraform Project**

1. Create a new directory for the Terraform project:

mkdir terraform-project && cd terraform-project

1. Create a main.tf file with the following content to provision an AWS EC2 instance:
2. provider "aws" {
3. region = "us-east-1"
4. }
5. resource "aws\_instance" "example" {
6. ami = "ami-12345678"
7. instance\_type = "t2.micro"

}

1. Initialize Terraform:

terraform init

**Step 3: Apply Terraform Configuration**

1. Validate the Terraform configuration:

terraform validate

1. Generate an execution plan:

terraform plan

1. Apply the changes to provision the infrastructure:

terraform apply -auto-approve

1. Verify the created EC2 instance in the AWS Console.

**Step 4: Destroy the Terraform Infrastructure**

1. When finished, destroy the created resources:

terraform destroy -auto-approve

**Lab 2: Configuration Management with Ansible**

**Step 1: Install Ansible**

1. Install Ansible using the package manager:

sudo apt update && sudo apt install -y ansible

1. Verify the installation:

ansible --version

**Step 2: Configure Ansible Inventory**

1. Create an inventory file inventory.ini with the following content:
2. [webservers]

192.168.1.100 ansible\_user=ubuntu ansible\_ssh\_private\_key\_file=~/.ssh/id\_rsa

1. Test the connection:

ansible all -i inventory.ini -m ping

**Step 3: Create an Ansible Playbook**

1. Create a playbook file setup-webserver.yml:
2. - hosts: webservers
3. become: yes
4. tasks:
5. - name: Install Apache
6. apt:
7. name: apache2
8. state: present
9. - name: Start Apache Service
10. service:
11. name: apache2

state: started

1. Run the playbook:

ansible-playbook -i inventory.ini setup-webserver.yml

1. Verify Apache installation by accessing http://192.168.1.100 in a browser.