**Set D**

1. How to install Prometheus and Grafana on you cluster using Terraform and helm.

2. Using Ansible to deploy a static web application onto a remote server

3. Jenkins

1. Install Jenkins from scratch on an ec2 instance with default plungins.
2. Create 3 users in Alice/Bob/Mary with different roles.
3. create free style project and execute various Linux commands in Build > Execute shell
4. install a git plugin and configure repo [LuisJoseSanchez/hello-world-java: Hello world with Java (github.com)](https://github.com/LuisJoseSanchez/hello-world-java) into it.
5. Execute the commands given in the repo description and the output should be printed into jenkins console.
6. Fork the repo, changes the description in print statement into code and rerun the Jenkins job the updated output should be shown into jenkins console log.

4. Terraform Installation and Setup

* + Install Terraform on your local machine or a designated server.
  + Configure your cloud provider's credentials for Terraform.
* Define Infrastructure Resources
  + Define Terraform configuration files (.tf) to create infrastructure resources using Terraform's HashiCorp Configuration Language (HCL).
  + Create resources such as virtual machines, storage, networking components, and security groups. Use a cloud AWS.
  + Use variables and data sources to parameterize your configuration.
* Provision and Apply Infrastructure:
  + Use the terraform init, terraform plan, and terraform apply commands to initialize and provision your infrastructure.
  + Make sure that Terraform successfully provisions the defined resources and saves their state.
* Scaling and Variable Expansion :
  + Extend your Terraform configuration to allow for horizontal scaling of resources (e.g., autoscaling groups or instance counts).
  + Implement variable expansion and dynamic resource creation based on the number of instances required.
* Remote State Management :
  + Set up remote state management using a remote backend, such as an S3 bucket for AWS or a similar solution for your cloud provider.
  + Ensure that Terraform state files are stored remotely and securely.
* Infrastructure Updates and Changes :
  + Modify your Terraform configuration to simulate changes to the infrastructure, such as adding or modifying resources.
  + Apply these changes using the terraform apply command and verify that Terraform updates the infrastructure accordingly.