**Process flow of the Cloud Provision IaC**

**Prerequisites of setting up a new Cloud Provider to deploy the application.**

* Need to have Terraform installed on the client desktop.
* Need to have ssh installed for remote login to the EC2 instance.
* Create a free-tier AWS account for the deployment using a new email ID and credit card number.
* Could use windows or MacBook desktop for provision of the AWS cloud.

**Infrastructure-as-Code to be deployed for the github application**

In order for Terraform to be able to make changes in your AWS account, you will need to configure the AWS credentials for the user you created earlier. There are several ways to do this (see [A Comprehensive Guide to Authenticating to AWS on the Command Line](https://blog.gruntwork.io/a-comprehensive-guide-to-authenticating-to-aws-on-the-command-line-63656a686799))

Update the Access code and Secret key into the the terraform code inside the variable.tf file

So that new credentials of the root are updated from the new aws account.

The Github repository link for the terraform IaC.

/terraform/

**Network.tf** 🡪 This script helps to create the VPC and access code.

**Routing.tf** 🡪 This script helps to create the route table and IGW

**Subnets.tf** 🡪 this script helps to create the subnet and AZ of network

**Securitygroups.tf** 🡪 This setups the firewall rules and security policy

**Dns-and-dhcp.tf** 🡪 This script setup the DNS zones and network access.

**Ec2-machine.tf** 🡪 This script create the Key pair and EC2 instance for deploying the application packages and codes.

**Variables.tf** 🡪 This are the variable file of the parameters in the terraform files.

**Deployment of the application from the github repository**

# **Run the app**

The REST API application need to be provided with the source code . I am not developer experience, I have never do coding for sometime. I have only devops experience in CI/CD framework. If you not clear on devops roles we can have a discussion.

**Testing**

This test cases need to provided by the development team. I can help to advice the team on the testing process.

**Containers**

I have created the dockfile. The dockerfile have been created for the posgresql and python application in the alpine image. Pls review it

**CI**

I have uploaded the gitlab-ci.yml for the CI to be run in the gitlab website.

**Execution Process of Terraform.**

There are three commands which are pretty much required to provision the infrastructure using Terraform.

* $ terraform init
* $ terraform plan
* $ terraform apply

**Note : AWS RDS services is not created in the terraform scripts since Free tier Account charges for the RDS services and testing. Since charges are involve, loaded PostgreSQL in the EC2 instance itself to do the testing and demo**.