Assignment: Deploy a Simple Web Application using IaC

OP Kiitorata Trainee Program

Dear candidate,

You will implement and document a basic web application and deploy it reproducibly using Infrastructure as Code (IaC). The goal is to demonstrate that you can provision cloud resources via code, deploy an application consisting of a separate front end and back end, and explain how to reproduce and tear down the setup.

Requirements

1. **Application**
   - Simple web application that can be written in a programming language(/languages) and framework(s) of your choice
   - The application should consist of separate front and back ends
   - It must do at least one HTTP request from front end to back end
   - Containerization (Docker) of the back end is a plus but not mandatory
2. **Infrastructure**
   - Use cloud (AWS, Azure, GCP) resources for your application. See e.g. free tiers:
     - AWS: `https://aws.amazon.com/free/`
     - Azure: `https://azure.microsoft.com/en-us/pricing/free-services`
     - GCP: `https://cloud.google.com/free/docs/free-cloud-features`
   - Declare the infrastructure as a code. You may use any IaC tool (e.g. AWS CDK, Azure Bicep, GCP Deployment Manager, Terraform, Pulumi, etc.) and programming language of your choice.
   - The final result should be that the created web application can be deployed into the cloud in a reproducible way by only using the code
   - The solution should be idempotent (re-running should not break it)
3. **Documentation**
   - Provide a README.md file with:
     - How to set up and install prerequisites (e.g. authentication, CLI tools, IaC tools)
     - How to deploy and destroy the infrastructure
     - Description of any missing parts or non-idealities

Deliverables

- Link to a public repository containing
  - Application (and Docker) code
  - IaC code
  - README.md with instructions

Review criteria

- Application complexity is not reviewed, simple web application is sufficient!
  - Containerization is a plus
- Reproducible usage of IaC
- Documentation clarity, we should be able to deploy your application based on the documentation alone