DevOps Engineer / Cloud Infrastructure Engineer

There are two parts to this take home exercise which is meant to challenge you on the aspects of the cloud infrastructure engineer role that you might encounter day to day.

The first part of the exercise is a programming exercise to write a small bespoke tool to perform some tasks.

> *The field of cloud computing is still very nascent and new. The ecosystem is still developing and there are many new tools that are not mature yet. Frequently, we might encounter some weird behaviour or bugs in the tools that we use. It is also common to encounter situations where there is no tool that performs exactly what we need, or the tool that we are using is missing certain features. Sometimes, it is possible to cobble together a myriad of tools to perform our tasks, but sometimes it's not.*
>
> *It is therefore useful to be able to read and write code so that we can help to figure out where bugs or problems might have arisen from in the tools. We can then write detailed and useful bug reports for the maintainers to work on. If we have the time, we might even be able write code ourselves and contribute to the open source community.*

The second part of the exercise is to deploy the tool you have written in the first part to a production cloud environment.

> *The core part of the role is to run and maintain the cloud infrastructure and services and applications running on top of the infrastructure. It is important that the applications and services take advantage of the cloud environment as much as possible to provide the necessary performance and availability to fulfil business needs.*

Instructions

1. Please perform the tasks described in the next section.
2. Document instructions on how to execute and use your solution.
3. Think through the design and take note of the various decisions and tradeoffs that you make. You will be asked questions during your interview for discussion.
4. Archive your solution and email them to the hiring manager.

Programming Task

Using a programming language of your choice, implement a long-running process that:

- Accepts a csv file containing a list of up to 1000 urls with names at startup.
- The process should pull all these urls every 10 minutes to check their HTTP status.
- The process should also bind a local port, to provide a summary of monitoring status in the past hour in any suitable format.
- Containerise the application

A sample of the CSV file might include:

```
name, url
google, https://www.google.com
...
sph, https://www.sph.com.sg
```

Deployment Task

Provide a solution in the form of code using **Terraform** to deploy the containerised application you have written above to a cloud provider of your choice. Your solution should include setting up the cloud provider account so that the application can be deployed.