**DevOps/SRE Take-Home Assignments**

**Assignment I - Setup 3 tier application using Vagrant**

Deploy a multi-tier development environment using Vagrant and Ansible (Chef/Puppet can also be used). The application is built in 3 tiers:  
  
**Load Balancer Layer**: Nginx is used as a reverse proxy and load-balancer. The load balancer must use a round-robin algorithm and dispatch equal traffic across 2 application servers. Send all traffic for /order to order\_api and /pricing to pricing\_api.

* IP: 192.168.100.10
* Vagrant Box Name: lb

**Application Layer**: There are 2 web applications order\_api and pricing\_api that serve the routes /order and /pricing, respectively. The app can be a simple CRUD. Choose any framework of your choice for this. Deploy order\_api and pricing\_api on both application servers (app1 and app2)

* IPs: 192.168.150.10/11
* Vagrant Box Names: app1/app2

**Database Layer**: Use MySQL (or any RDBMS) as the backend database. Ensure that both apps have a dedicated user and database. The database service must only be accessible from the application layer.

* IP: 192.168.200.10
* Vagrant Box Name: db

**Note**: You are free to make any assumptions to complete the task, just make sure to document them in the README. You are expected to submit a tar/zip file of the solution. The environment should be in a working state with vagrant up command. If there are any more instructions, they must be explicitly documented in the README.

**Assignment II - Finding top Github contributors from given region**

You are a rockstar SRE at your organization and writing utilities for automating repetitive tasks is your specialization. This time, your hiring team has summoned you to help them with a trivial but real-world problem. You need to write a tool that takes a programming language and region as inputs and provide a list of Github handles and email addresses of the top contributors on Github. Output must be in CSV format as shown below.  
  
**Sample Input:** Language: python, Location: Pune  
**Sample Output:**  
GithubHandle, Email  
UserBob, bob@email.com  
UserJack, jack@email.com