Task

Your task is to create a Terraform configuration that launches a VM on GCP's Compute Engine.

The Terraform configuration must be specified in a **single file** and should fulfill the following requirements:

VM creation

It creates a VM instance that uses a **Debian 10** image. The VM instance name should be set through an input variable called `vm_name_input`.

VM information

The configuration returns two output values:

- `vm_name`, as the instance name of the newly-created VM;
- `public_ip`, as the public IP of the newly-created VM.

Network access

The created instance must **allow SSH access**.

Note

The default virtual private cloud (VPC) network in GCP allows SSH access to the VM. For all other networks, you must explicitly create the firewall to achieve the same. Therefore, make sure that firewall rules allow SSH access to the instance if you create a new VPC network in your Terraform configuration.

The configuration must contain a provider block for Google Cloud Platform defined as follows.

```
provider "google" {
        project     = "<your-GCP-project-ID>"
        region      = "<a-GCP-region>"
        zone        = "<a-GCP-zone>"
}
```

Warning

For testing locally, it is recommended to set an environment variable pointing to your `credentials.json` file, so that Terraform has the permissions to create the resources defined in your configuration. Remember that an environment variable defined on the command line it is *available only to the corresponding shell*, so you will have to re-create it on each new terminal unless you add it to the files your shell automatically opens during startup.

Grading

Submissions are evaluated by using Terratest to run and test the submitted configuration.

> **Note**
>
> The grader uses Terraform **version 1.2.9** (the latest available at the time of writing). Make sure that you use the same to avoid any possible issues.

The submission should include 1 file and your GCP project ID.

GCP project ID

This is the project ID of your GCP project found on the dashboard of your project, the same one specified in your Terraform configuration.

Terraform configuration file

A Terraform configuration that accomplishes the task in this assignment. In particular, note that the provider block must be specified as shown earlier with the project field set to your GCP project ID. You are free to specify any zone or region but verify before submitting your file that the VM is launched as expected in the zone and region of your choice.

> **Warning**
>
> - The assignment requires that your GCP project can be accessed from the grader. Make sure that you have add the A Plus grader account according to the instructions here.
> - Make sure to **enable the Cloud Resource Manager API** by clicking here. Without it, the grader is unable to destroy the provisioned cloud resources after grading. Once grading is complete for your submission, ensure that there are no active compute instances in GCP.
> - Make sure to test your configuration locally before submitting it. This is useful for testing any possible errors with the Google Compute Engine. For instance, creating VM instances in certain regions may intermittently fail.

> **Note**
>
> The assignment runs multiple unit tests which give fractional points based on how the requirements in task are fulfilled, according to the table below.
>
> | Test | Points |
> |---|---|
> | `terraform validate` is successful | 20 |
> | `terraform apply -var='vm_name_input=<custom-name>'` is successful | 30 |
> | The VM instance is created with `vm_name` set to a custom value | 30 |
> | Output values are correctly configured and set | 40 |
> | `lsb_release -r` returns correct OS information | 30 |