

Azure Terraform Modules

Create the **azure-modules** directory.

The folder structure for the above-created directory is as follows:

```
azure-modules
├── acr
│   ├── main.tf
│   ├── outputs.tf
│   └── variables.tf
├── aks
│   ├── main.tf
│   └── variables.tf
├── container-apps
│   ├── main.tf
│   ├── outputs.tf
│   └── variables.tf
├── mysql-flexible
│   ├── main.tf
│   ├── outputs.tf
│   └── variables.tf
├── resource-group
│   ├── main.tf
│   └── variables.tf
└── virtual-network
    ├── main.tf
    ├── outputs.tf
    └── variables.tf
```

Resource Group Module

Let's start with the Resource Group Module.

1. Create a *resource-group* folder inside the above-created directory.
2. Inside *resource-group* folder, create *main.tf* file.
3. Define the following resources:
 - `azurerm_resource_group`
4. Click [code](#) for reference.
5. The definition of *main.tf* file has been completed.
6. Now we will create *variables.tf* file for declaring variables.
7. Inside it, declare the following variables:

- resource-group-properties
8. Click [code](#) for reference.
 9. We have completed defining the **Resource Group Module**.
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VNet Module

Now, let's create a Virtual Network module.

1. Create a *vnet* folder inside the above-created directory.
 2. Inside *vnet* folder, create *main.tf* file.
 3. Define the following resources:
 - azurerm_virtual_network
 4. Click [code](#) for reference.
 5. The definition of *main.tf* file is completed.
 6. Now we will create *variables.tf* file for declaring variables.
 7. Inside it, declare the following variables:
 - virtual-network-properties
 - resource-group-properties
 8. Click [code](#) for reference.
 9. We have completed declaring *variables.tf* file for the *VNet module*.
 10. Now we will declare outputs for the *VNet module*.
 11. Create *outputs.tf* file and add the following outputs:
 - azurerm_virtual_network.vnet.id
 - azurerm_virtual_network.vnet.name
 12. Click [code](#) for reference.
 13. Now we have completed defining the **VNet Module**.
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ACR Module

We will use Azure Container Registry for storing container image.

1. Create *acr* folder inside the above-created *azure-modules* directory.
2. Inside *acr* folder, create *main.tf* file and define the following resources:
 - azurerm_container_registry
3. Click [code](#) for reference.
4. The definition of *main.tf* file is complete.
5. Now we will create *variables.tf* file.
6. Inside it, declare the following variables:
 - acr-properties
 - resource-group-properties
7. Click [code](#) for reference.
8. Variables have been declared.
9. Now create the *outputs.tf* file and define the following outputs:
 - acr-id
 - acr-name
 - acr-login-server

10. Click [code](#) for reference.
11. We have completed defining the **ACR Module**.

MySQL Flexible Module

For the database, we will use Azure MySQL Flexible.

1. Create *mysql-flexible* folder inside the *azure-modules* directory.
 2. Inside *mysql-flexible* folder, create *main.tf* file and define the following resources:
 - `azurerm_subnet`
 - `azurerm_private_dns_zone`
 - `azurerm_private_dns_zone_virtual_network_link`
 - `azurerm_mysql_flexible_server`
 - `azurerm_mysql_flexible_database`
 3. Click [code](#) for reference.
 4. The definition of *main.tf* file is complete.
 5. Now we will create *variables.tf* file and declare the following variables:
 - `mysql-flexible-properties`
 - `resource-group-properties`
 - `vnet-id`
 - `vnet-name`
 6. Click [code](#) for reference.
 7. Variables have been declared.
 8. Now create the *outputs.tf* file and define the following outputs:
 - `DB_HOST`
 9. Click [code](#) for reference.
 10. We have completed defining the **MySQL Flexible Module**.
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Container Apps Module

Let's start with the Container Apps Module.

1. Create *container-apps* folder in the above-created *azure-modules* directory.
2. Inside it, create *main.tf* file and define the following resources:
 - `azurerm_container_registry_scope_map`
 - `azurerm_container_registry_token`
 - `azurerm_container_registry_token_password`
 - `azurerm_log_analytics_workspace`
 - `azurerm_container_app_environment`
 - `azurerm_container_app`
3. Click [code](#) for reference.
4. The definition of *main.tf* file for *Container Apps* is complete.
5. Now create *variables.tf* file and declare the following variables:
 - `container-apps-properties`
 - `resource-group-properties`
 - `vnet-public-subnet-id`
 - `acr-id`

- acr-name
 - 6. Click [code](#) for reference.
 - 7. Variables have been declared.
 - 8. Now create the *outputs.tf* file and define the following outputs:
 - container-apps-url
 - 9. Click [code](#) for reference.
 - 10. The definition of **Container Apps Module** is complete.
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AKS Module

Let's start with the AKS Module.

1. Create the *aks* folder in the *azure-modules* directory.
 2. Inside it, create a *main.tf* file and define the following resources:
 - azurerm_subnet
 - azurerm_kubernetes_cluster
 3. Click [code](#) for reference.
 4. The *main.tf* file for AKS has been defined.
 5. Now we will create *variables.tf* file and declare the following variables:
 - aks-properties
 - resource-group-properties
 - vnet-name
 6. Click [code](#) for reference.
 7. We have completed defining the **AKS Module**.
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