**Challenge #1**

A 3-tier environment is a common setup. Use a tool of your choosing/familiarity create these resources. Please remember we will not be judged on the outcome but more focusing on the approach, style and reproducibility.

Consideration – Resources will be created in Azure Cloud.

IAC tool - Terraform

**Tiers**

**presentation tier**- Angular Front End -

We will be deploy angular code App Service which will be exposed via Application Gateway to public

**business tier** – API’s in C#.Net

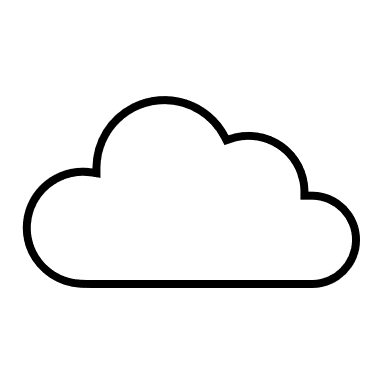
We will be creating app Services for backend APis. This will be called by front end

**data tier** - SQL Database .

All the data will be stored in azure sql db

Azure AD

**Presentation Tier Business Tier Data Tier**

 Presentation Tier Business logic

App Service



Azure App Services /Functions

Azure Front Door

Azure Sql DB

INTERNET









**Challenge #2**

We need to write code that will query the meta data of an instance within AWS and provide a json formatted output. The choice of language and implementation is up to you.

**Bonus Points**

The code allows for a particular data key to be retrieved individually

For Azure we can use **Azure Instance Metadata Service (IMDS)** provides information about currently running virtual machine instances.

Its a REST API available at IP 169.254.169.254

$ImdsServer = "http://169.254.169.254"

$InstanceEndpoint = $ImdsServer + "/metadata/instance"

$AttestedEndpoint = $ImdsServer + "/metadata/attested/document"

$NonceValue = "123456"

function Query-InstanceEndpoint

{

$uri = $InstanceEndpoint + "?api-version=2021-02-01"

$result = Invoke-RestMethod -Method GET -NoProxy -Uri $uri -Headers @{"Metadata"="True"}

return $result

}

$result = Query-InstanceEndpoint

$result | ConvertTo-JSON -Depth 99

OUTPUT

`

**Challenge #3**

We have a nested object, we would like a function that you pass in the object and a key and get back the value. How this is implemented is up to you.

Example Inputs

object = {“a”:{“b”:{“c”:”d”}}}

key = a/b/c

object = {“x”:{“y”:{“z”:”a”}}}

key = x/y/z

value = a

Hints:

*We would like to see some tests. A quick read to help you along the way*

*We would expect it in any other language apart from elixir.*

[*A quick read to help you along the way*](https://hexdocs.pm/elixir/master/Kernel.html#get_in/2)

Once this has been completed please send us the output so we can get the ball rolling.

**Nested.Ps1**

function GetValue($object, [string[]]$keys)

{

$propertyName = $keys[0]

if($keys.count.Equals(1)){

return $object.$propertyName

}

else {

return GetValue -object $object.$propertyName -key ($keys | Select-Object -Skip 1)

}

}

Write-Host "First Output"

$Obj = ConvertFrom-Json '{"a":{"b":{"c":"d"}}}'

$value = GetValue $Obj -key "a/b/c".Split("/")

Write-Host $value

Write-Host "Second Output"

$Obj = ConvertFrom-Json '{"x":{"y":{"z":"a"}}}'

$value = GetValue $Obj -key "x/y/z".Split("/")

Write-Host $value

**OUTPUT as below**

Graphical user interface, text, application

Description automatically generated