

22nd Jan (Monday)

A Azure account creation and storage account creation

The screenshot shows the Microsoft Azure Resource Groups page. At the top, there are several tabs: 'Untitled document - Google Sheets', 'web app port number - Google Sheets', 'New Tab', 'rm in docker - Google Sheets', and 'Resource groups - Microsoft'. The main navigation bar has 'Microsoft Azure' and 'Upgrade' buttons, and a search bar with placeholder 'Search resources, services, and docs (G+)'. On the right, there is a user profile for 'jatin.saini3@incedoinc.com' and 'INCEDO TECHNOLOGY SOLUTIONS PVT LTD'. Below the navigation, the URL 'portal.azure.com/#view/HubsExtension/BrowseResourceGroups' is visible. The page title is 'Resource groups' with a '... more' button. It shows one record: '22ndJan' (Subscription: AZ MSSQL Training, Location: East US). There are filter options for 'Subscription equals all', 'Location equals all', and 'Add filter'. At the bottom, there are buttons for 'Create', 'Manage view', 'Refresh', 'Export to CSV', 'Open query', and 'Assign tags'. A 'List view' dropdown is also present. The footer includes a 'Give feedback' link and the URL 'https://portal.azure.com/#@incedoин.onmicrosoft.com/resource/subscriptions/e7e878f1-a7f7-4ce2-8710-30d2fbcb17ef/resourceGroups/22ndJan'. A sidebar on the right shows a profile picture for 'Mujahed Hussain'.

Container Creation, uploading the files and deleting everything after that

The screenshot shows the Microsoft Azure Storage Account Containers page. The URL is 'https://portal.azure.com/#@incedoин.onmicrosoft.com/resource/subscriptions/e7e878f1-a7f7-4ce2-8710-30d2fbcb17ef/resourceGroups/22ndJan/providers/Microsoft.Storage/storageAccounts/22jan'. The page title is '22jan | Containers' with a 'Storage account' icon. The left sidebar has a 'Containers' tab selected under 'Data storage', along with 'File shares' and 'Queues'. Other sections include 'Overview', 'Activity log', 'Tags', 'Diagnose and solve problems', 'Access Control (IAM)', 'Data migration', 'Events', and 'Storage browser'. The main content area shows a table of containers:

Name	Last modified	Anonymous access level	Lease state
\$logs	1/24/2024, 5:32:25 PM	Private	Available
jatin1	1/24/2024, 5:35:11 PM	Private	Available

There are buttons for '+ Container', 'Change access level', 'Restore containers', 'Refresh', 'Delete', and 'Give feedback'. A 'Search containers by prefix' input field and a 'Show deleted containers' toggle switch are also present.

B. Learner & Trainer Application Worked on the Login page

The screenshot shows a developer's environment with the following components:

- Code Editor:** An IDE window titled "L&T" displays the file "index.html". The code is an OTP login form with CSS styling for the body and container elements.
- File Explorer:** Shows a project structure with folders "frontend" and "server", and files like "learner.html", "trainer.html", "script.js", "style.css", "app.py", "test.py", and "test2.py".
- Timeline:** A sidebar shows a history of file saves for "index.html".
- Browser Preview:** A browser window shows the "index.html" page at the URL "127.0.0.1:5500/frontend/index.html". The page features a central "Login" card with a dropdown menu set to "Learner", an "Email:" input field, and a green "Send OTP" button.

23th Jan (Tuesday)
A. SQL database creation on Azure

Microsoft Azure  Search resources, services, and docs (G+/)

Home > Azure SQL > Select SQL deployment option >

Create SQL Database

Microsoft

Basics Networking Security Additional settings Tags Review + create

Create a SQL database with your preferred configurations. Complete the Basics tab then go to Review + Create to provision with smart defaults, or visit each tab to customize. [Learn more](#)

 Want to try Azure SQL Database for free? Create a free serverless database with the first 100,000 vCore seconds, 32GB of data, and 32GB of backup storage free per month for the lifetime of the subscription. [Learn more](#)

Apply offer (Preview)

 Lower, simplified pricing for SQL Database Hyperscale starts from 15th of December 2023. [Learn more](#)

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and

Review + create **Next : Networking >**

portal.azure.com/#create/Microsoft.SQLDatabase

Microsoft Azure  Search resources, services, and docs (G+/)

Home >

Create SQL Database

Microsoft

Basics Networking Security **Additional settings** Tags Review + create

Customize additional configuration parameters including collation & sample data.

Data source

Start with a blank database, restore from a backup or select sample data to populate your new database.

Use existing data * **None** Backup Sample

Database collation

Database collation defines the rules that sort and compare data, and cannot be changed after database creation. The default database collation is SQL_Latin1_General_CI_AS. [Learn more](#)

Collation *  [Find a collation](#)

Maintenance window

Review + create **< Previous** **Next : Tags >**



Cost summary

General Purpose (GP_S_Gen5_1)	9.03
Cost per GB (in INR)	9.03
Max storage selected (in GB)	x 41.6
ESTIMATED STORAGE COST / MONTH	375.71 INR
COMPUTE COST / VCORE SECOND ¹	0.011382 INR

NOTES

Microsoft Azure | Search resources, services, and docs (G+/)

Home > Microsoft.SQLDatabase.newDatabaseNewServer_7105764f165640ee9d579 | Overview

Deployment

Overview Inputs Outputs Template

Your deployment is complete

Deployment name : Microsoft.SQLDatabase.newD... Start time : 1/24/2024, 5:02:35 PM
Subscription : AZ MSSQL Training Correlation ID : f42715d5-5371-4f87-a60b-5b...
Resource group : 23rdJan

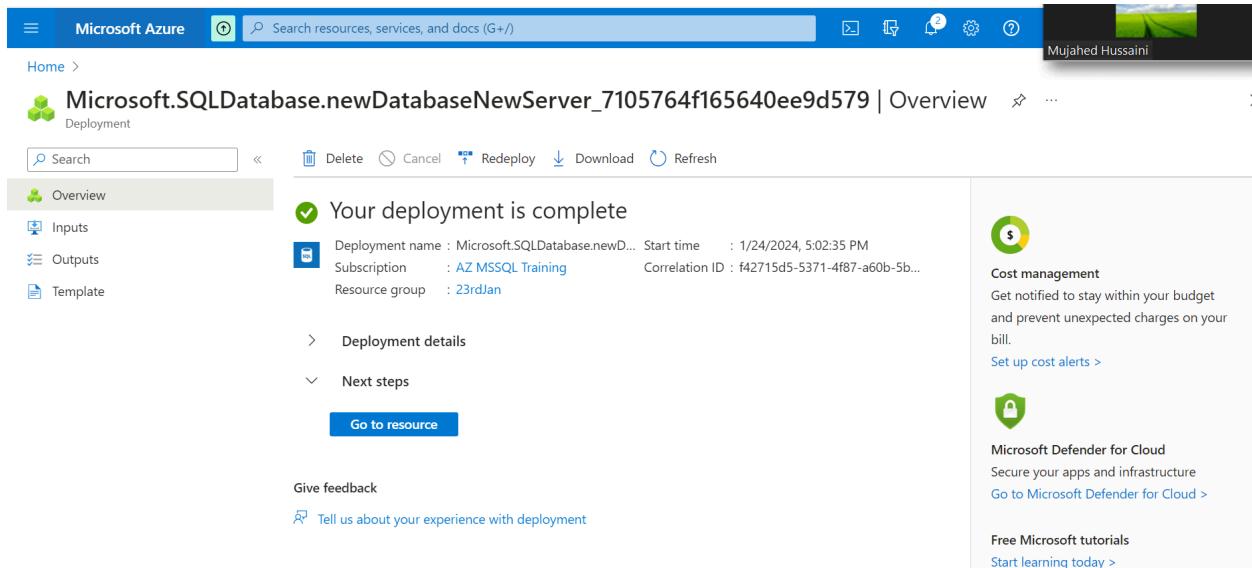
Deployment details Next steps

Go to resource Give feedback Tell us about your experience with deployment

Cost management Get notified to stay within your budget and prevent unexpected charges on your bill. Set up cost alerts >

Microsoft Defender for Cloud Secure your apps and infrastructure Go to Microsoft Defender for Cloud >

Free Microsoft tutorials Start learning today >



Connection with DBeaver

DBeaver 23.3.0 - sqlwastaken.database.windows.net

File Edit Navigate Search SQL Editor Database Navigator Projects

Enter a part of object name here

db1 - sqlwastaken.database.windows.net

DBeaver Sample Database (SQLLite)

sqlwastaken.database.windows.net

Search

Overview Activity log Tags Diagnose and solve Query editor (p) Settings Compute + storage Connection strings Properties Locks Data management Replicas

Project - General

Name: DataSources

URL: jdbc:sqlserver://;serverName=sqlwastaken.database.windows.net;databaseName=db1

Host: sqlwastaken.database.windows.net Port: 1433

Database/Schema: db1

Authentication: SQL Server Authentication

Username: azureuser

Password: (redacted) Save password

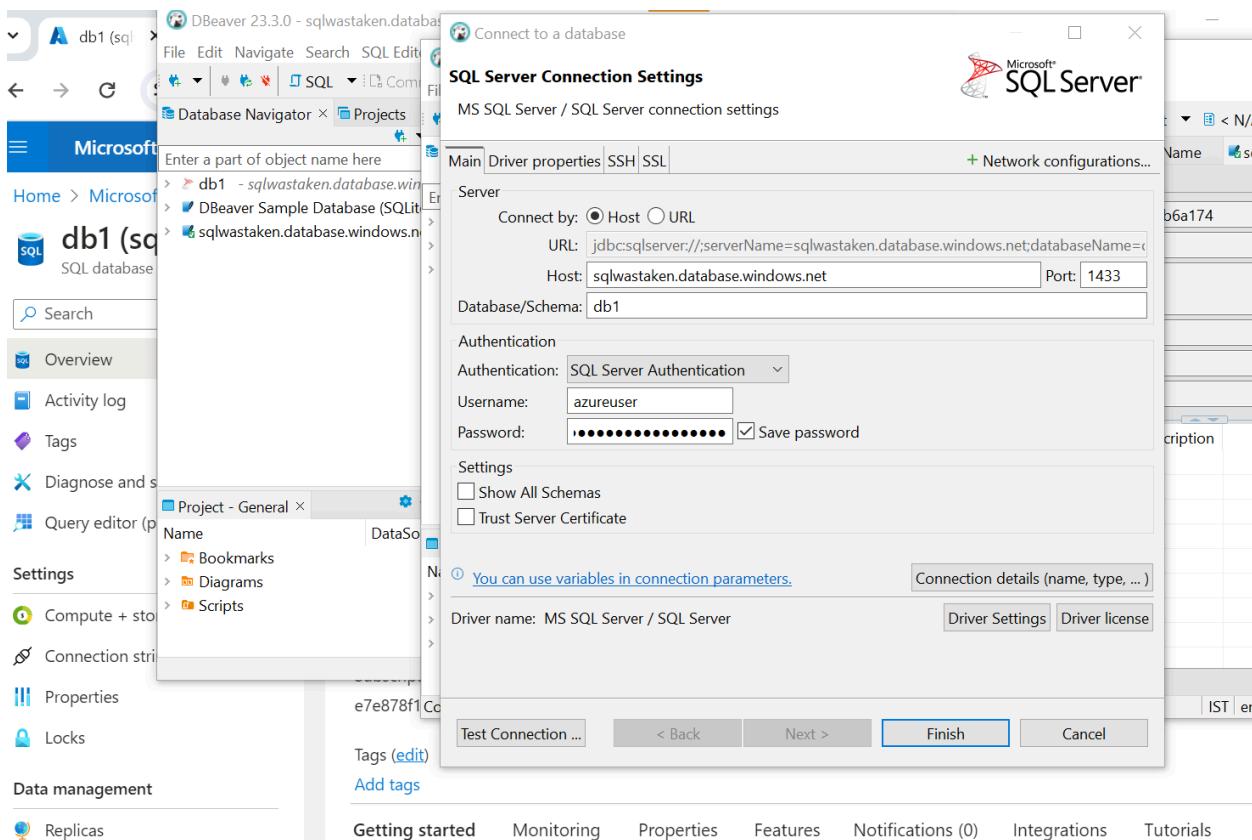
Show All Schemas Trust Server Certificate

You can use variables in connection parameters.

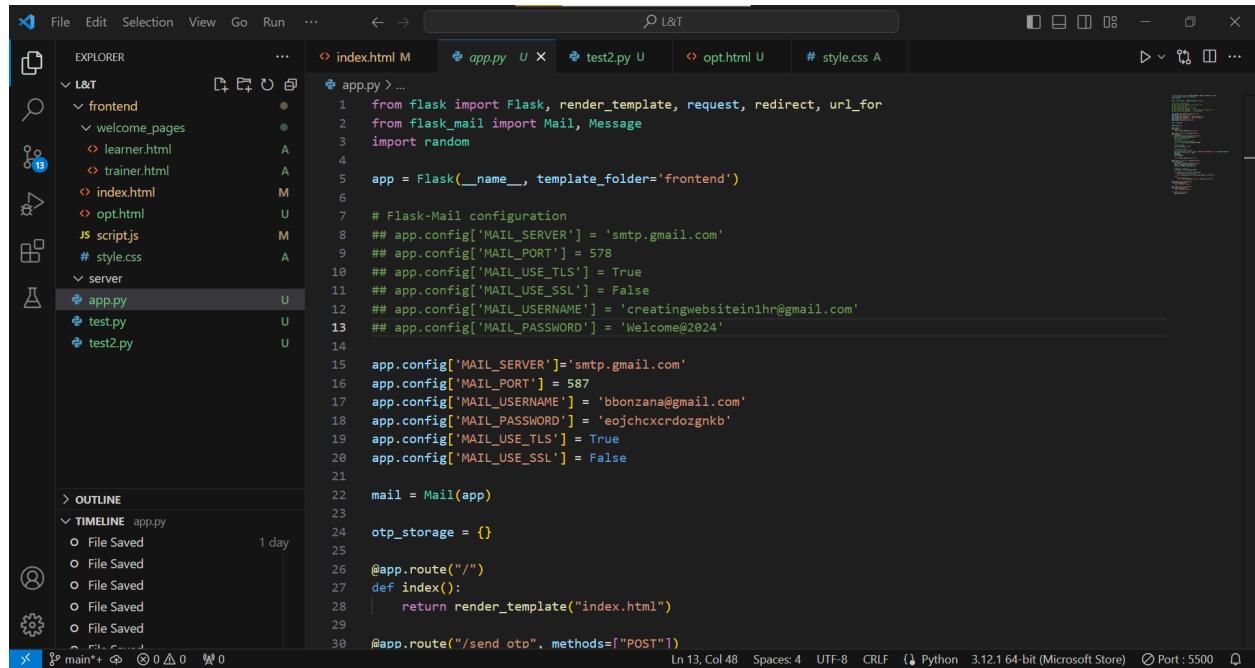
Driver name: MS SQL Server / SQL Server

Test Connection ... < Back Next > Finish Cancel

Getting started Monitoring Properties Features Notifications (0) Integrations Tutorials



B. Flask-Mail Integration on the Login page to send OTP



The screenshot shows a code editor interface with the following details:

- File Explorer:** Shows project structure with files like index.html, app.py, test2.py, opt.html, and style.css.
- Code Editor:** Displays the `app.py` file containing Flask-Mail configuration. The code includes settings for MAIL_SERVER, MAIL_PORT, MAIL_USE_TLS, MAIL_USE_SSL, MAIL_USERNAME, and MAIL_PASSWORD.
- Status Bar:** Shows the current file is `main*+ app.py`, with 13 lines of code, 48 columns, and Python 3.12.1 64-bit (Microsoft Store) running on port 5500.

```
from flask import Flask, render_template, request, redirect, url_for
from flask_mail import Mail, Message
import random

app = Flask(__name__, template_folder='frontend')

# Flask-Mail configuration
## app.config['MAIL_SERVER'] = 'smtp.gmail.com'
## app.config['MAIL_PORT'] = 578
## app.config['MAIL_USE_TLS'] = True
## app.config['MAIL_USE_SSL'] = False
## app.config['MAIL_USERNAME'] = 'creatingwebsitein1hr@gmail.com'
## app.config['MAIL_PASSWORD'] = 'Welcome@2024'

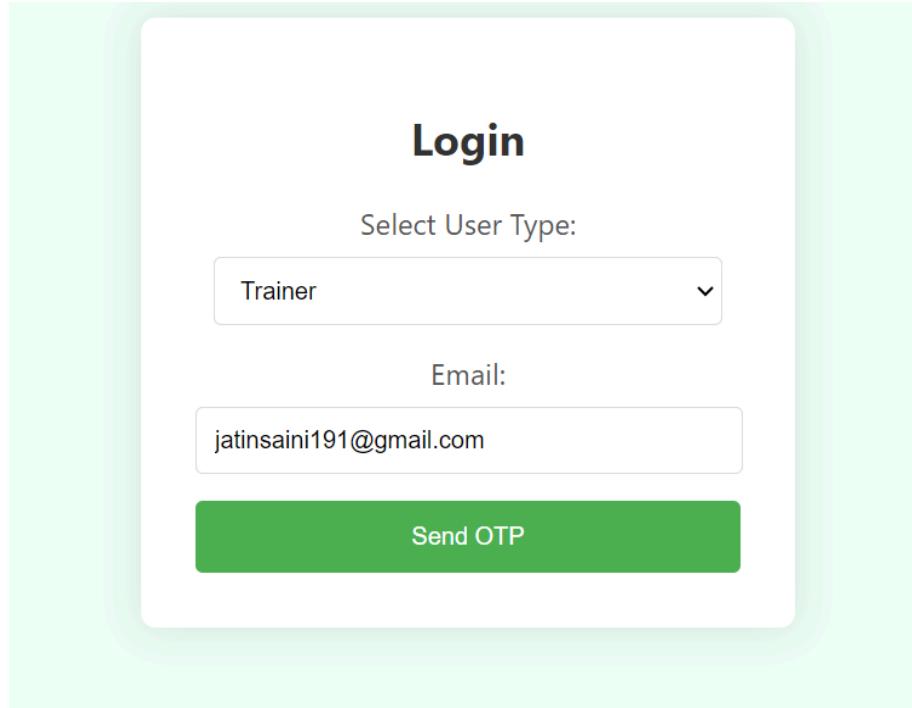
app.config['MAIL_SERVER']='smtp.gmail.com'
app.config['MAIL_PORT'] = 587
app.config['MAIL_USERNAME'] = 'bbonzana@gmail.com'
app.config['MAIL_PASSWORD'] = 'eojchcxcrdozgnkb'
app.config['MAIL_USE_TLS'] = True
app.config['MAIL_USE_SSL'] = False

mail = Mail(app)

otp_storage = {}

@app.route("/")
def index():
    return render_template("index.html")

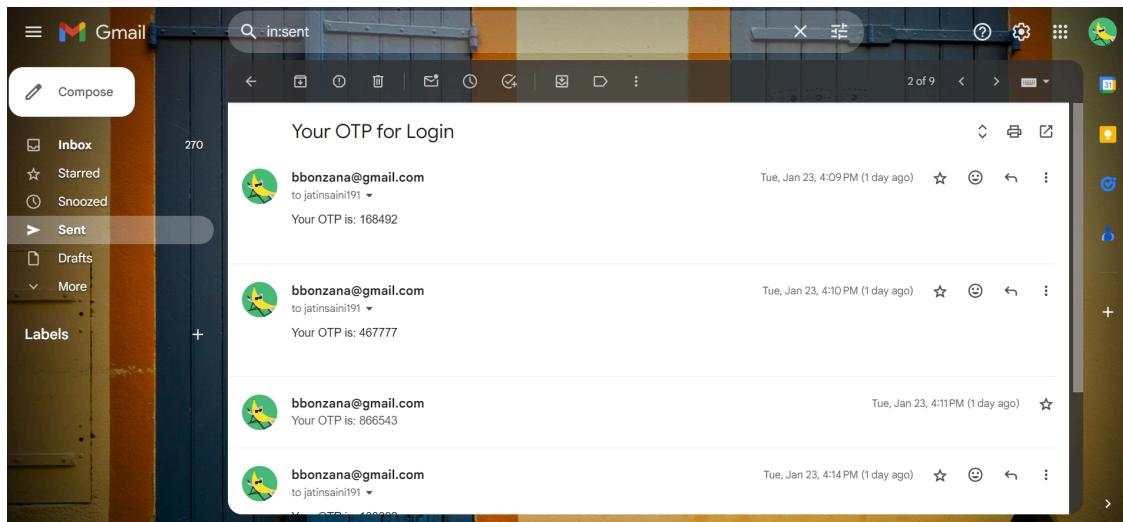
@app.route("/send_otp", methods=["POST"])
def send_otp():
    pass
```



The screenshot shows a web browser displaying a login page with the following elements:

- Title:** Login
- Text:** Select User Type:
- Dropdown:** Trainer (selected)
- Text:** Email:
- Input:** jatinsaini191@gmail.com
- Button:** Send OTP (green button)

OTP was sent Successfully



24th Jan (Wednesday)

Created the New Resource group for the Docker Container training

The screenshot shows the Microsoft Azure Resource Groups page for the '24JanPentaho' resource group. The left sidebar lists other resource groups: '24JanPentaho' (selected), 'cloud-shell-storage-centralindia', and 'NetworkWatcherRG'. The main area displays the 'Essentials' section with a table of resources. The table has columns for Name, Type, and Location. The resources listed are:

Name	Type	Location
VM2	Virtual machine	East US
VM2-ip	Public IP address	East US
VM2-nsg	Network security group	East US
VM2-vnet	Virtual network	East US
vm2831_z1	Network Interface	East US
VM2_d1v1_2b766804b4a488a807601...	Disk	East US

Virtual Machine Creation

The screenshot shows the Microsoft Azure Virtual Machine details page for 'VM2'. The left sidebar lists settings: Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Networking, Connect, Disks, Size, Microsoft Defender for Cloud, Advisor recommendations, and Extensions + applications. The main area shows the 'Essentials' tab with detailed information about the VM. Key details include:

- Resource group: 24JanPentaho
- Status: Running
- Location: East US (Zone 1)
- Subscription: AZ MSSQL Training
- Subscription ID: e7e878f1-a7f7-4ce2-8710-30d2fbcb17ef
- Availability zone: 1
- Tags: Not configured
- Operating system: Linux (ubuntu 20.04)
- Size: Standard D4s v3 (4 vcpus, 16 GiB memory)
- Public IP address: 172.21.81.15
- Virtual network/subnet: VM2-vnet/default
- DNS name: Not configured
- Health state: -

The screenshot shows the Azure Cloud Shell interface. At the top, there are navigation links for Activity log, Access control (IAM), Tags, and Admin username. The status bar indicates "Connecting using Public IP address | 172.214.81.15". A message "Prerequisites configured" with a checkmark is displayed, followed by a note about system-assigned managed identities.

```
Bash Requesting a Cloud Shell. Succeeded.
Connecting terminal...
Storage fileshare subscription e7e878f1-a7f7-4ce2-8710-30d2fbcb17ef is not registered to Microsoft.CloudShell Namespace. Please follow these instructions "https://aka.ms/RegisterCloudShell" to register. In future, unregistered subscriptions will have restricted access to CloudShell service.

jatin [ ~ ]$ az ssh vm --resource-group 24JanPentaho --vm-name VM2 --subscription e7e878f1-a7f7-4ce2-8710-30d2fbcb17ef
OpenSSH_8.9p1, OpenSSL 1.1.1k FIPS 25 Mar 2021
```

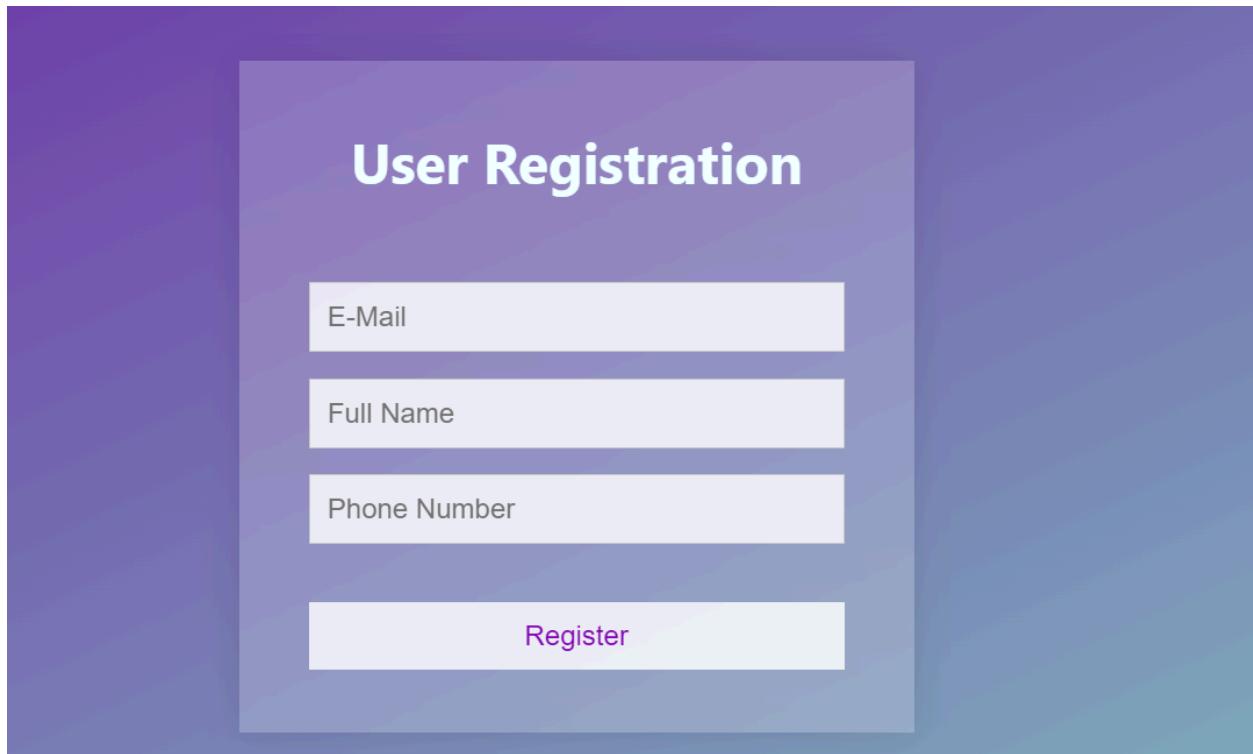
```
root@VM2:/home/jatin.saini3# docker network create incedo-nw
cc613caa0f047f2ee26364536968f766c8ea49103e98afaed8d807ea334ada8d
root@VM2:/home/jatin.saini3# docker network ls
NETWORK ID      NAME      DRIVER      SCOPE
948e809be789   bridge    bridge      local
c33b3472f64d   host      host      local
cc613caa0f04   incedo-nw  bridge      local
391dcae421e9   none      null      local
root@VM2:/home/jatin.saini3# docker images
REPOSITORY      TAG      IMAGE ID      CREATED      SIZE
root@VM2:/home/jatin.saini3# docker pull nginx:latest
latest: Pulling from library/nginx
2f44b7a888fa: Pull complete
8b7dd3ed1dc3: Pull complete
35497dd96569: Pull complete
36664b6ce66b: Pull complete
2d455521f76c: Pull complete
dc9c4fdb83d6: Pull complete
8056d2bcf3b6: Pull complete
Digest: sha256:4c0fdada8b6341bfdeca5f18f7837462c80cff90527ee35ef185571e1c327beac
Status: Downloaded newer image for nginx:latest
docker.io/library/nginx:latest
root@VM2:/home/jatin.saini3# docker images
REPOSITORY      TAG      IMAGE ID      CREATED      SIZE
nginx          latest    a8758716bb6a  3 months ago  187MB
```

```
Bash    ▼ | ⏺ ? ⚙ 🔍 ⌂ { } ⌂  
/ # wget -q -O - http://172.18.0.2:80  
<!DOCTYPE html>  
<html>  
<head>  
<title>Welcome to nginx!</title>  
<style>  
html { color-scheme: light dark; }  
body { width: 35em; margin: 0 auto;  
font-family: Tahoma, Verdana, Arial, sans-serif; }  
</style>  
</head>  
<body>  
<h1>Welcome to nginx!</h1>  
<p>If you see this page, the nginx web server is successfully installed and  
working. Further configuration is required.</p>  
  
<p>For online documentation and support please refer to  
<a href="http://nginx.org/">nginx.org</a>.<br/>  
Commercial support is available at  
<a href="http://nginx.com/">nginx.com</a>.</p>  
  
<p><em>Thank you for using nginx.</em></p>  
</body>  
</html>  
/ # docker ps -aq  
sh: docker: not found
```

```
Bash    ▼ | ⏺ ? ⚙ 🔍 ⌂ { } ⌂  
  
</head>  
<body>  
<h1>Welcome to nginx!</h1>  
<p>If you see this page, the nginx web server is successfully installed and  
working. Further configuration is required.</p>  
  
<p>For online documentation and support please refer to  
<a href="http://nginx.org/">nginx.org</a>.<br/>  
Commercial support is available at  
<a href="http://nginx.com/">nginx.com</a>.</p>  
  
<p><em>Thank you for using nginx.</em></p>  
</body>  
</html>  
/ # docker rm $(docker ps -aq) --force && docker rmi $(docker images -q) --force  
sh: docker: not found  
sh: docker: not found
```

25th January

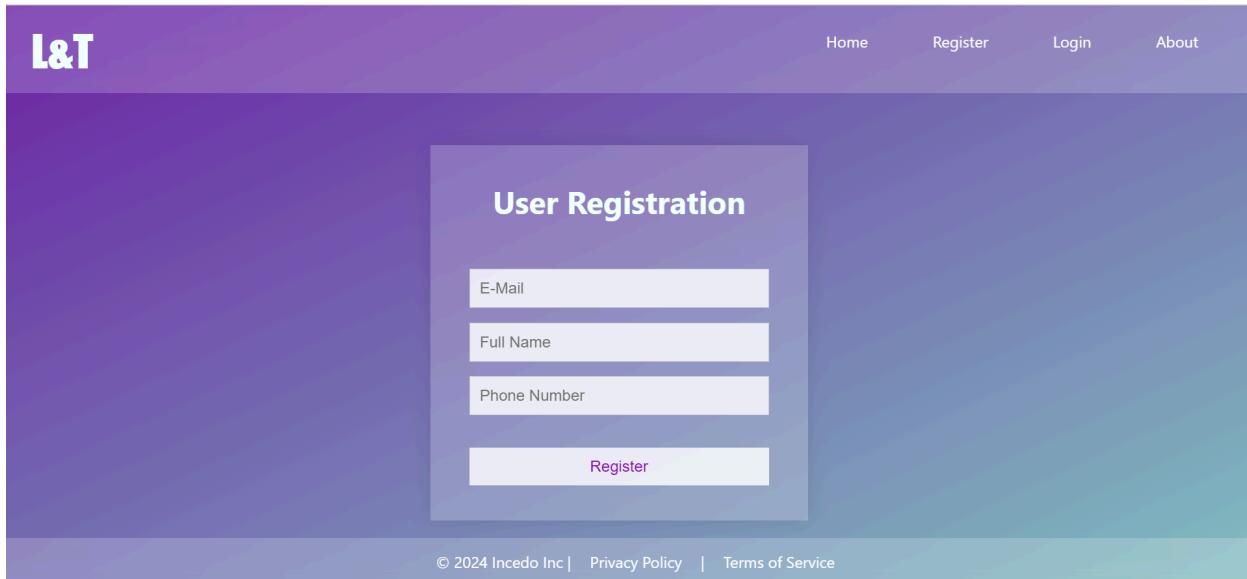
Worked on the functionality of the OTP, Worked verifying email page and front end of the website along with the user registration page



P.T.O.

26th January

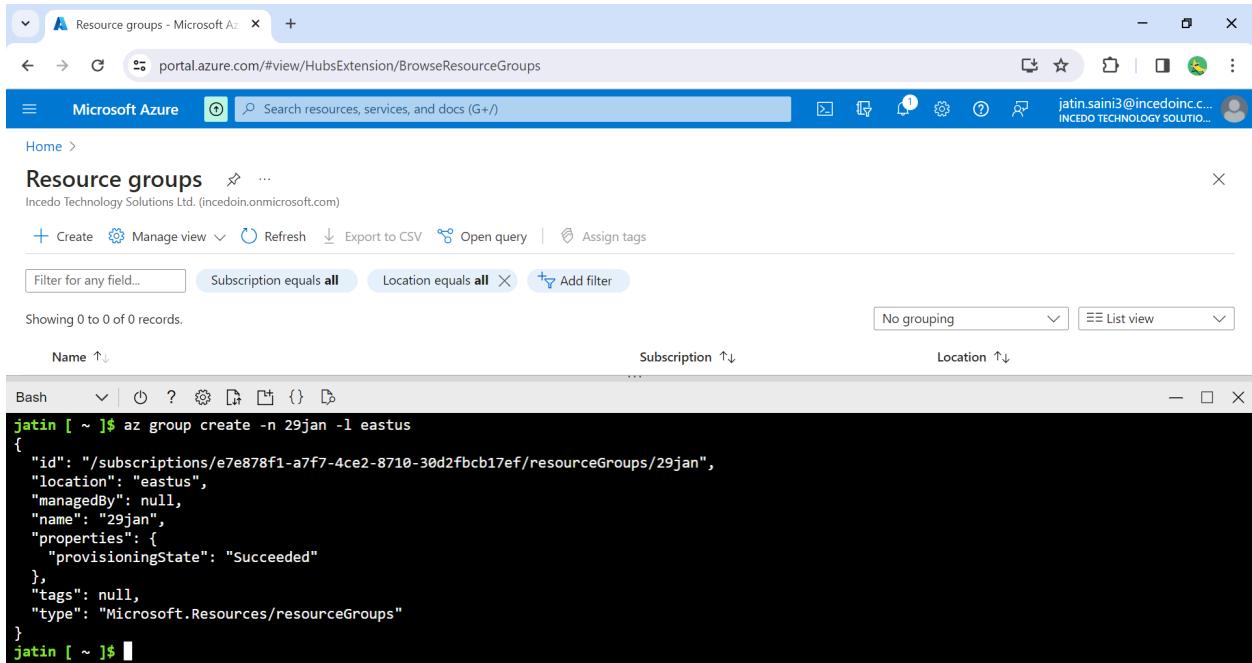
Worked on the Homepage of the website and integrated all the pages together.



P.T.O.

29th January

Studying Subnets



The screenshot shows the Microsoft Azure portal interface. The title bar says "Resource groups - Microsoft Az...". The address bar shows "portal.azure.com/#view/HubsExtension/BrowseResourceGroups". The top navigation bar includes "Microsoft Azure", a search bar, and user information "jatin.saini3@incedoi... INCEDO TECHNOLOGY SOLU...". Below the navigation is a breadcrumb trail "Home > Resource groups". The main content area is titled "Resource groups" and shows a table with one record. The table has columns "Name", "Subscription", and "Location". The single record is "29jan" (Subscription: "/subscriptions/e7e878f1-a7f7-4ce2-8710-30d2fbcb17ef/resourceGroups/29jan", Location: "eastus"). At the bottom of the table, there is a command-line interface (Bash) window showing the output of the command "az group create -n 29jan -l eastus". The output is a JSON object representing the newly created resource group.

```
jatin [ ~ ]$ az group create -n 29jan -l eastus
{
  "id": "/subscriptions/e7e878f1-a7f7-4ce2-8710-30d2fbcb17ef/resourceGroups/29jan",
  "location": "eastus",
  "managedBy": null,
  "name": "29jan",
  "properties": {
    "provisioningState": "Succeeded"
  },
  "tags": null,
  "type": "Microsoft.Resources/resourceGroups"
}
jatin [ ~ ]$
```

```
az network vnet create \
    --resource-group CreatePubLBQS-rg \
    --location eastus \
    --name myVNet \
    --address-prefixes 10.1.0.0/16 \
    --subnet-name myBackendSubnet \
    --subnet-prefixes 10.1.0.0/24
```

The screenshot shows a Windows desktop environment with a Microsoft Edge browser window open to the Azure portal. The browser tabs include 'Resource groups - Microsoft Az', 'Google Docs: Online Document', 'Untitled document - Google Doc', and 'Activity daily - Google Docs'. The main content area of the browser displays a terminal session titled 'Bash'.

The terminal session shows the following command being run:

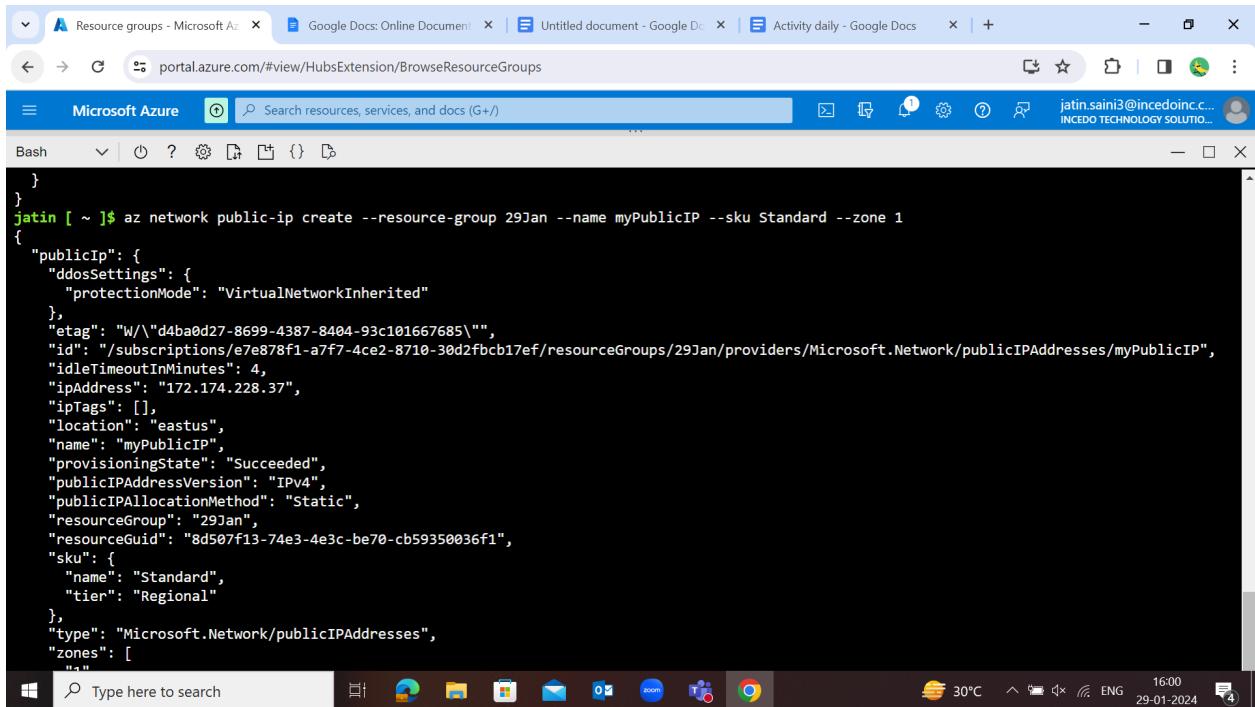
```
jatin [ ~ ]$ az network vnet create --resource-group 29jan -l eastus -n myVNet --address-prefixes 10.1.0.0/16 --subnet-name myBackendSubnet --subnet-prefixes 10.1.0.0/24
```

Below the command, the terminal displays the JSON response from the Azure API, which includes details about the newly created virtual network 'myVNet'.

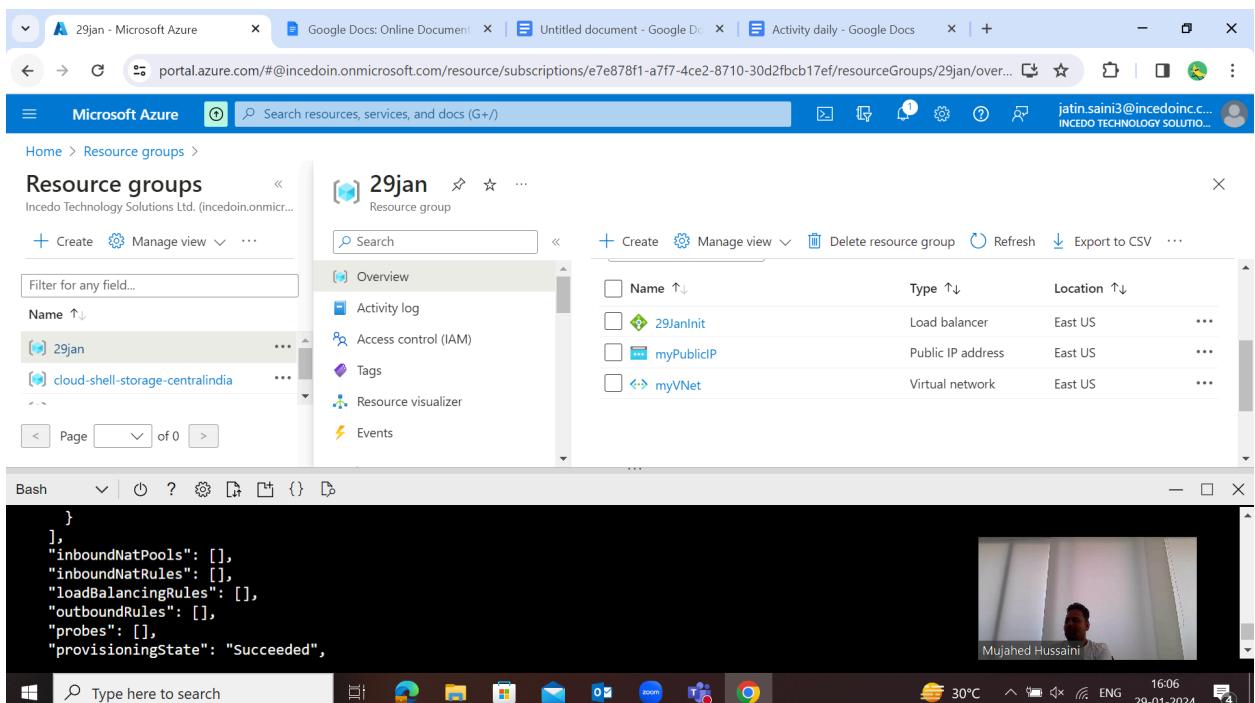
```
{
  "managedBy": null,
  "name": "29jan",
  "properties": {
    "provisioningState": "Succeeded"
  },
  "tags": null,
  "type": "Microsoft.Resources/resourceGroups"
}
jatin [ ~ ]$ az network vnet create --resource-group 29jan -l eastus -n myVNet --address-prefixes 10.1.0.0/16 --subnet-name myBackendSubnet --subnet-prefixes 10.1.0.0/24
{
  "newVNet": {
    "addressSpace": {
      "addressPrefixes": [
        "10.1.0.0/16"
      ]
    },
    "enableDdosProtection": false,
    "etag": "W/\"88de39cb-24f7-4c0b-92fa-3adf2254a21f\"",
    "id": "/subscriptions/e7e878f1-a7f7-4ce2-8710-30d2fbcb17ef/resourceGroups/29jan/providers/Microsoft.Network/virtualNetworks/myVNet",
    "location": "eastus",
    "name": "myVNet",
    "provisioningState": "Succeeded",
    "resourceGroup": "29jan",
    "resourceGuid": "a1351536-e6b5-4f91-a189-b52936b72f6a",
    "subnets": [
      {
        "name": "myBackendSubnet",
        "addressPrefix": "10.1.0.0/24",
        "cidr": "10.1.0.0/24",
        "delegatedPeering": null,
        "ipConfigurations": [
          {
            "name": "ipconfig1",
            "privateIpAddress": "10.1.0.1",
            "publicIpAddress": null,
            "subnet": {
              "id": "/subscriptions/e7e878f1-a7f7-4ce2-8710-30d2fbcb17ef/resourceGroups/29jan/providers/Microsoft.Network/virtualNetworks/myVNet/subnets/myBackendSubnet"
            }
          }
        ],
        "macAddress": null,
        "networkSecurityGroup": null,
        "privateIpAllocationMethod": "Dynamic",
        "privateIpVersion": "IPv4",
        "publicIpAllocationMethod": null,
        "publicIpVersion": null
      }
    ]
  }
}
```

The system tray at the bottom of the screen shows the date (29-01-2024), time (15:59), battery level (30°C), and other system icons.

```
az network public-ip create --resource-group CreatePubLBQS-rg --name myPublicIP --sku Standard --zone 1
```



```
jatin [ ~ ]$ az network public-ip create --resource-group 29Jan --name myPublicIP --sku Standard --zone 1
{
  "publicIp": {
    "ddosSettings": {
      "protectionMode": "VirtualNetworkInherited"
    },
    "etag": "W/"d4ba0d27-8699-4387-8404-93c101667685"",
    "id": "/subscriptions/e7e878f1-a7f7-4ce2-8710-30d2fbcb17ef/resourceGroups/29Jan/providers/Microsoft.Network/publicIPAddresses/myPublicIP",
    "idleTimeoutInMinutes": 4,
    "ipAddress": "172.174.228.37",
    "ipTags": [],
    "location": "eastus",
    "name": "myPublicIP",
    "provisioningState": "Succeeded",
    "publicIPAddressVersion": "IPv4",
    "publicIPAllocationMethod": "Static",
    "resourceGroup": "29Jan",
    "resourceGuid": "8d507f13-74e3-4e3c-be70-cb59350036f1",
    "sku": {
      "name": "Standard",
      "tier": "Regional"
    },
    "type": "Microsoft.Network/publicIPAddresses",
    "zones": [
      ""
    ]
  }
}
```



Home > Resource groups >

Resource groups

Incedo Technology Solutions Ltd. (incedoin.onmicrosoft.com)

+ Create Manage view ...

Name	Type	Location	...
29Jan	Load balancer	East US	...
myPublicIP	Public IP address	East US	...
myVNet	Virtual network	East US	...

Bash

```
}
```

Health Probe

A screenshot of the Microsoft Azure portal showing a terminal session within a resource group. The terminal window displays a command to create a network load balancer probe:

```
jatin [ ~ ]$ az network lb probe create --resource-group 29jan --lb-name 29JanInit --name myHealthProbe --protocol tcp --port 80
{
  "etag": "W/\"62519701-e880-47f6-ba24-05ca2a89f4e1\"",
  "id": "/subscriptions/e7e878f1-a7f7-4ce2-8710-30d2fbcb17ef/resourceGroups/29jan/providers/Microsoft.Network/loadBalancers/29JanInit/probes/myHealthProbe",
  "intervalInSeconds": 15,
  "name": "myHealthProbe",
  "numberOfProbes": 2,
  "port": 80,
  "probeThreshold": 1,
  "protocol": "tcp",
  "provisioningState": "Succeeded",
  "resourceGroup": "29jan",
  "type": "Microsoft.Network/loadBalancers/probes"
}
```

A screenshot of the Microsoft Azure portal showing the overview of the '29jan' resource group. The left sidebar shows navigation options like Overview, Activity log, Access control (IAM), Tags, Resource visualizer, and Events. The main pane displays a table of resources:

Name	Type	Location	...
29JanInit	Load balancer	East US	...
myNSG	Network security group	East US	...
myPublicIP	Public IP address	East US	...
myVNet	Virtual network	East US	...

The terminal window at the bottom shows a command to create a network security group rule:

```
"provisioningState": "Succeeded",
"resourceGroup": "29jan",
"sourceAddressPrefix": "*",
"sourceAddressPrefixes": [],
"sourcePortRange": "*",
"sourcePortRanges": [],
"type": "Microsoft.Network/networkSecurityGroups/securityRules"
}
```

Resource groups

29jan

Name	Type	Location	Actions
29JanInIt	Load balancer	East US	...
myBastionIP	Public IP address	East US	...
myNSG	Network security group	East US	...
myPublicIP	Public IP address	East US	...
myVNet	Virtual network	East US	...

Bash

```
--vnet-name myVNet \
--location eastus
The command requires the extension bastion. Do you want to install it now? The command will continue to run after the extension is installed. (Y/n); Y
Run 'az config set extension.use_dynamic_install=yes_without_prompt' to allow installing extensions without prompt.
Default enabled including preview versions for extension installation now. Disabled in May 2024. Use '--allow-preview true' to enable it specifically if needed. Use '--allow-preview false' to install stable version only.
This command is in preview and under development. Reference and support levels: https://aka.ms/CLI_refstatus
\ Running ...
```

Resource groups

29jan

Name	Type	Location	Actions
29JanInIt	Load balancer	East US	...
myBastionHost	Bastion	East US	...
myBastionIP	Public IP address	East US	...
myNSG	Network security group	East US	...
myPublicIP	Public IP address	East US	...

Bash

```
"provisioningState": "Succeeded",
"resourceGroup": "29jan",
"scaleUnits": 2,
"sku": {
  "name": "Standard"
},
"type": "Microsoft.Network/bastionHosts"
}
jatin [ ~ ]$
```

A 29jan - Microsoft Azure Google Docs: Online Document Untitled document - Google Docs Activity daily - Google Docs

portal.azure.com/#@incedoin.onmicrosoft.com/resource/subscriptions/e7e878f1-a7f7-4ce2-8710-30d2fbcb17ef/resourceGroups/29jan...

Microsoft Azure Upgrade Search resources, services, and docs (G+)

Home > Resource groups >

Resource groups

Incedo Technology Solutions Ltd. (incedoin.onmicrosoft.com)

+ Create Manage view ...

Filter for any field...

Name ↑

- [?] 29jan ...
- [?] cloud-shell-storage-centralindia ...
- [?] NetworkWatcherRG ...

Page 1 of 1

29jan Resource group

Overview Activity log Tags Resource visualizer Events Settings Deployments Security

Create Manage view Delete resource group Refresh Export to CSV Open query Assign tags Move ...

Type	Name	Location	...
Bastion	myBastionHost	East US	...
Public IP address	myBastionIP	East US	...
Network Interface	myNicVM1	East US	...
Network Interface	myNicVM2	East US	...
Network security group	myNSG	East US	...
Public IP address	myPublicIP	East US	...
Virtual machine	myVM1	East US	...
Disk	myVM1_disk1_4abbe3d2247047fe9d23005a78531975	East US	...

Bash

```
Confirm Admin Password:  
jatin [ ~ ]$ az vm create --resource-group 29jan --name myVM2 --nics myNicM2 --image win2019datacenter --admin-username azureuser --zone 2 --no-wait  
Admin Password:  
Confirm Admin Password:
```

A 29jan - Microsoft Azure Google Docs: Online Document Untitled document - Google Docs Activity daily - Google Docs

portal.azure.com/#@incedoin.onmicrosoft.com/resource/subscriptions/e7e878f1-a7f7-4ce2-8710-30d2fbcb17ef/resourceGroups/29jan...

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- [?] 29jan ...
- [?] cloud-shell-storage-centralindia ...
- [?] NetworkWatcherRG ...

Page 1 of 1

29jan Resource group

Overview Activity log Tags Resource visualizer Events Settings Deployments Security

Create Manage view Delete resource group Refresh Export to CSV Open query Assign tags Move ...

Type	Name	Location	...
Network Interface	myNicVM2	East US	...
Network security group	myNSG	East US	...
Public IP address	myPublicIP	East US	...
Virtual machine	myVM1	East US	...
Disk	myVM1_disk1_4abbe3d2247047fe9d23005a78531975	East US	...
Virtual machine	myVM2	East US	...
Disk	myVM2_OsDisk_1_acbeec92c29740758b2b028ef1ca13aa3	East US	...
Virtual network	myVNet	East US	...

Bash

```
Confirm Admin Password:  
jatin [ ~ ]$ az vm create --resource-group 29jan --name myVM2 --nics myNicM2 --image win2019datacenter --admin-username azureuser --zone 2 --no-wait  
Admin Password:  
Confirm Admin Password:  
jatin [ ~ ]$
```

Type here to search

29°C 17:14 29-01-2024 ENG

```
dash [ ~ ]$ az network public-ip create \
    --resource-group 29jan \
    --name myNATgatewayIP \
    --sku Standard \
    --zone 1 2 3
Command group 'az network' is in preview and under development. Reference and support levels: https://aka.ms/CLI_refstatus
{
    "publicIp": {
        "ddosSettings": {
            "jatin [ ~ ]$ az network vnet subnet update \
                --resource-group 29jan \
                --vnet-name myVNet \
                --name myBackendSubnet \
                --nat-gateway myNATgateway
Command group 'az network' is in preview and under development. Reference and support levels: https://aka.ms/CLI_refstatus
{
```

```
jatin [ ~ ]$ array=(myVM1 myVM2)
for vm in "${array[@]}"
do
    az vm extension set \
        --publisher Microsoft.Compute \
        --version 1.8 --name CustomScriptExtension \
        --vm-name $vm --resource-group 29jan \
        --settings '{"commandToExecute":"powershell Add-WindowsFeature Web-Server; powershell Add-Content -Path \"C:\inetpub\wwwroot\jatin.htm\" -Value $($env:computername)"}'
done
[Running ...]
```

```
"typeHandlerVersion": "1.8",
"typePropertiesType": "CustomScriptExtension"
}
jatin [ ~ ]$ az network public-ip show \
    --resource-group 29jan \
    --name myPublicIP \
    --query ipAddress \
    --output tsv
Command group 'az network' is in preview and under development. Reference and support levels: https://aka.ms/CLI_refstatus
172.174.228.37
https://contoso123.com/#/incodin.onmicrosoft.com/resource/subscriptions
```

Home > Resource groups >

Resource groups

29jan

Resource group

172.174.228.37

Not secure 172.174.228.37

myVM1

Activity log

Access control (IAM)

Tags

Resource visualizer

Events

Settings

Deploy

Security

Page 1 of 1

```
sh
az network public-ip show \
--resource-group 29jan \
--name myPublicIP \
--query ipAddress \
--output tsv
Command group 'az network' is in preview and under development. Reference and support levels: https://aka.ms/CLI_refstatus
2.174.228.37
```

After deleting VM1

Resource groups

29jan

cloud-shell-storage-centralindia

NetworkWatcherRG

myNICVMZ

myNSG

myPublicIP

myVM1_disk1_4abbe3d2247047fe9d23005a7853

172.174.228.37/jatin.htm

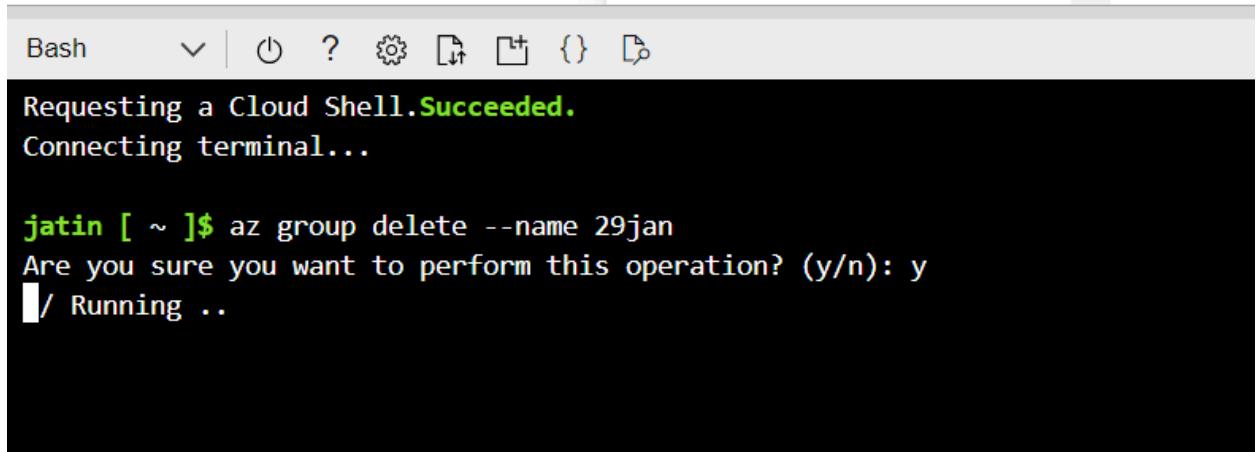
Not secure 172.174.228.37/jatin.htm

myVM2

Bash

Connecting terminal...

```
jatin [ ~ ]$ az network public-ip show \
--resource-group 29jan \
--name myPublicIP \
--query ipAddress \
--output tsv
Command group 'az network' is in preview and under development
172.174.228.37
jatin [ ~ ]$
```



Bash

Requesting a Cloud Shell. **Succeeded.**

Connecting terminal...

jatin [~]\$ az group delete --name 29jan

Are you sure you want to perform this operation? (y/n): y

/ Running ..

The screenshot shows a terminal window titled "Bash". It displays a success message for requesting a Cloud Shell ("Succeeded.") and connecting to it. The user then runs the command "az group delete --name 29jan". A confirmation prompt asks if they are sure about performing the operation, with the response "y" entered. Below the command, the status "Running .." is shown.

P.T.O.

B. Updated the CSS of the Home page and formatting the remaining code files

```
# style.css 1 X
static > # style.css > ↗ body
1
2   body {
3     display: flex;
4     font-family: 'Segoe UI', Tahoma, Geneva, Verdana, sans-serif;
5     /* background-color: #80BCBD; */
6     margin: 0;
7     padding: 0;
8     justify-content: center;
9     align-items: center;
10    height: 100vh;
11    color: #333;
12    background-image: linear-gradient(to bottom right, #6C22A6, #83C0C1 );
13  }
14
15 #otp-button{
16   /* border-radius: 8px; */
17 }
18
19 .container {
20   backdrop-filter: blur(5px);
21   -webkit-backdrop-filter: blur(5px);
22   background: rgba(255, 255, 255, 0.2);
23   /* background-color: #F9F7C9; */
24   padding: 40px;
25   padding-top: 4px;
26   /* border-radius: 8px; */
27   box-shadow: 0 0 20px rgba(0, 0, 0, 0.1);
28   width: 300px;
29   text-align: center;
30 }
31
32 .form-container{
33
34   margin-bottom: 2rem;
35   padding-top: 1rem;
36 }
37
38
39 #userType {
40   width: 100%;
41   padding: 10px;
42   margin-bottom: 15px;
43   background-color: #fffffd5;
44   border: 1px solid #ccc;
45   /* border-radius: 5px; */
46   font-size: 16px;
47   box-sizing: border-box;
48   color: #555;
49 }
50 p {
```

30 January

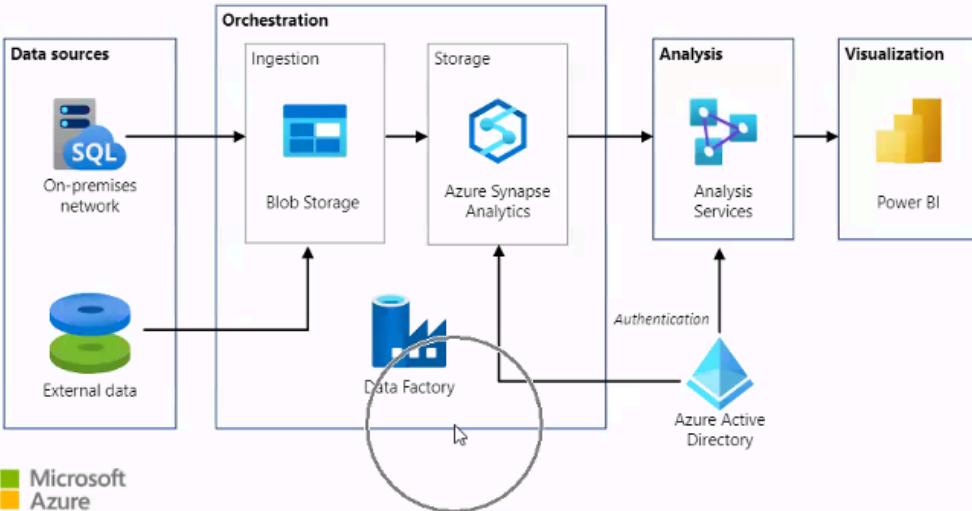
Learning Agile and everything else

```
Agile
    Documentation: Confluence, Github pages
    Ticketing Tool: Trello, Jira, Github Issue
    Chat: Slack, Microsoft Team
Designing
    Graphic: Corel, Photoshop, AI
    Web/Mobile App: AdobeXD, Figma
    Database: ER Diagram, Draw.io
    Software: UML
Development
    Distributed VCS: Github, GitLab Repo, Bitbucket
    Testing:
        Automated Testing: Selenium, JUnit, TestNG,
        Continues Testing: Jenkins, Github
    Continues Integration: Jenkins, Github Action(Infra Automation), GitLab
    Continues Deployment/Configuration/Delivery/Release:
        Infra. Erovisioning: Terraform
        Configuration Mgt: Ansible
```

2nd February

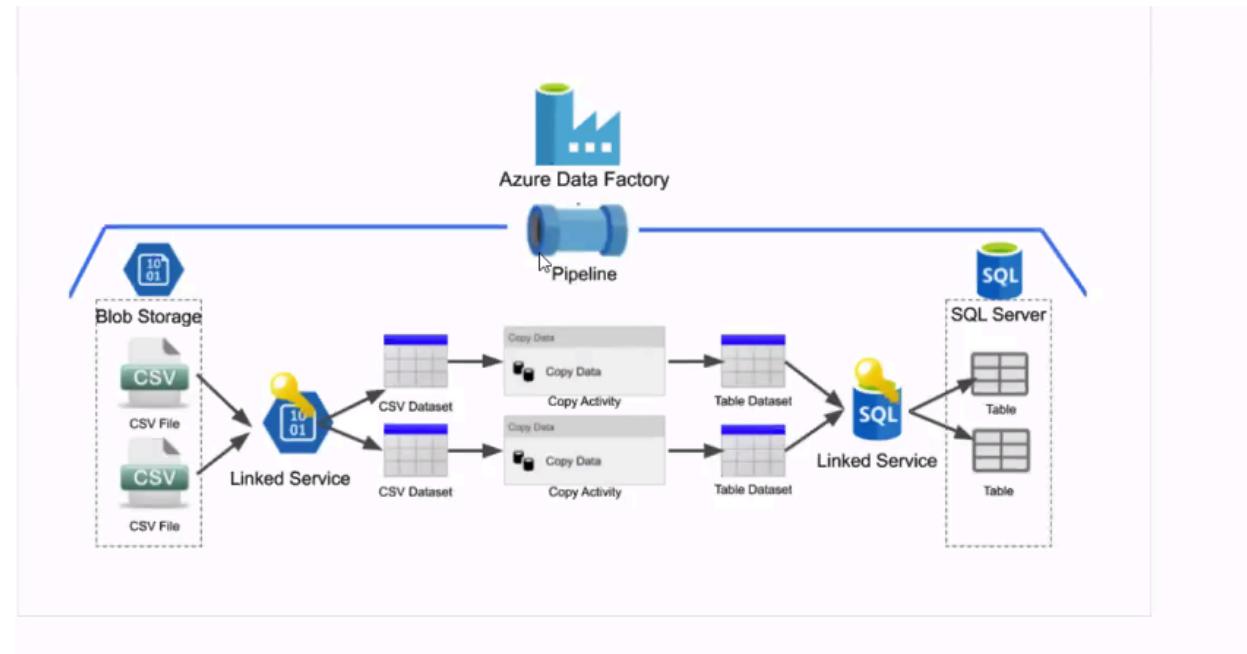
Studying the remaining topics of Azure and creating a database with a sample csv.

Friday, February 2, 2024 11:15 AM



Microsoft
Azure

□ (Ctrl) ▾



Link service =dataset = activities

MODULE 1

Restoring Database

The screenshot shows the Microsoft Azure portal interface for creating a new SQL database. The top navigation bar includes tabs for 'Create SQL Database - Microsoft' and 'Activity daily - Google Docs'. The main title is 'Create SQL Database'. Below it, there are tabs for 'Basics', 'Networking', 'Security', 'Additional settings', 'Tags', and 'Review + create'. The 'Review + create' tab is currently selected. On the left, under 'Product details', it says 'SQL database by Microsoft' and provides links for 'Terms of use' and 'Privacy policy'. In the center, there's a summary box for 'Estimated cost' showing 'Storage cost 406.46 INR / month + Compute cost 0.012314 INR / vCore second'. To the right, a larger box displays the 'Cost summary' for a 'General Purpose (GP_S_Gen5_1)' instance, showing a cost of 9.77 INR per month. At the bottom, there are buttons for 'Validating...', '< Previous', and 'Download a template for automation'.

The screenshot shows the DBeaver 23.3.0 interface. On the left, the 'Database Navigator' shows several databases: 'db1 - sqlwastaken.database.windows.net:1433', 'DBeaver Sample Database (SQLite)', 'dbfeedbackmgt - dbserver23jandeepak.database.windows.net', and 'sqlwastaken.database.windows.net'. In the center, a 'SQL Server Connection Settings' dialog is open, showing 'Driver properties' and 'Server' settings. A 'Connection test' dialog is overlaid, displaying the message 'Connected (2839 ms)'. The 'Driver' section shows 'Microsoft JDBC Driver 9.2 for SQL Server 9.2.0.0'. On the right, the 'Tables' view shows a table named 'Answer' with columns 'Value' and 'Question'. One row in the table has a value of '13'. At the bottom, a 'Project - General' panel shows a list of project files: 'Bookmarks', 'Diagrams', and 'Scripts'.

The screenshot shows the Microsoft Azure Query editor (preview) interface. The left sidebar contains navigation links for Overview, Activity log, Tags, Diagnose and solve problems, Query editor (preview), Settings (Compute + storage, Connection strings, Properties, Locks), Data management (Replicas, Sync to other databases), and Integrations (Stream analytics (preview), Add Azure AI Search). The main area displays a query editor titled "Query 1" with a single digit "1" entered. Below the editor are tabs for "Results" and "Messages". A note in the top right of the main area says "Showing limited object explorer here. For full capability please click here to open Azure Data Studio." The URL in the browser bar is <https://portal.azure.com/#@incedoin.onmicrosoft.com/resource/subscriptions/e7e878f1-a7f7-4ce2-8710-30d2fbcb17ef/resourceGroups/>.

Data Factory Activity

The screenshot shows the Microsoft Azure Storage Container "ac1" interface. The left sidebar includes links for Overview, Diagnose and solve problems, Access Control (IAM), Settings (Shared access tokens, Manage ACL, Access policy, Properties, Metadata), and a "Container" link. The main area shows a table of blobs. The table has columns: Name, Modified, Access tier, Archive status, Blob type, Size, and Lease state. One blob is listed: "emp.txt" (Modified: 2/2/2024, 5:51:33 PM, Access tier: Hot (Inferred), Blob type: Block blob, Size: 38 B, Lease state: Available). At the top of the main area, there are buttons for Upload, Add Directory, Refresh, Rename, Delete, Change tier, Acquire lease, Break lease, and Give feedback. The URL in the browser bar is https://portal.azure.com/#view/Microsoft_Azure_Storage/ContainerMenuBlade/-/overview/storageAccountId/%2Fsubscriptions%2Fe7e878f1-a7f7-4ce2-8710-30d2fbcb17ef/resourceGroups%2Frg02/providers/Microsoft.Storage/storageAccounts/ac1.

Name	Modified	Access tier	Archive status	Blob type	Size	Lease state
emp.txt	2/2/2024, 5:51:33 PM	Hot (Inferred)		Block blob	38 B	Available

The screenshot shows the Microsoft Azure Data Factory Studio interface. On the left, there's a navigation sidebar with sections like Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Settings (Networking, Managed identities, Properties, Locks), Getting started (Quick start), Monitoring (Alerts, Metrics, Diagnostic settings), and a JSON View button.

The main content area displays the 'Essentials' section for the resource group 'rg02'. It shows the status as 'Succeeded', location as 'East US', and subscription information ('AZ_MSSQL_Training'). A large blue icon of a factory building is centered above the text 'Azure Data Factory Studio'. Below it is a 'Launch studio' button and four cards: 'Quick Starts', 'Tutorials', 'Template Gallery', and 'Training Modules'.

The screenshot shows the Microsoft Azure Data Factory authoring interface. The left sidebar lists 'Factory Resources' under 'Pipelines', showing one pipeline named 'pipelinejatin'. The main panel shows the 'Activities' section with options like Copy data, Data flow, Synapse, Azure Data Explorer, Azure Function, Batch Service, Databricks, Data Lake Analytics, and General.

A 'New linked service' dialog is open on the right. It's configured for 'Azure Blob Storage' using an 'Account key'. The 'Connection string' tab is selected. Under 'Account selection method', 'From Azure subscription' is chosen. The 'Azure subscription' dropdown shows 'AZ MSSQL Training (e7e878f1-a7f7-4ce2-8710-30d2fbcb17ef)'. The 'Storage account name' field is set to 'safeb02'. At the bottom, a green checkmark indicates 'Connection successful'.

Screenshot of Microsoft Azure Data Factory - Preview data page.

Linked service: AzureSqlDatabase1

Object: dbo.emp

ID	FirstName	LastName
1	John	Doe
2	Jane	Doe

Screenshot of Microsoft Azure Data Factory - Pipeline runs page.

All pipeline runs > pipelinejatin - Activity runs

Activity runs

Pipeline run ID 657d4980-1cf3-47d8-931a-a1089e7b4e08

Activity name	Activity status	Activity type	Run start	Duration	Integration runtime	User prc
cd1	Succeeded	Copy data	2/2/2024, 6:07:54 PM	17s	AutoResolveIntegratio	

Screenshot of Microsoft Azure Data Factory Pipeline runs page.

The pipeline runs table shows the following data:

Pipeline name	Run start	Run end	Duration	Triggered by	Status
pipelinejatin	2/2/2024, 6:15:01 PM	--	12s	autotrigger	In progr
pipelinejatin	2/2/2024, 6:14:01 PM	2/2/2024, 6:14:19 PM	19s	autotrigger	Succeed
pipelinejatin	2/2/2024, 6:13:02 PM	2/2/2024, 6:13:32 PM	30s	autotrigger	Succeed
pipelinejatin	2/2/2024, 6:12:01 PM	2/2/2024, 6:12:19 PM	18s	autotrigger	Succeed
pipelinejatin	2/2/2024, 6:07:52 PM	2/2/2024, 6:08:12 PM	20s	Manual trigger	Succeed

Screenshot of Microsoft Azure Data Factory Preview data page.

The preview data table shows the following data:

ID	FirstName	LastName
1	John	Doe
2	Jane	Doe
3	John	Doe
4	Jane	Doe
5	John	Doe
6	Jane	Doe
7	John	Doe
8	Jane	Doe
9	John	Doe
10	Jane	Doe

FEB 3rd

VNET

```
az group create --name rg03Jatin --location eastus
```

```
jatin [ ~ ]$ ^[[200~az group create --name rg03Jatin --location eastus~  
bash: $'\E[200~': command not found  
jatin [ ~ ]$ az group create --name rg03Jatin --location eastus  
{  
  "id": "/subscriptions/e7e878f1-a7f7-4ce2-8710-30d2fbcb17ef/resourceGroups/rg03Jatin",  
  "location": "eastus",  
  "managedBy": null,  
  "name": "rg03Jatin",  
  "properties": {  
    "provisioningState": "Succeeded"  
  },  
  "tags": null,  
  "type": "Microsoft.Resources/resourceGroups"  
}
```

```
az network vnet create \  
  --name Vn1Jatin\  
  --resource-group rg03Jatin \  
  --address-prefixes 10.0.0.0/16 \  
  --subnet-name Subnet1 \  
  --subnet-prefix 10.0.0.0/24
```

```
jatin [ ~ ]$ az network vnet create \  
  --name Vn1Jatin\  
  --resource-group rg03Jatin \  
  --address-prefixes 10.0.0.0/16 \  
  --subnet-name Subnet1 \  
  --subnet-prefix 10.0.0.0/24  
Command group 'az network' is in preview and under development. Reference and support levels: https://aka.ms/CLI_refstatus  
{  
  "newVNet": {  
    "addressSpace": {  
      "addressPrefixes": [  
        "10.0.0.0/16"  
      ]  
    },  
    "enableDdosProtection": false,  
    "etag": "W/"9a02555b-54ee-462f-924e-e5867d50d66e\"",  
    "id": "/subscriptions/e7e878f1-a7f7-4ce2-8710-30d2fbcb17ef/resourceGroups/rg03Jatin/providers/Microsoft.Network/virtualNetworks/Vn1Jatin",  
  }
```

```
az network vnet create \  
  --name Vn2Jatin \  
  --resource-group rg03Jatin \  
  --address-prefixes 10.1.0.0/16 \  
  --subnet-name Subnet1 \  
  --subnet-prefix 10.1.0.0/24
```

```
jatin [ ~ ]$ az network vnet create \
    --name Vn2Jatin \
    --resource-group rg03Jatin \
    --address-prefixes 10.1.0.0/16 \
    --subnet-name Subnet1 \
    --subnet-prefix 10.1.0.0/24
Command group 'az network' is in preview and under development. Reference and support levels: https://aka.ms/CLI_refstatus
[~/Running ..]
```

Get the id for \$Vnet1.

```
vNet1Id=$(az network vnet show \
    --resource-group rg03Jatin \
    --name Vn1Jatin \
    --query id --out tsv)
```

```
jatin [ ~ ]$ vNet1Id=$(az network vnet show \
    --resource-group rg03Jatin \
    --name Vn1Jatin \
    --query id --out tsv)
WARNING: Command group 'az network' is in preview and under development. Reference and support levels: https://aka.ms/CLI_refstatus
jatin [ ~ ]$
```

Get the id for myVirtualNetwork2.

```
vNet2Id=$(az network vnet show \
    --resource-group rg03Jatin \
    --name Vn2Jatin \
    --query id \
    --out tsv)
```

```
jatin [ ~ ]$ vNet2Id=$(az network vnet show \
    --resource-group rg03Jatin \
    --name Vn2Jatin \
    --query id \
    --out tsv)
WARNING: Command group 'az network' is in preview and under development. Reference and support levels: https://aka.ms/CLI_refstatus
jatin [ ~ ]$
```

#VNet1 to Vent2

```
az network vnet peering create \
    --name myVirtualNetwork1-myVirtualNetwork2 \
    --resource-group rg03Jatin \
    --vnet-name Vn1Jatin \
    --remote-vnet vNet1Id \
    --allow-vnet-access
```

```
az network vnet peering create \
    --name Vn1Jatin-to-Vn2Jatin \
    --resource-group rg03Jatin \
    --vnet-name Vn1Jatin \
```

```
--remote-vnet vNet2Id \
--allow-vnet-access
```

```
jatin [ ~ ]$ az network vnet peering create --name Vn1Jatin-to-Vn2Jatin --resource-group rg03Jatin --vnet-name Vn1Jatin --remote-vnet $vNet2Id --allow-vnet-access
Command group 'az network' is in preview and under development. Reference and support levels: https://aka.ms/CLI_refstatus
{
  "allowForwardedTraffic": false,
  "allowGatewayTransit": false,
  "allowVirtualNetworkAccess": true,
  "doNotVerifyRemoteGateways": false,
  "etag": "W/\"88c3fb68-e95b-42da-8042-698e27953e9c\"",
  "id": "/subscriptions/e7e878f1-a7f7-4ce2-8710-30d2fbc17ef/resourceGroups/rg03Jatin/providers/Microsoft.Network/virtualNetworks/Vn1Jatin/virtualNetworkPeerings/Vn1Jatin-to-Vn2Jatin",
  "name": "Vn1Jatin-to-Vn2Jatin",
  "peeringState": "Initiated",
  "peeringSyncLevel": "RemoteNotInSync",
  "provisioningState": "Succeeded",
  "remoteAddressSpace": {
```

#VNet2 to Vent1

```
az network vnet peering create \
--name Vn2Jatin-to-Vn1Jatin \
--resource-group rg03Jatin \
--vnet-name Vn2Jatin \
--remote-vnet $vNet1Id \
--allow-vnet-access
```

```
jatin [ ~ ]$ az network vnet peering create \
--name Vn2Jatin-to-Vn1Jatin \
--resource-group rg03Jatin \
--vnet-name Vn2Jatin \
--remote-vnet $vNet1Id \
--allow-vnet-access
Command group 'az network' is in preview and under development. Reference and support levels: https://aka.ms/CLI_refstatus
{
  "allowForwardedTraffic": false,
  "allowGatewayTransit": false,
  "allowVirtualNetworkAccess": true,
  "doNotVerifyRemoteGateways": false,
  "etag": "W/\"29aa913c-b8b5-4d72-a9f9-7c10bb6b4071\"",
```

```
az network vnet peering show \
--name Vn1Jatin-to-Vn2Jatin \
--resource-group rg03Jatin \
--vnet-name Vn1Jatin \
--query peeringState
```

```
jatin [ ~ ]$ az network vnet peering show \
--name Vn1Jatin-to-Vn2Jatin \
--resource-group rg03Jatin \
--vnet-name Vn1Jatin \
--query peeringState
Command group 'az network' is in preview and under development. Reference and support levels: https://aka.ms/CLI_refstatus
"Connected"
jatin [ ~ ]$
```

```
##--generate-ssh-keys \
```

```
ssh-keygen -t rsa -b 2048 -f ~/.ssh/jatin_lock
```

```
jatin [ ~ ]$ ssh-keygen -t rsa -b 2048 -f ~/.ssh/jatin_lock
Generating public/private rsa key pair.
Created directory '/home/jatin/.ssh'.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/jatin/.ssh/jatin_lock
Your public key has been saved in /home/jatin/.ssh/jatin_lock.pub
The key fingerprint is:
```

```
az vm create \
--resource-group rg03Jatin \
--name myVm1 \
--image Ubuntu2204 \
--public-ip-sku Standard \
--vnet-name Vn1Jatin\
--subnet Subnet1 \
--ssh-key-value ~/.ssh/jatin_lock.pub \
--no-wait
```

```
jatin [ ~ ]$ az vm create \
--resource-group rg03Jatin \
--name myVm1 \
--image Ubuntu2204 \
--public-ip-sku Standard \
--vnet-name Vn1Jatin\
--subnet Subnet1 \
--ssh-key-value ~/.ssh/jatin_lock.pub \
--no-wait
```

```
az vm create \
--resource-group rg03Jatin \
--name myVm2 \
--image Ubuntu2204 \
--public-ip-sku Standard \
--vnet-name Vn2Jatin \
--subnet Subnet1 \
--ssh-key-value ~/.ssh/jatin_lock.pub #--generate-ssh-keys
```

```
jatin [ ~ ]$ az vm create \
--resource-group rg03Jatin \
--name myVm2 \
--image Ubuntu2204 \
--public-ip-sku Standard \
--vnet-name Vn2Jatin \
--subnet Subnet1 \
--ssh-key-value ~/.ssh/jatin_lock.pub

{
  "fqdns": "",
  "id": "/subscriptions/e7e878f1-a7f7-4ce2-8710-30d2fbcb17ef/resourceGroups/rg03Jatin/providers/Microsoft.Compute/virtualMachines/myVm2",
  "location": "eastus",
  "macAddress": "7C-1E-52-0C-EE-CE",
  "powerState": "VM running",
  "privateIpAddress": "10.1.0.4",
```

ssh -i ~/.ssh/jatin_lock jatin@20.124.108.89

```
jatin@myVm2:~$ ping 10.0.0.4 -c 4
PING 10.0.0.4 (10.0.0.4) 56(84) bytes of data.
64 bytes from 10.0.0.4: icmp_seq=1 ttl=64 time=5.32 ms
64 bytes from 10.0.0.4: icmp_seq=2 ttl=64 time=1.16 ms
64 bytes from 10.0.0.4: icmp_seq=3 ttl=64 time=6.57 ms
64 bytes from 10.0.0.4: icmp_seq=4 ttl=64 time=1.03 ms

--- 10.0.0.4 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3005ms
rtt min/avg/max/mdev = 1.030/3.519/6.567/2.464 ms
```

#Ping to VM1 ip

ping 10.0.0.4 -c 4

```
jatin [ ~ ]$ ping 10.0.0.4 -c 4
PING 10.0.0.4 (10.0.0.4) 56(84) bytes of data.

--- 10.0.0.4 ping statistics ---
4 packets transmitted, 0 received, 100% packet loss, time 3074ms
```

az group delete --name rg03Jatin --yes

```
jatin [ ~ ]$ az group delete --name rg03Jatin --yes
[!] \Running ...
```

FEB 4th - MODULE 2

The screenshot shows the Azure Data Studio interface for a database named db1. The left sidebar contains navigation links for Overview, Activity log, Tags, Diagnose and solve problems, and Query editor (preview). The main area has tabs for Login, New Query, Open query, Feedback, and Getting started. A search bar is at the top. The central pane displays a query titled 'Query 1' with the following T-SQL code:

```
1 WITH AvgQuantityPerProduct AS (
2     SELECT
3         od.ProductID,
4         AVG(od.OrderQty) AS AvgQuantity
5     FROM
6         SalesLT.SalesOrderDetail od
7     GROUP BY
8         od.ProductID
9 )
10
```

The 'Results' tab is selected, showing a table with the following data:

SalesOrderID	ProductID	ProductName	OrderQty
71780	780	Mountain-200 Silver, 42	4
71780	809	ML Mountain Handlebars	3
71780	869	Women's Mountain Shorts, L	7
71780	905	ML Mountain Frame-W - Silver, 42	4

A message at the bottom says 'Query succeeded | 1s'.

MODULE 2

1. Retrieve a list of customers along with their total order amounts.

SELECT

```
c.CustomerID,  
c.FirstName,  
c.LastName,  
SUM(o.TotalDue) AS TotalOrderAmount  
FROM  
SalesLT.Customer c  
JOIN  
SalesLT.SalesOrderHeader o ON c.CustomerID = o.CustomerID  
GROUP BY  
c.CustomerID, c.FirstName, c.LastName  
ORDER BY  
c.CustomerID;
```

```

4     ....c.LastName,
5     ....SUM(o.TotalDue) AS TotalOrderAmount
6     FROM
7     ....SalesLT.Customer c
8     JOIN
9     ....SalesLT.SalesOrderHeader o ON c.CustomerID = o.CustomerID
10    GROUP BY
11    ....c.CustomerID, c.FirstName, c.LastName
12    ORDER BY
13    ....c.CustomerID;

```

Results Messages

CustomerID	FirstName	LastName	TotalOrderAmount
29485	Catherine	Abel	43962.7901
29531	Cory	Booth	7330.8972
29546	Christopher	Beck	98138.2131
29568	Donald	Blanton	2669.3183

2. Display product information along with the number of units sold for each product.

```

SELECT
    p.ProductID,
    p.Name AS ProductName,
    p.ProductNumber,
    p.Color,
    SUM(od.OrderQty) AS TotalUnitsSold
FROM
    SalesLT.Product p
JOIN
    SalesLT.SalesOrderDetail od ON p.ProductID = od.ProductID
JOIN
    SalesLT.SalesOrderHeader oh ON od.SalesOrderID = oh.SalesOrderID
GROUP BY
    p.ProductID, p.Name, p.ProductNumber, p.Color
ORDER BY
    p.ProductID;

```

3. Find employees who have the same manager.

Data not available.

4. List all customers who have never placed an order.

```

SELECT
    c.CustomerID,

```

```

    c.FirstName,
    c.LastName
FROM
    SalesLT.Customer c
LEFT JOIN
    SalesLT.SalesOrderHeader o ON c.CustomerID = o.CustomerID
WHERE
    o.CustomerID IS NULL;

```

5. Retrieve the total sales amount for each product category.

```

SELECT
    pc.ProductCategoryID,
    pc.Name AS CategoryName,
    SUM(od.OrderQty * od.UnitPrice) AS TotalSalesAmount
FROM
    SalesLT.ProductCategory pc
JOIN
    SalesLT.Product p ON pc.ProductCategoryID = p.ProductCategoryID
JOIN
    SalesLT.SalesOrderDetail od ON p.ProductID = od.ProductID
JOIN
    SalesLT.SalesOrderHeader oh ON od.SalesOrderID = oh.SalesOrderID
GROUP BY
    pc.ProductCategoryID, pc.Name
ORDER BY
    pc.ProductCategoryID;

```

6. Display the names of employees and their direct managers.

Data not available

7. Show the order details with product names for a specific customer.

```

SELECT
    oh.SalesOrderID,
    od.ProductID,
    p.Name AS ProductName,
    od.OrderQty,
    od.UnitPrice,
    od.LineTotal
FROM

```

```

    SalesLT.Customer c
JOIN
    SalesLT.SalesOrderHeader oh ON c.CustomerID = oh.CustomerID
JOIN
    SalesLT.SalesOrderDetail od ON oh.SalesOrderID = od.SalesOrderID
JOIN
    SalesLT.Product p ON od.ProductID = p.ProductID
WHERE
    c.CustomerID = 29485;

```

8. List customers who have made purchases in the last 30 days.

```

SELECT DISTINCT
    c.CustomerID,
    c.FirstName,
    c.LastName
FROM
    SalesLT.Customer c
JOIN
    SalesLT.SalesOrderHeader oh ON c.CustomerID = oh.CustomerID
WHERE
    oh.OrderDate >= DATEADD(day, -30, GETDATE());

```

9. Find employees who do not have any direct reports.

Data Not available

10. Retrieve all products along with their average selling prices.

```

SELECT
    p.ProductID,
    p.Name AS ProductName,
    AVG(od.UnitPrice) AS AverageSellingPrice
FROM
    SalesLT.Product p
JOIN
    SalesLT.SalesOrderDetail od ON p.ProductID = od.ProductID
GROUP BY
    p.ProductID, p.Name
ORDER BY
    p.ProductID;

```

11. Find the order with the highest total amount.

```

SELECT TOP 1
    oh.SalesOrderID,
    oh.OrderDate,
    SUM(od.LineTotal) AS TotalAmount
FROM
    SalesLT.SalesOrderHeader oh
JOIN
    SalesLT.SalesOrderDetail od ON oh.SalesOrderID = od.SalesOrderID
GROUP BY
    oh.SalesOrderID, oh.OrderDate
ORDER BY
    TotalAmount DESC;

```

12. Display customers who have placed orders with a total amount greater than the average.

```

WITH CustomerOrderTotals AS (
    SELECT
        c.CustomerID,
        c.FirstName,
        c.LastName,
        SUM(od.LineTotal) AS TotalAmount
    FROM
        SalesLT.Customer c
    JOIN
        SalesLT.SalesOrderHeader oh ON c.CustomerID = oh.CustomerID
    JOIN
        SalesLT.SalesOrderDetail od ON oh.SalesOrderID = od.SalesOrderID
    GROUP BY
        c.CustomerID, c.FirstName, c.LastName
)

SELECT
    CustomerID,
    FirstName,
    LastName,
    TotalAmount
FROM
    CustomerOrderTotals
WHERE
    TotalAmount > (SELECT AVG(TotalAmount) FROM CustomerOrderTotals);

```

13.List products with prices higher than the average product price.

```
WITH ProductPrices AS (
    SELECT
        ProductID,
        Name AS ProductName,
        ListPrice
    FROM
        SalesLT.Product
)

SELECT
    ProductID,
    ProductName,
    ListPrice
FROM
    ProductPrices
WHERE
    ListPrice > (SELECT AVG(ListPrice) FROM ProductPrices);
```

14.Retrieve orders placed by employees who have a specific job title.

Data not available

15.Display customers who have placed orders for a specific product category.

```
SELECT
    c.CustomerID,
    c.FirstName,
    c.LastName
FROM
    SalesLT.Customer c
JOIN
    SalesLT.SalesOrderHeader oh ON c.CustomerID = oh.CustomerID
JOIN
    SalesLT.SalesOrderDetail od ON oh.SalesOrderID = od.SalesOrderID
JOIN
    SalesLT.Product p ON od.ProductID = p.ProductID
JOIN
```

```
SalesLT.ProductCategory pc ON p.ProductCategoryID =
pc.ProductCategoryID
WHERE
pc.ProductCategoryID = 22;
```

16.Find employees with salaries greater than the average salary in their department.

Data Not available

17.List customers who have placed orders before a specific date.

Enough data not available for query

```
SELECT DISTINCT
c.CustomerID,
c.FirstName,
c.LastName
FROM
SalesLT.Customer c
JOIN
SalesLT.SalesOrderHeader oh ON c.CustomerID = oh.CustomerID
WHERE
oh.OrderDate < 2008-07-02;
```

18.Retrieve the order with the highest quantity of a specific product.

```
SELECT TOP 1
od.SalesOrderID,
od.ProductID,
p.Name AS ProductName,
SUM(od.OrderQty) AS TotalQuantity
FROM
SalesLT.SalesOrderDetail od
JOIN
SalesLT.Product p ON od.ProductID = p.ProductID
WHERE
od.ProductID = 714
GROUP BY
od.SalesOrderID, od.ProductID, p.Name
ORDER BY
TotalQuantity DESC;
```

19. Display products with prices lower than the lowest product price in a specific category.

```
WITH ProductPrices AS (
    SELECT
        p.ProductID,
        p.Name AS ProductName,
        p.ListPrice,
        pc.ProductCategoryID
    FROM
        SalesLT.Product p
    JOIN
        SalesLT.ProductCategory pc ON p.ProductCategoryID =
pc.ProductCategoryID
    WHERE
        pc.ProductCategoryID = 11
)

SELECT
    ProductID,
    ProductName,
    ListPrice
FROM
    ProductPrices
WHERE
    ListPrice < (SELECT MIN(ListPrice) FROM ProductPrices);
```

20. Find employees who have the same job title as their manager.

Data not available

21. Combine results from two queries to get a list of unique customer and employee names.

Data Not Available

22. Retrieve product names that are common in two different product categories.

Not enough data available

```
SELECT
    p.Name AS ProductName
FROM
```

```
SalesLT.Product p
JOIN
    SalesLT.ProductCategory pc1 ON p.ProductCategoryID =
pc1.ProductCategoryID
JOIN
    SalesLT.ProductCategory pc2 ON p.ProductCategoryID =
pc2.ProductCategoryID
WHERE
    pc1.ProductCategoryID <> pc2.ProductCategoryID;
```

23. Display the names of employees and customers in a single result set.

Data Not Available

24. List products that are in stock or have been discontinued.

Data Not Available

25. Combine the results of two queries to find unique products ordered by a specific customer.

```
SELECT DISTINCT
    p.ProductID,
    p.Name AS ProductName
FROM
    SalesLT.Product p
JOIN
    SalesLT.SalesOrderDetail od ON p.ProductID = od.ProductID
JOIN
    SalesLT.SalesOrderHeader oh ON od.SalesOrderID = oh.SalesOrderID
WHERE
    oh.CustomerID = 29485

UNION

SELECT DISTINCT
    p.ProductID,
    p.Name AS ProductName
FROM
    SalesLT.Product p
JOIN
    SalesLT.SalesOrderDetail od ON p.ProductID = od.ProductID
```

```
ORDER BY  
    ProductID;
```

26. Retrieve orders placed by customers and employees in a single result set.

Data not available

27. Display products that are either in a specific category or have a specific safety stock level.

Data not Available

28. List customers who have placed orders and employees who have direct reports in a single result set.

Data Not Available

29. Retrieve products that are in stock in one location and out of stock in another.

Data Not Available

30. Combine information about employees who are managers and employees who have managers

Data Not Available

INTERMEDIATE

31. Retrieve a list of customers along with the names of the products they have purchased.

```
SELECT  
    c.CustomerID,  
    c.FirstName,  
    c.LastName,  
    p.Name AS ProductName  
FROM  
    SalesLT.Customer c  
JOIN  
    SalesLT.SalesOrderHeader oh ON c.CustomerID = oh.CustomerID  
JOIN  
    SalesLT.SalesOrderDetail od ON oh.SalesOrderID = od.SalesOrderID  
JOIN  
    SalesLT.Product p ON od.ProductID = p.ProductID  
ORDER BY  
    c.CustomerID, p.ProductID;
```

32. Display employees who have the same manager, including indirect reports.

Data Not Available

33.Find orders with multiple products and display the product names.

```
SELECT
    oh.SalesOrderID,
    COUNT(DISTINCT od.ProductID) AS NumberOfProducts,
    STRING_AGG(p.Name, ', ') AS ProductNames
FROM
    SalesLT.SalesOrderHeader oh
JOIN
    SalesLT.SalesOrderDetail od ON oh.SalesOrderID = od.SalesOrderID
JOIN
    SalesLT.Product p ON od.ProductID = p.ProductID
GROUP BY
    oh.SalesOrderID
HAVING
    COUNT(DISTINCT od.ProductID) > 1;
```

34.List customers along with the names of the salespeople who handled their orders.

Data Not Available

35.Retrieve a list of products along with the names of suppliers.

Data Not Available

36.Display customers who have placed orders and the products they have purchased, including product details.

```
SELECT
    c.CustomerID,
    c.FirstName,
    c.LastName,
    oh.SalesOrderID,
    p.ProductID,
    p.Name AS ProductName,
    od.OrderQty,
    od.UnitPrice
FROM
    SalesLT.Customer c
JOIN
    SalesLT.SalesOrderHeader oh ON c.CustomerID = oh.CustomerID
```

```

JOIN
    SalesLT.SalesOrderDetail od ON oh.SalesOrderID = od.SalesOrderID
JOIN
    SalesLT.Product p ON od.ProductID = p.ProductID
ORDER BY
    c.CustomerID, oh.SalesOrderID, p.ProductID;

```

37.Find orders where multiple employees were involved, showing the employee names.

Data Not Available

38.List products that have similar names but belong to different categories.

Data Not Enough

39.Retrieve a list of employees along with their training courses and training dates.

Data Not Available

40.Display customers who have placed orders and the total quantity of each product ordered.

```

SELECT
    c.CustomerID,
    c.FirstName,
    c.LastName,
    p.ProductID,
    p.Name AS ProductName,
    SUM(od.OrderQty) AS TotalQuantity
FROM
    SalesLT.Customer c
JOIN
    SalesLT.SalesOrderHeader oh ON c.CustomerID = oh.CustomerID
JOIN
    SalesLT.SalesOrderDetail od ON oh.SalesOrderID = od.SalesOrderID
JOIN
    SalesLT.Product p ON od.ProductID = p.ProductID
GROUP BY
    c.CustomerID, c.FirstName, c.LastName, p.ProductID, p.Name
ORDER BY
    c.CustomerID, p.ProductID;

```

41.Find customers who have made more purchases than the average number of purchases.

Not Enough Data

```
WITH CustomerPurchaseCounts AS (
SELECT
    c.CustomerID,
    COUNT(DISTINCT oh.SalesOrderID) AS PurchaseCount
FROM
    SalesLT.Customer c
JOIN
    SalesLT.SalesOrderHeader oh ON c.CustomerID = oh.CustomerID
JOIN
    SalesLT.SalesOrderDetail od ON oh.SalesOrderID = od.SalesOrderID
GROUP BY
    c.CustomerID
)

SELECT
    c.CustomerID,
    c.FirstName,
    c.LastName,
    c.EmailAddress,
    c.Phone,
    c.CompanyName
FROM
    SalesLT.Customer c
JOIN
    CustomerPurchaseCounts pc ON c.CustomerID = pc.CustomerID
WHERE
    pc.PurchaseCount > (SELECT AVG(PurchaseCount) FROM
CustomerPurchaseCounts);
```

42. Display products that have been ordered more than the average number of times.

```
WITH ProductOrderCounts AS (
SELECT
    p.ProductID,
    p.Name AS ProductName,
    COUNT(od.SalesOrderID) AS OrderCount
FROM
    SalesLT.Product p
JOIN
    SalesLT.SalesOrderDetail od ON p.ProductID = od.ProductID
```

```

    GROUP BY
        p.ProductID, p.Name
)

SELECT
    ProductID,
    ProductName,
    OrderCount
FROM
    ProductOrderCounts
WHERE
    OrderCount > (SELECT AVG(OrderCount) FROM ProductOrderCounts);

```

43. Retrieve orders placed by employees who have completed a specific training course.

Data Not Available

44. List employees who have a higher salary than at least one employee in another department.

Data Not Available

45. Display products that have not been ordered in the last 60 days.

Data Not Available

46. Find employees who have the same job title as the employee with the highest salary.

Data Not Available

47. List customers who have placed orders with a total amount greater than the total amount of a specific order.

48. Retrieve products that have been ordered by customers with the same shipping address.

Not Enough Data

```

WITH CustomerShippingAddresses AS (
    SELECT
        ca.CustomerID,
        ca.AddressID,
        a.AddressLine1,
        a.AddressLine2,
        a.City,
        a.StateProvince,
        a.CountryRegion,

```

```

        a.PostalCode
FROM
    SalesLT.CustomerAddress ca
JOIN
    SalesLT.Address a ON ca.AddressID = a.AddressID
)

SELECT
    p.ProductID,
    p.Name AS ProductName,
    od.SalesOrderID,
    csa.CustomerID,
    csa.AddressID,
    csa.AddressLine1,
    csa.AddressLine2,
    csa.City,
    csa.StateProvince,
    csa.CountryRegion,
    csa.PostalCode
FROM
    SalesLT.Product p
JOIN
    SalesLT.SalesOrderDetail od ON p.ProductID = od.ProductID
JOIN
    SalesLT.SalesOrderHeader oh ON od.SalesOrderID = oh.SalesOrderID
JOIN
    CustomerShippingAddresses csa ON oh.CustomerID = csa.CustomerID
WHERE
    oh.ShipToAddressID IN (
        SELECT
            ShipToAddressID
        FROM
            SalesLT.SalesOrderHeader
        GROUP BY
            ShipToAddressID
        HAVING
            COUNT(DISTINCT CustomerID) > 1
    );

```

49. Display orders with quantities higher than the average quantity for a specific product.

```
WITH AvgQuantityPerProduct AS (
    SELECT
        od.ProductID,
        AVG(od.OrderQty) AS AvgQuantity
    FROM
        SalesLT.SalesOrderDetail od
    GROUP BY
        od.ProductID
)

SELECT
    od.SalesOrderID,
    od.ProductID,
    p.Name AS ProductName,
    od.OrderQty
FROM
    SalesLT.SalesOrderDetail od
JOIN
    SalesLT.Product p ON od.ProductID = p.ProductID
JOIN
    AvgQuantityPerProduct avgQ ON od.ProductID = avgQ.ProductID
WHERE
    od.OrderQty > avgQ.AvgQuantity
ORDER BY
    od.SalesOrderID, od.ProductID;
```

50. Find customers who have placed orders for products that have not been ordered by any other customer

Not enough data available

```
WITH ProductsOrderedByCustomers AS (
    SELECT DISTINCT
        od.ProductID
    FROM
        SalesLT.SalesOrderDetail od
)

SELECT
```

```

c.CustomerID,
c.FirstName,
c.LastName,
oh.SalesOrderID,
p.ProductID,
p.Name AS ProductName
FROM
    SalesLT.Customer c
JOIN
    SalesLT.SalesOrderHeader oh ON c.CustomerID = oh.CustomerID
JOIN
    SalesLT.SalesOrderDetail od ON oh.SalesOrderID = od.SalesOrderID
JOIN
    SalesLT.Product p ON od.ProductID = p.ProductID
WHERE
    p.ProductID NOT IN (SELECT ProductID FROM ProductsOrderedByCustomers)
ORDER BY
    c.CustomerID, oh.SalesOrderID, p.ProductID;

```

4th FEB

Powershell Activity

```

Loading personal and system profiles took 1833ms.
PS C:\Users\jatin.saini3> Write-Host 'Hello, World!'
Hello, World!

```

```

Hello, World!
PS C:\Users\jatin.saini3> $a = 29
PS C:\Users\jatin.saini3> $b = "Kendrick"

```

```

PS C:\Users\jatin.saini3> New-Variable -Name myVar -Value 1337 -Option ReadOnly
PS C:\Users\jatin.saini3> $myVar
1337

```

```

PS C:\Users\jatin.saini3> New-Variable -Name myConst -Value "This CANNOT be changed" -Option Constant
PS C:\Users\jatin.saini3> $myConst
This CANNOT be changed

```

```
PS C:\Users\jatin.saini3> for ($i = 1; $i -le 5; $i++){
>>     Write-Host $i
>> }
1
2
3
4
5
```

```
PS C:\Users\jatin.saini3> $list = @('a', 'b', 'c', 'd');
PS C:\Users\jatin.saini3> foreach($item in $list){
>>     Write-Host $item
>> }
a
b
c
d
```

```
PS C:\Users\jatin.saini3> $value = 5
PS C:\Users\jatin.saini3> if ($value -gt 1) {
>>     Write-Host "value is greater than 1"
>> }
value is greater than 1
```

```
PS C:\Users\jatin.saini3> $month = 4
PS C:\Users\jatin.saini3> switch ($month) {
>>     1 { Write-Host "January" }
>>     2 { Write-Host "February" }
>>     3 { Write-Host "March" }
>>     4 { Write-Host "April" }
>>     5 { Write-Host "May" }
>>     6 { Write-Host "June" }
>>     7 { Write-Host "July" }
>>     8 { Write-Host "August" }
>>     9 { Write-Host "September" }
>>    10 { Write-Host "October" }
>>    11 { Write-Host "November" }
>>    12 { Write-Host "December" }
>>    default{ Write-Host "Invalid month" }
>> }
April
```

```

PS C:\Users\jatin.saini3> $values = @("One", "Two", "Three", "Four", "Five")
PS C:\Users\jatin.saini3> $values
One
Two
Three
Four
Five
PS C:\Users\jatin.saini3> $values.GetType()

IsPublic IsSerial Name                                     BaseType
-----  ----- 
True      True     Object[]                               System.Array

```

```

PS C:\Users\jatin.saini3> $array = New-Object 'object[,]' 5,8
PS C:\Users\jatin.saini3> $array[2,5] = 'Hello'
PS C:\Users\jatin.saini3> $array[3,7] = 'World!'
PS C:\Users\jatin.saini3> $array
Hello
World!

```

```

PS C:\Users\jatin.saini3> $employees = @{}
PS C:\Users\jatin.saini3> $employees.Add(1, "John")
>> $employees.Add(2, "Mary")
>> $employees.Add(3, "Bob")
>> $employees.Add(4, "Sam")
PS C:\Users\jatin.saini3> $employee[2]
Cannot index into a null array.
At line:1 char:1
+ $employee[2]
+ ~~~~~
+ CategoryInfo          : InvalidOperation: () [], RuntimeException
+ FullyQualifiedErrorId : NullArray

PS C:\Users\jatin.saini3> $employees[2]
Mary

```

```

PS C:\Users\jatin.saini3> function writeHelloWorld() {
>>     Write-Host "Hello World!"
>> }
PS C:\Users\jatin.saini3> writeHelloWorld
Hello World!

```

```
PS C:\Users\jatin.saini3> "Lorem ipsum dolor sit amet..."  
Lorem ipsum dolor sit amet...  
PS C:\Users\jatin.saini3> $value1 = "Ut enim ad minim veniam... $var"
```

```
PS C:\Users\jatin.saini3> try {  
>     # This will generate an error  
>     1/0  
>     Write-Host "This is executed after the error"  
> } catch {  
>     # Catch all errors  
>     Write-Host "Oh oh! Error occurred.`n$_"  
> }  
Oh oh! Error occurred.  
Attempted to divide by zero.
```

```
PS C:\Users\jatin.saini3> $object1 = New-Object PSObject  
PS C:\Users\jatin.saini3>  
>> Add-Member -InputObject $object1 -MemberType NoteProperty -Name prop1 -Value "value1"  
PS C:\Users\jatin.saini3> Add-Member -InputObject $object1 -MemberType NoteProperty -Name prop2 -Value "value2"  
PS C:\Users\jatin.saini3> $object1  
  
prop1  prop2  
-----  
value1 value2  
  
PS C:\Users\jatin.saini3> $object1.GetType()  
  
IsPublic IsSerial Name                                     BaseType  
-----  
True      False    PSCustomObject                      System.Object
```

```
PS C:\Users\jatin.saini3> Get-Date  
  
05 February 2024 11:29:38
```

```
PS C:\Users\jatin.saini3> $names = @("Muffin","Romeo","Noodle","Zoe","Jack","Luna","Gracie","mittens","Phoebe","Peanut","Harley","Jake")  
PS C:\Users\jatin.saini3> $names | Sort-Object  
Gracie  
Harley  
Jack  
Jake  
Luna  
mittens  
Muffin  
Noodle  
Peanut  
Phoebe  
Romeo  
Zoe
```

```
PS C:\Users\jatin.saini3> $object2 = [PSCustomObject]@{  
>>     prop1 = "value1"  
>>     prop2 = "value2"  
>> }  
PS C:\Users\jatin.saini3>  
>> $object2  
  
prop1  prop2  
-----  
value1 value2
```

```
PS C:\Users\jatin.saini3> class Tree {  
>>     [int]$Height  
>>     [int]$Age  
>>     [string]$Color  
>> }  
PS C:\Users\jatin.saini3> $tree1 = new-object Tree  
>> $tree2 = [Tree]::new()  
PS C:\Users\jatin.saini3> $tree1.Height = 10  
>> $tree1.Age = 5  
>> $tree1.Color = "Red"  
PS C:\Users\jatin.saini3> $tree2.Height = 20  
>> $tree2.Age = 10  
>> $tree2.Color = "Green"  
PS C:\Users\jatin.saini3> $tree1  
>> $tree2  
  
Height Age Color  
-----  
 10    5  Red  
 20   10 Green
```

```
PS C:\Users\jatin.saini3> $url = "https://gist.githubusercontent.com/sanders  
>> $json = (New-Object System.Net.WebClient).DownloadString($url)  
>>  
>> $data = $json | ConvertFrom-Json  
>>  
>> $data.colors  
  
color category type code  
---- - - - -  
black hue primary @{rgba=System.Object[]; hex=#000}  
white value primary @{rgba=System.Object[]; hex=#FFF}  
red hue primary @{rgba=System.Object[]; hex=#FF0}  
blue hue primary @{rgba=System.Object[]; hex=#00F}  
yellow hue primary @{rgba=System.Object[]; hex=#FF0}  
green hue secondary @{rgba=System.Object[]; hex=#0F0}
```

Project 2

Prerequisites

```
Watching for file changes with StatReloader
Performing system checks...

System check identified no issues (0 silenced).
February 04, 2024 - 19:25:19
Django version 3.2.13, using settings 'example.settings'
Starting development server at http://127.0.0.1:8000/
Quit the server with CTRL-BREAK.
[04/Feb/2024 19:25:21] "GET / HTTP/1.1" 200 10697
[04/Feb/2024 19:25:21] "GET /static/admin/css/fonts.css HTTP/1.1" 200 423
[04/Feb/2024 19:25:21] "GET /static/admin/fonts/Roboto-Bold-webfont.woff HTTP/1.1" 200 86184
[04/Feb/2024 19:25:21] "GET /static/admin/fonts/Roboto-Regular-webfont.woff HTTP/1.1" 200 85876
[04/Feb/2024 19:25:21] "GET /static/admin/fonts/Roboto-Light-webfont.woff HTTP/1.1" 200 85692
```

Order and connect VM

The screenshot shows the Azure portal interface for a virtual machine named 'vmJatin'. The left sidebar includes options like Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Settings, Networking, and Connect. The 'Connect' option is currently selected. The main pane displays a connection status: 'Connecting using Public IP address | 172.174.240.173'. It shows the Admin username is 'azureuser', Port is 22 (with a 'Check access' link), and the Just-in-time policy is 'Unsupported by plan'. Below this, there are tabs for Recommended and Most common, with 'Local machine' and 'Azure portal' options. A message at the top says 'Requesting a Cloud Shell. Succeeded.' followed by 'Connecting terminal...'. The terminal window displays the following text:

```
Requesting a Cloud Shell.Succeeded.
Connecting terminal...
Welcome to Azure Cloud Shell

Type "az" to use Azure CLI
Type "help" to learn about Cloud Shell

jatin [ ~ ]$ az ssh vm --resource-group rg1Jatin --vm-name vmJatin --subscription e7e878f1-a7f7-4ce2-8710-30d2fbcb17ef
OpenSSH 8.9p1, OpenSSL 1.1.1k FIPS 25 Mar 2021
The authenticity of host '172.174.240.173 (172.174.240.173)' can't be established.
ED25519 key fingerprint is SHA256:PoeTzD0/m1kaGyXALijZv61I02DsIQhyAA5bIr3EhFM.
```

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by applicable law.

To run a command as administrator (user "root"), use "sudo <command>". See "man sudo_root" for details.

jatin.saini3@incedoinc.com@vmJatin:~\$

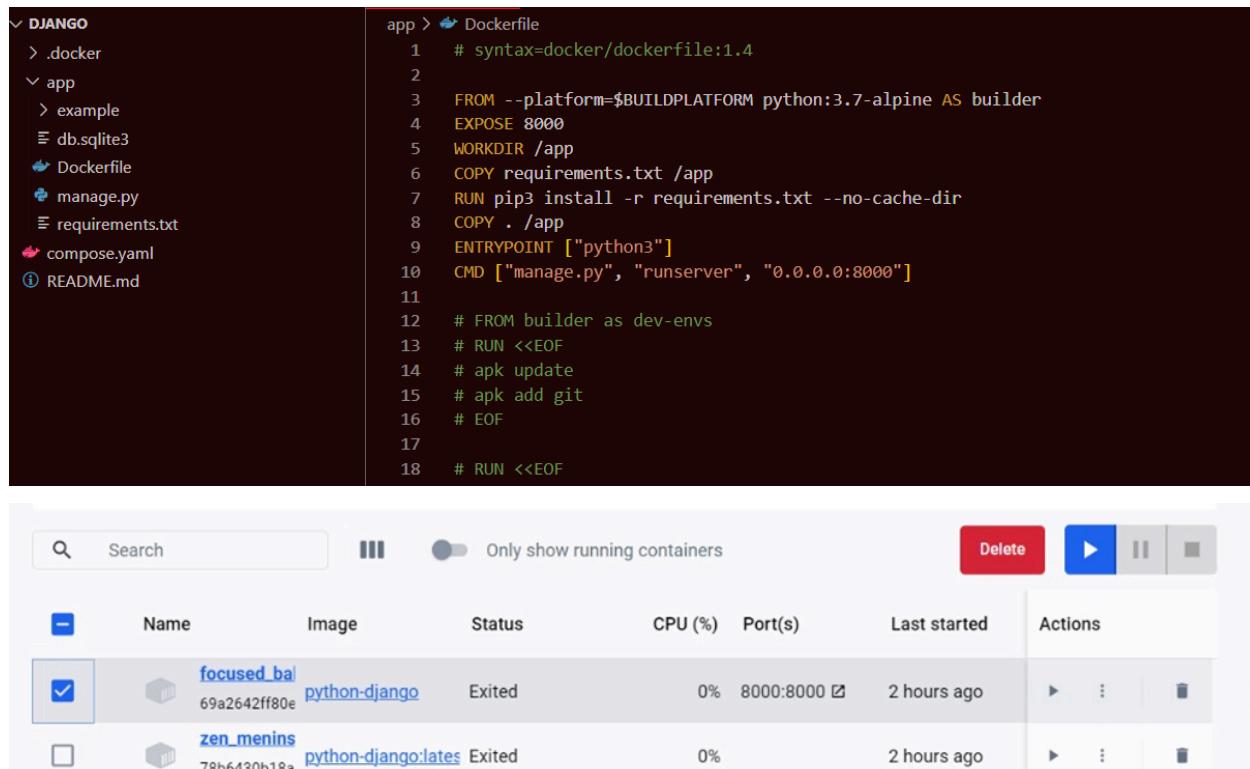
Installing Docker on Azure VM

```
Processing triggers for systemd (245.4-4ubuntu3.23) ...
root@vmJatin:/home/jatin.saini3# docker version
Client: Docker Engine - Community
  Version:           25.0.2
  API version:      1.44
  Go version:       go1.21.6
  Git commit:       29cf629
  Built:            Thu Feb  1 00:23:19 2024
  OS/Arch:          linux/amd64
  Context:          default

Server: Docker Engine - Community
```

```
jatin.saini3@incedoinc.com@vmJatin:~$ sudo apt install azure-cli
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
javascript-common libjs-jquery libjs-sphinxdoc libjs-underscore python-pkginfo-doc python3-adal python3-aiohttp python
python3-azext-devops python3-azure python3-azure-cli python3-azure-cli-core python3-azure-telemetry python3-azure-
python3-azure-functions-devops-build python3-azure-multiapi-storage python3-azure-storage python3-bcrypt python3-cffi
python3-invoke python3-isodate python3-javaproPERTIES python3-jmespath python3-jsmn python3-jsondiff python3-knack py
python3-msrestazure python3-multidict python3-paramiko python3-pbr python3-pkginfo python3-ply python3-portalocker py
```

Dockerization and Deployment of Django Project



The screenshot shows a terminal window with two parts. On the left, the project structure is displayed:

```
└─ DJANGO
    ├ .docker
    └─ app
        ├ example
        ├ db.sqlite3
        ├ Dockerfile
        ├ manage.py
        └ requirements.txt
    └ compose.yaml
    └ README.md
```

On the right, the Dockerfile content is shown:

```
app > 🐫 Dockerfile
1  # syntax=docker/dockerfile:1.4
2
3  FROM --platform=$BUILDPLATFORM python:3.7-alpine AS builder
4  EXPOSE 8000
5  WORKDIR /app
6  COPY requirements.txt /app
7  RUN pip3 install -r requirements.txt --no-cache-dir
8  COPY . /app
9  ENTRYPOINT ["python3"]
10 CMD ["manage.py", "runserver", "0.0.0.0:8000"]
11
12 # FROM builder as dev-envs
13 # RUN <<EOF
14 # apk update
15 # apk add git
16 # EOF
17
18 # RUN <<EOF
```

Below the terminal is a Docker container list interface. It shows two containers:

	Name	Image	Status	CPU (%)	Port(s)	Last started	Actions
<input checked="" type="checkbox"/>	focused_ba	69a2642ff80e python-django	Exited	0%	8000:8000	2 hours ago	▶ ⋮ ✖
<input type="checkbox"/>	zen_menins	78b6430b18a python-django:lates	Exited	0%		2 hours ago	▶ ⋮ ✖

Hello, Jatin!

Welcome to your Task List:

Additional Checkboxes:

- task 1
- task 2
- task 2

Update Tasks