



**IT4090**  
**Cloud Computing**  
**4<sup>th</sup> Year, 1<sup>st</sup> Semester**

**<Azure Lab 05>**

**Create a single database - Azure SQL**  
**Database**

**Gunasekara W.M.W.A.G.T.N.A.**

**IT21303548**

Submitted to

Sri Lanka Institute of Information Technology

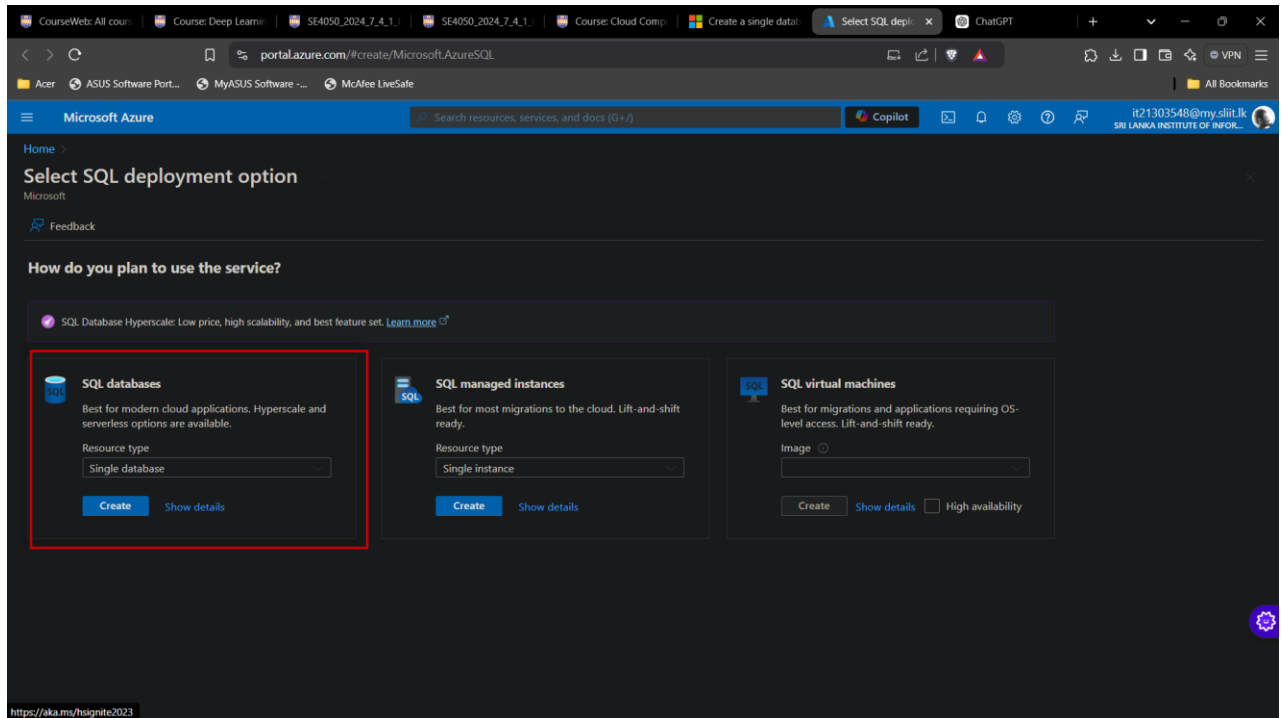
In partial fulfillment of the requirements for the

Bachelor of Science Special Honors Degree in Information Technology

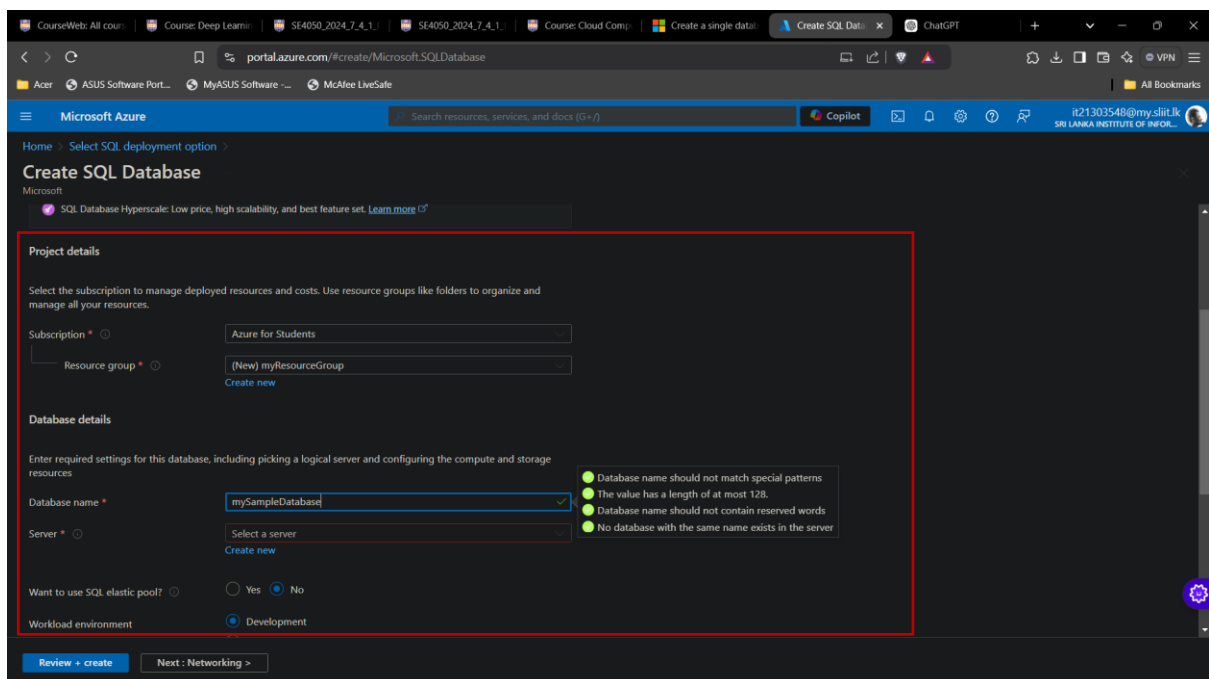
<09.30.2024>

# 1. Create a single Database

- Select the SQL database with single database option



- Fill the fields in Basics 001



- Create SQL Database Server 001

CourseWeb: All cour... Course: Deep Learn... SE4050\_2024\_7\_4\_1... SE4050\_2024\_7\_4\_1... Course: Cloud Comp... Create a single data... Create SQL Dat... ChatGPT

portal.azure.com/#view/SqlAzureExtension/SharedCreateServer/isNewServer~/true/subscriptionId/c1aefa10-c4d5-463...

Acer ASUS Software Port... MyASUS Software ... McAfee LiveSafe

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

Home > Select SQL deployment option > Create SQL Database >

### Create SQL Database Server

Microsoft

**Server details**

Enter required settings for this server, including providing a name and location. This server will be created in the same subscription and resource group as your database.

Server name \* mysqlserver19990506 .database.windows.net

Location \* (Asia Pacific) Australia East

**Authentication**

Azure Active Directory (Azure AD) is now Microsoft Entra ID. [Learn more](#)

Select your preferred authentication methods for accessing this server. Create a server admin login and password to access your server with SQL authentication, select only Microsoft Entra authentication [Learn more](#) or using an existing Microsoft Entra user, group, or application as Microsoft Entra admin [Learn more](#) or, or select both SQL and Microsoft Entra authentication.

Authentication method

☐ Use Microsoft Entra-only authentication

☐ Use both SQL and Microsoft Entra authentication

OK

- Create SQL Database Server 002

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portal.azure.com/#view/SqlAzureExtension/SharedCreateServer/isNewServer~/true/subscriptionId/c1aefa10-c4d...

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

Home > Select SQL deployment option > Create SQL Database >

### Create SQL Database Server

Microsoft

Location \* (Asia Pacific) Australia East

**Authentication**

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Select your preferred authentication methods for accessing this server. Create a server admin login and password to access your server with SQL authentication, select only Microsoft Entra authentication [Learn more](#) or using an existing Microsoft Entra user, group, or application as Microsoft Entra admin [Learn more](#) or, or select both SQL and Microsoft Entra authentication.

Authentication method

☐ Use Microsoft Entra-only authentication

☐ Use both SQL and Microsoft Entra authentication

☒ Use SQL authentication

Server admin login \* azureuser

Password \* \*\*\*\*\*

Confirm password \* \*\*\*\*\*

OK

- Fill the fields in Basics 002

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

Microsoft Azure

Home > Select SQL deployment option >

## Create SQL Database

Microsoft

**Database details**

Enter required settings for this database, including picking a logical server and configuring the compute and storage resources

Database name \*

Server \*  [Create new](#)

Want to use SQL elastic pool? ☐ Yes ☒ No

Workload environment ☒ Development ☐ Production

**Compute + storage \*** ☐ **General Purpose - Serverless**  
Standard-series (Gen5), 1 vCore, 32 GB storage, zone redundant disabled  
[Configure database](#)

Backup storage redundancy

[Review + create](#) [Next: Networking >](#)

- Fill the fields in Basics 003

CourseWeb: All cour... Course: Deep Learn... SE4050\_2024\_7\_4\_1... SE4050\_2024\_7\_4\_1... Course: Cloud Comp... Create a single data... Create SQL Dat... ChatGPT

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

Microsoft Azure

Home > Select SQL deployment option >

## Create SQL Database

Microsoft

Want to use SQL elastic pool? ☐ Yes ☒ No

Workload environment ☒ Development ☐ Production

**Compute + storage \*** ☐ **General Purpose - Serverless**  
Standard-series (Gen5), 1 vCore, 32 GB storage, zone redundant disabled  
[Configure database](#)

**Backup storage redundancy**

Choose how your PITR and LTR backups are replicated. Geo restore or ability to recover from regional outage is only available when geo-redundant storage is selected.

Backup storage redundancy ☒ Locally-redundant backup storage ☐ Zone-redundant backup storage ☐ Geo-redundant backup storage

[Review + create](#) [Next: Networking >](#)

- Fill the fields in Networking 001

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

Microsoft Azure

Home > Select SQL deployment option >

## Create SQL Database

Microsoft

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

Configure network access and connectivity for your server. The configuration selected below will apply to the selected server 'mysqlserver19990506' and all databases it manages. [Learn more](#)

### Network connectivity

Choose an option for configuring connectivity to your server via public endpoint or private endpoint. Choosing no access creates with defaults and you can configure connection method after server creation. [Learn more](#)

Connectivity method \*

- ☒ No access
- ☐ Public endpoint
- ☐ Private endpoint

### Connection policy

Configure how clients communicate with your SQL database server. [Learn more](#)

Connection policy

- ☒ Default - Uses Redirect policy for all client connections originating inside of Azure (except Private Endpoint connections) and Proxy for all client connections originating outside Azure
- ☐ Proxy - All connections are proxied via the Azure SQL Database gateways
- ☐ Redirect - Clients establish connections directly to the node hosting the database

### Cost summary

**General Purpose (GP\_S\_Gen5\_1)**  
Cost per GB (in USD) 0.14  
Max storage selected (in GB) x 41.6

ESTIMATED STORAGE COST / MONTH 5.74 USD  
COMPUTE COST / VCORE SECOND<sup>1</sup> 0.000172 USD

**NOTES**  
<sup>1</sup> Serverless databases are billed in vCore seconds based on a combination of CPU and memory utilization. [Learn more about serverless billing](#)

[Review + create](#) < Previous Next: Security >

- Fill the fields in Networking 002

CourseWeb: All cour... Course: Deep Learn... SE4050\_2024\_T\_4\_1... SE4050\_2024\_T\_4\_1... Course: Cloud Comp... Create a single data... Create SQL Dat... ChatGPT

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

Microsoft Azure

Home > Select SQL deployment option >

## Create SQL Database

Microsoft

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

Configure network access and connectivity for your server. The configuration selected below will apply to the selected server 'mysqlserver19990506' and all databases it manages. [Learn more](#)

### Network connectivity

Choose an option for configuring connectivity to your server via public endpoint or private endpoint. Choosing no access creates with defaults and you can configure connection method after server creation. [Learn more](#)

Connectivity method \*

- ☐ No access
- ☒ Public endpoint
- ☐ Private endpoint

### Firewall rules

Setting 'Allow Azure services and resources to access this server' to Yes allows communications from all resources inside the Azure boundary, that may or may not be part of your subscription. [Learn more](#)

Setting 'Add current client IP address' to Yes will add an entry for your client IP address to the server firewall.

Allow Azure services and resources to access this server \* ☒ No ☒ Yes

Add current client IP address \* ☐ No ☒ Yes

### Cost summary

**General Purpose (GP\_S\_Gen5\_1)**  
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[Review + create](#) < Previous Next: Security >

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

Microsoft Azure

Home > Select SQL deployment option >

## Create SQL Database

Microsoft

Setting 'Add current client IP address' to Yes will add an entry for your client IP address to the server firewall.

Allow Azure services and resources to access this server \*

☐ No ☒ Yes

Add current client IP address \*

☐ No ☒ Yes

**Connection policy**

Configure how clients communicate with your SQL database server. [Learn more](#)

Connection policy

- ☒ Default - Uses Redirect policy for all client connections originating inside of Azure (except Private Endpoint connections) and Proxy for all client connections originating outside Azure
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- ☐ Redirect - Clients establish connections directly to the node hosting the database

**Encrypted connections**

This server supports encrypted connections using Transport Layer Security (TLS). For information on TLS version and certificates, refer to connecting with TLS/SSL. [Learn more](#)

Minimum TLS version

[Review + create](#) [< Previous](#) [Next: Security >](#)

- Fill the fields in Security

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

Microsoft Azure

Home > Select SQL deployment option >

## Create SQL Database

Microsoft

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

**Microsoft Defender for SQL**

Protect your data using Microsoft Defender for SQL, a unified security package including vulnerability assessment and advanced threat protection for your server. [Learn more](#)

Get started with a 30 day free trial period, and then 15 USD/servers/month.

Enable Microsoft Defender for SQL \*

☐ Start free trial ☒ Not now

**Ledger**

Ledger cryptographically verifies the integrity of your data and detects any tampering that might have occurred. [Learn more](#)

Ledger

Not configured

[Configure ledger](#)

**Server identity**

Use system assigned and user assigned managed identities to enable central access management between this database and other Azure resources. [Learn more](#)

**Cost summary**

General Purpose (GP\_S\_Gen5\_1)

Cost per GB (in USD) 0.14

Max storage selected (in GB) x 41.6

ESTIMATED STORAGE COST / MONTH 5.74 USD

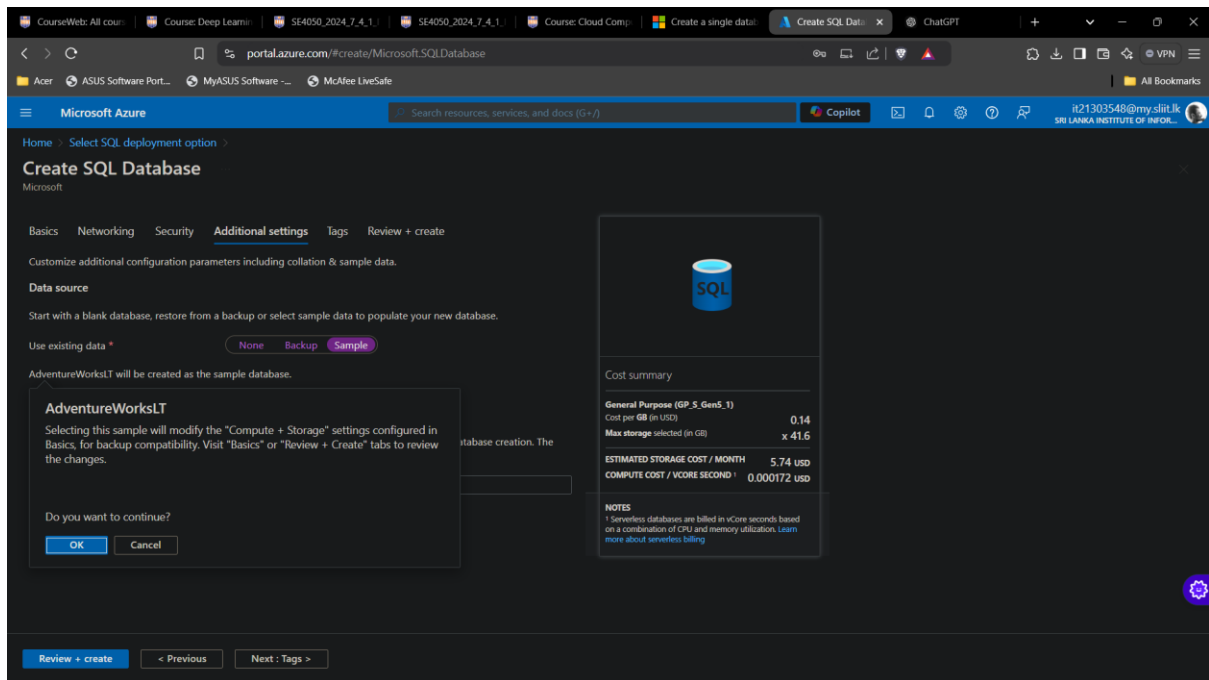
COMPUTE COST / VCORE SECOND 0.000172 USD

**NOTES**

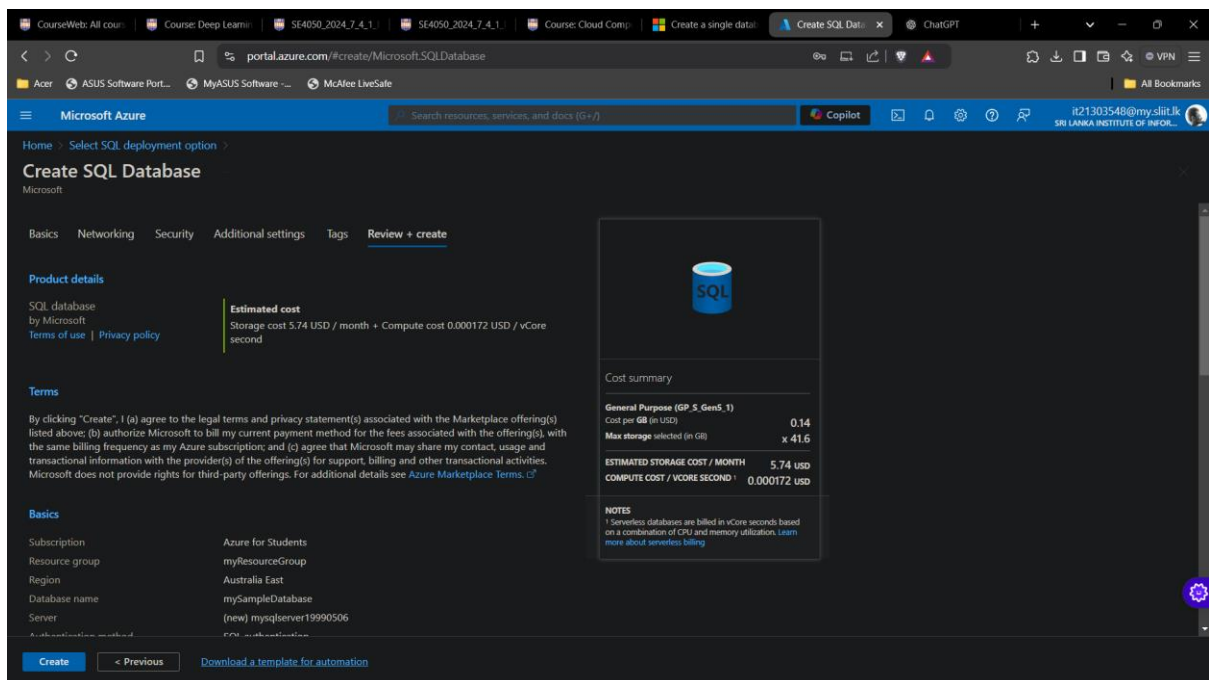
1 Serverless databases are billed in vCore seconds based on a combination of CPU and memory utilization. [Learn more about serverless billing](#)

[Review + create](#) [< Previous](#) [Next: Additional settings >](#)

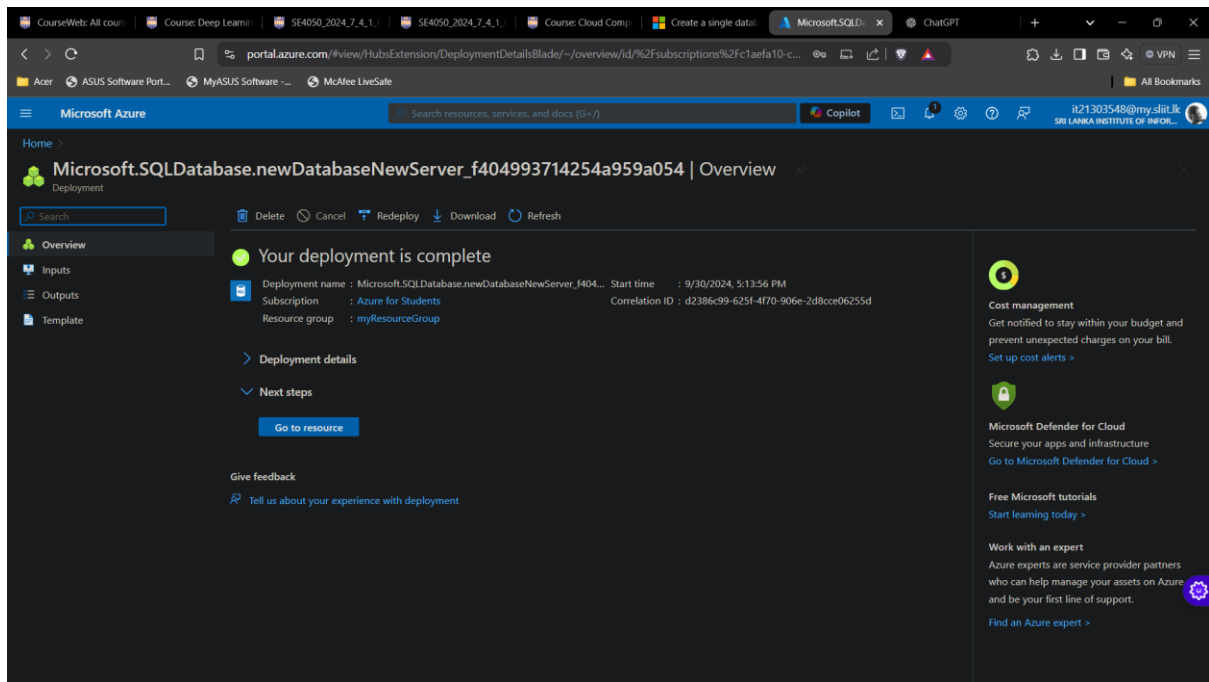
- Fill the fields in Additional Setting



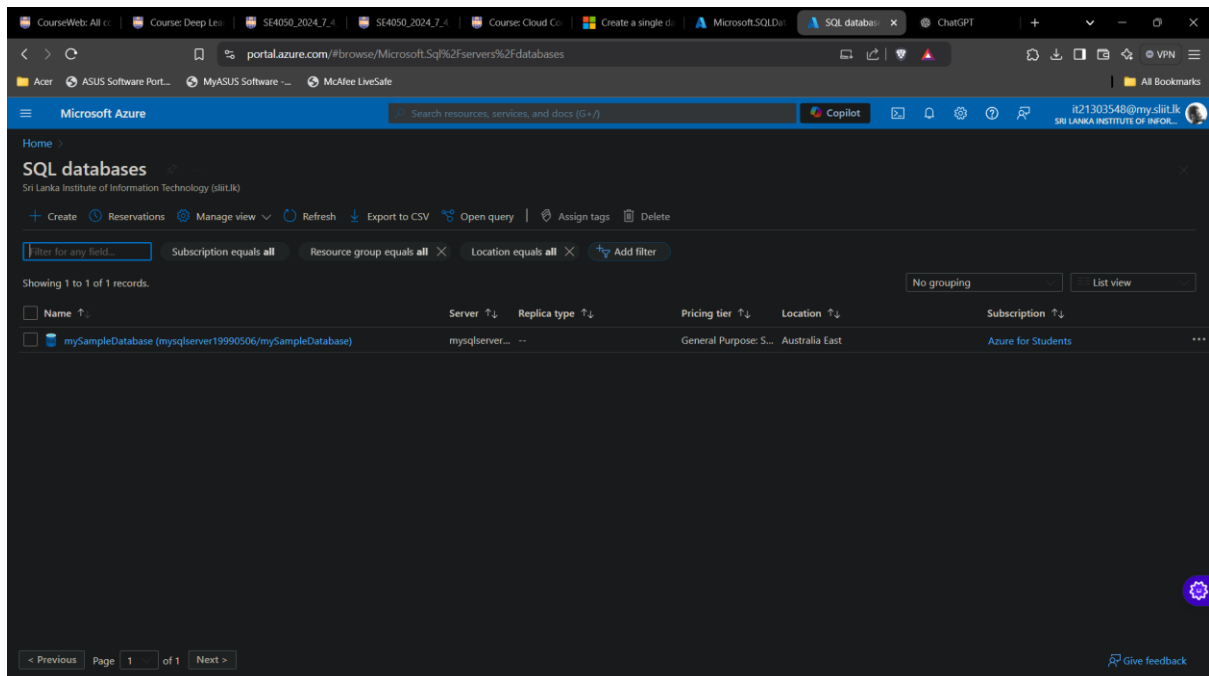
- Fill the fields in Additional Review + Create



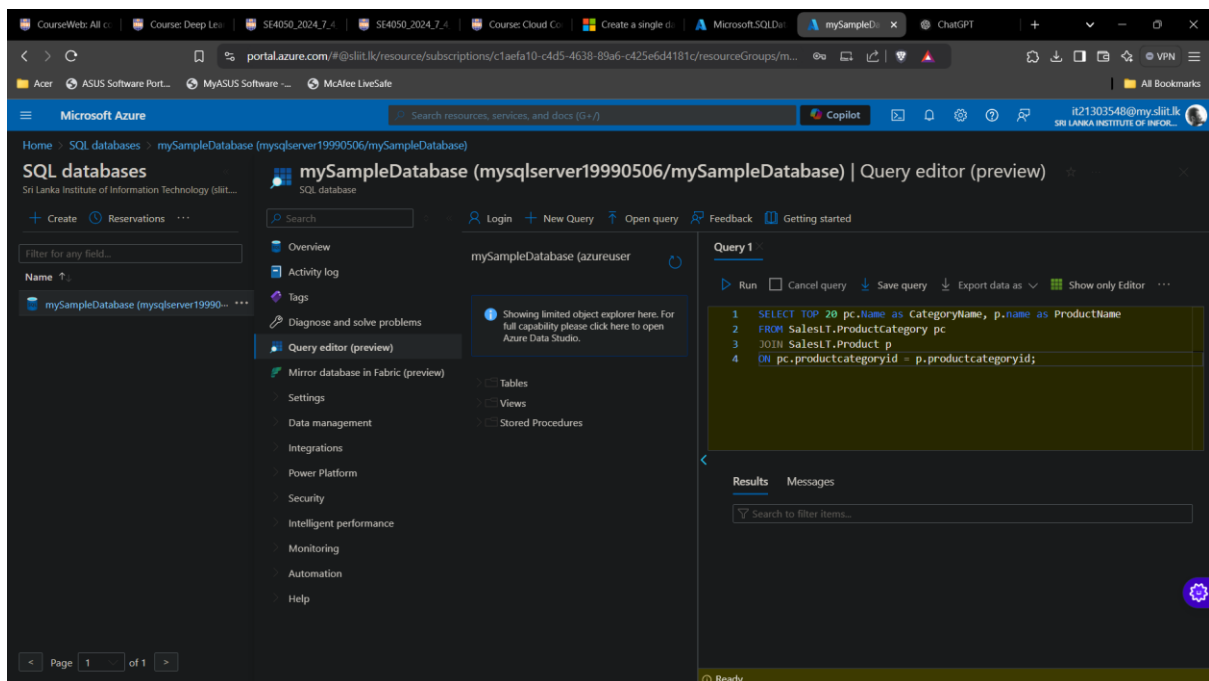
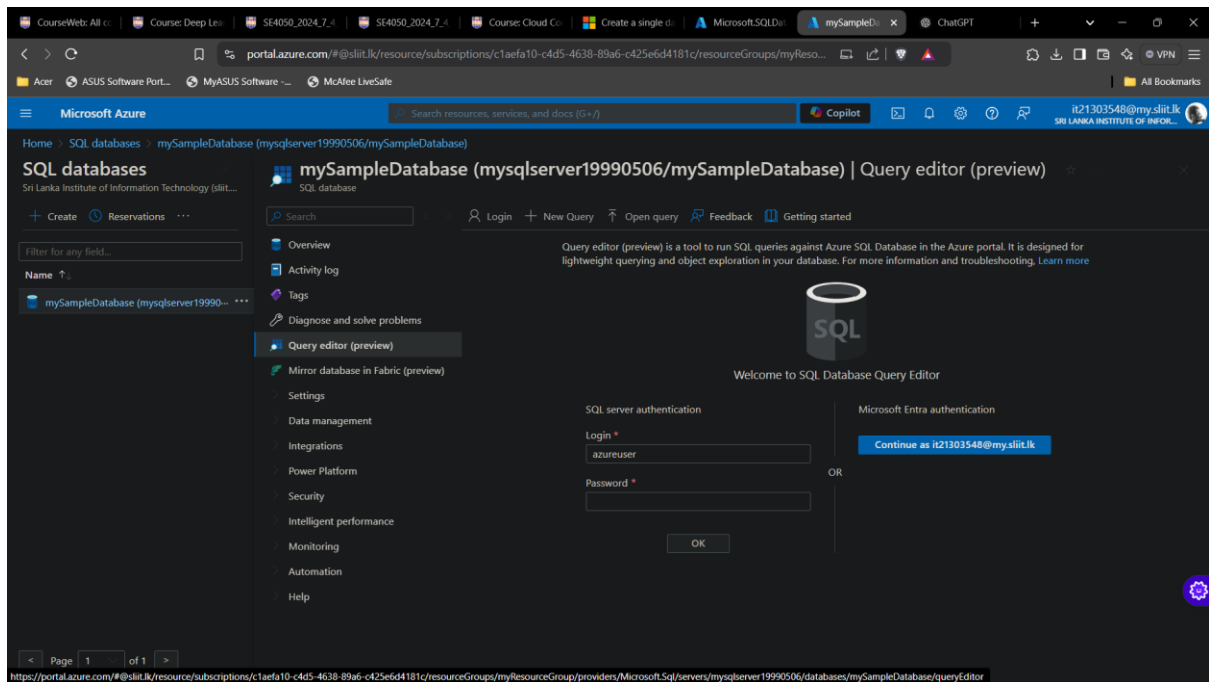
- Deployment is completed



## 2. Query the Database







CourseWeb: All c... Course: Deep Le... SE4050\_2024\_7\_4 SE4050\_2024\_7\_4 Course: Cloud Co... Create a single d... Microsoft SQLD... mySampleD... ChatGPT

portal.azure.com/#@slit.lk/resource/subscriptions/c1aefa10-c4d5-4638-89a6-c425e6d4181c/resourceGroups/m... VPN

Acer ASUS Software Port... MyASUS Software ... McAfee LiveSafe

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

Home > SQL databases > mySampleDatabase (mysqlserver19990506/mySampleDatabase)

### SQL databases

Sri Lanka Institute of Information Technology (slit...)

+ Create Reservations ...

Filter for any field...

Name ↑

mySampleDatabase (mysqlserver19990...)

Overview

Activity log

Tags

Diagnose and solve problems

Query editor (preview)

Mirror database in Fabric (preview)

Settings

Data management

Integrations

Power Platform

Security

Intelligent performance

Monitoring

Automation

Help

Showing limited object explorer here. For full capability please click here to open Azure Data Studio.

mySampleDatabase (azureuser)

Tables

Views

Stored Procedures

### Query editor (preview)

Run Cancel query Save query Export data as Show only Editor

```
1 SELECT TOP 20 pc.Name CategoryName, p.Name as ProductName
2 FROM SalesLT.ProductCategory pc
3 JOIN SalesLT.Product p
4 ON pc.productcategoryid = p.productcategoryid;
```

Results Messages

Failed to execute query. Error: Invalid object name 'SalesLT.ProductCategory'.

Query failed