Connecting our Application to the Cloud

In the previous lab we build a web application previously displayed a list of courses using data stored in a CSV file and images in a local folder within the project.
Now in this lab we are going to separate the data layer from the application by using Azure services (Azure SQL Database for data ,Azure Storage for images and Azure Storage Account).

An **Azure Storage Account** is a resource in Microsoft Azure that provides cloud storage for various types of data, such as files, blobs, queues, and tables. It acts as a container for different storage services and is the foundational element for storing data in Azure.

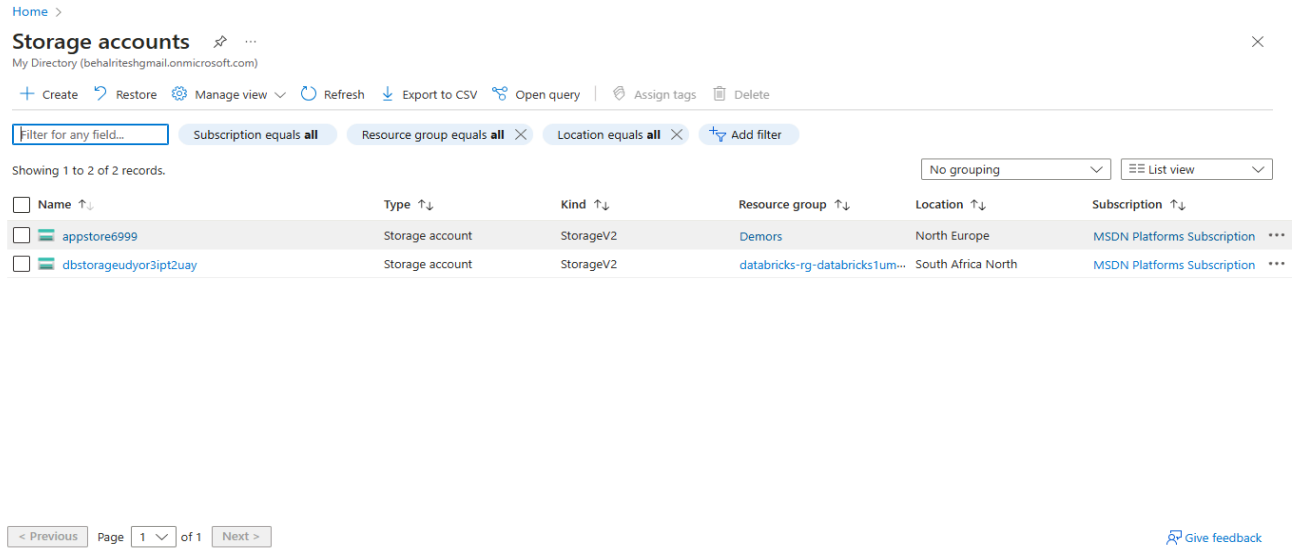
Key features of an Azure Storage Account:

1. **Blob Storage**: Stores unstructured data such as text, images, videos, and backups. It is widely used for applications like websites and media services.
2. **File Storage**: Offers shared access to files in the cloud, suitable for applications that require file sharing (like a network file share).
3. **Queue Storage**: Enables message storage for communication between components of a cloud-based application.
4. **Table Storage**: Stores structured NoSQL data, ideal for large-scale data sets that don't require complex querying or relational structures.
5. **Disk Storage**: Provides virtual hard disk (VHD) storage for virtual machines.

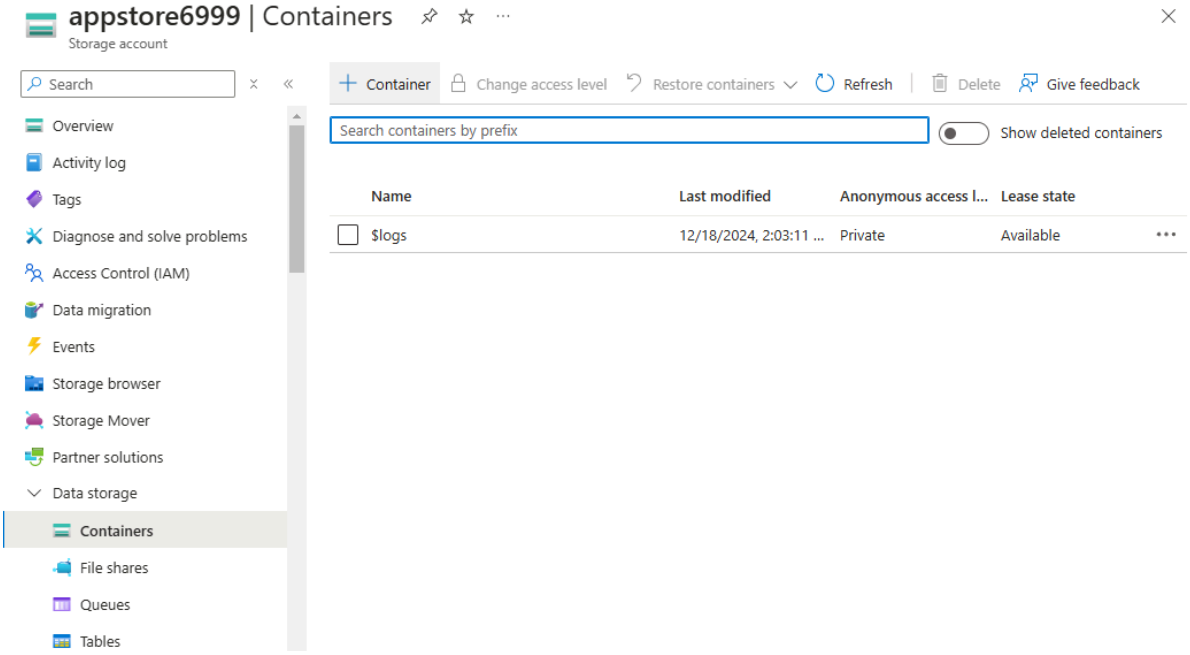
The end goal of this lab is to connect a .NET web application to Azure cloud services by separating the data and image storage from the application. The application, initially using local CSV and image files, is now modified to fetch data from an Azure SQL Database and images from an Azure Storage account. The SQL database stores course details, including image URLs, while the storage account holds the images. After modifying the connection settings in the .NET application, the app dynamically retrieves course data and images from the cloud, enhancing scalability and flexibility.

To begin with the lab

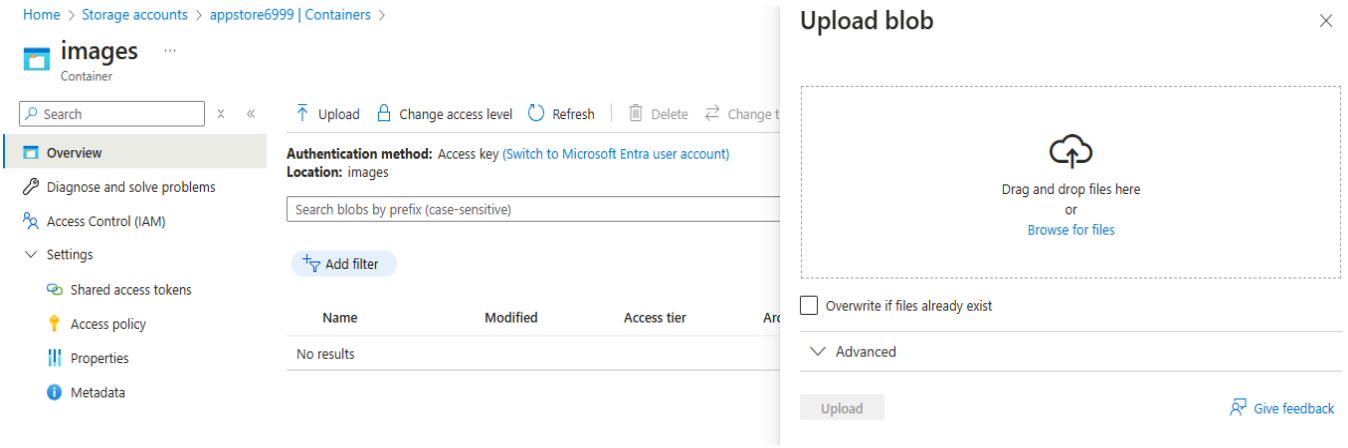
1. Go to Azure Portal and then navigate to your storage account.

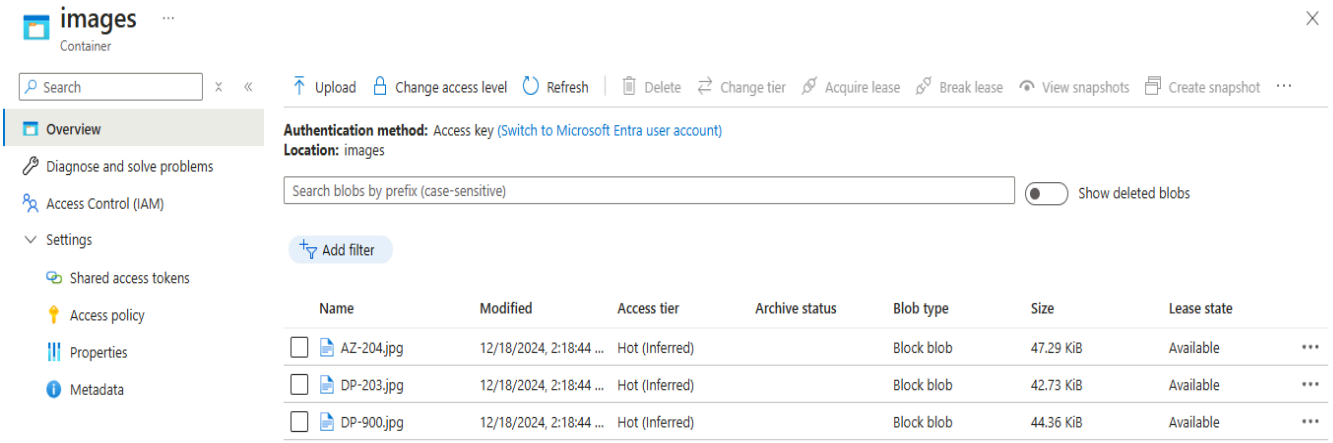


2. Create a container named "images" in the Azure Storage Account.

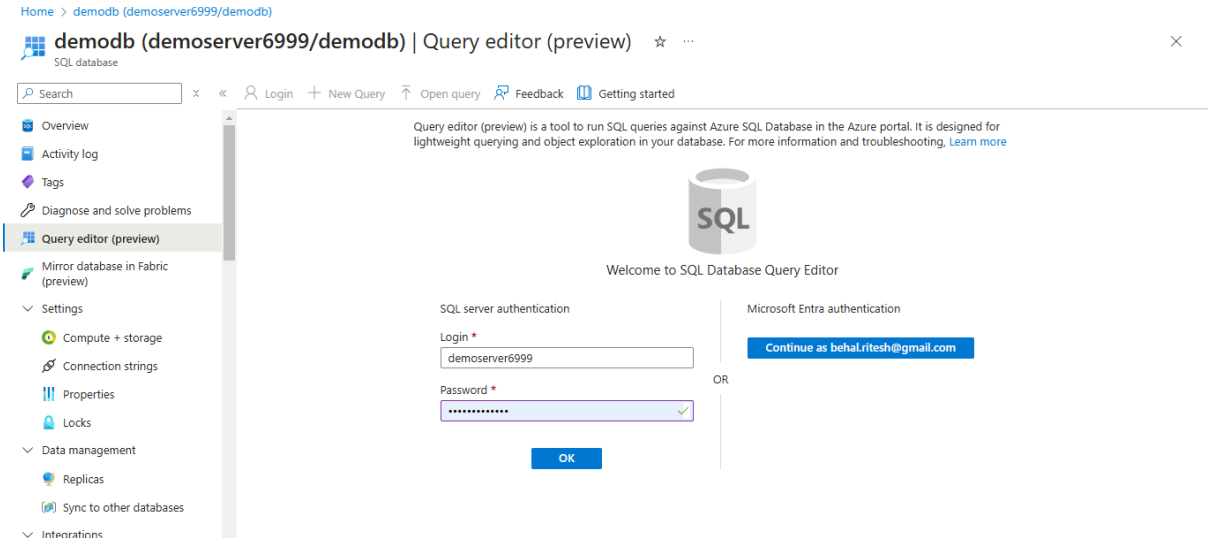


3. Upload images to this container.
4. Set public access for the container to "Blob anonymous read access" for ease of access by the application.





5. Now you need to navigate to SQL Database and open the query editor and enter the password for your SQL Server.



6. Use SQL commands to insert data into the table, including the image links from Azure Storage (using the .blob.core.windows.net URL format).

CREATE TABLE Course

(

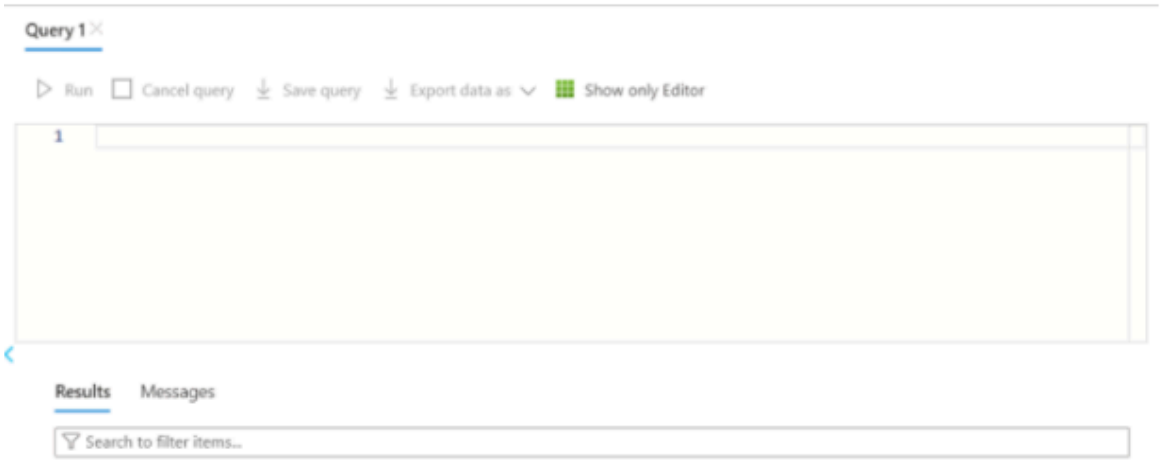
CourseID int,

ExamImage varchar(1000),

CourseName varchar(1000),

Rating numeric(2,1)

)



7. The Azure SQL Database is accessed and modified using following SQL queries in Visual Studio Code or a similar tool to execute the statements:

INSERT INTO Course(CourseID,ExamImage,CourseName,Rating)

VALUES(1,'https://appstore6999.blob.core.windows.net/images/AZ-204.jpg','AZ-204 Developing Azure solutions',4.5)

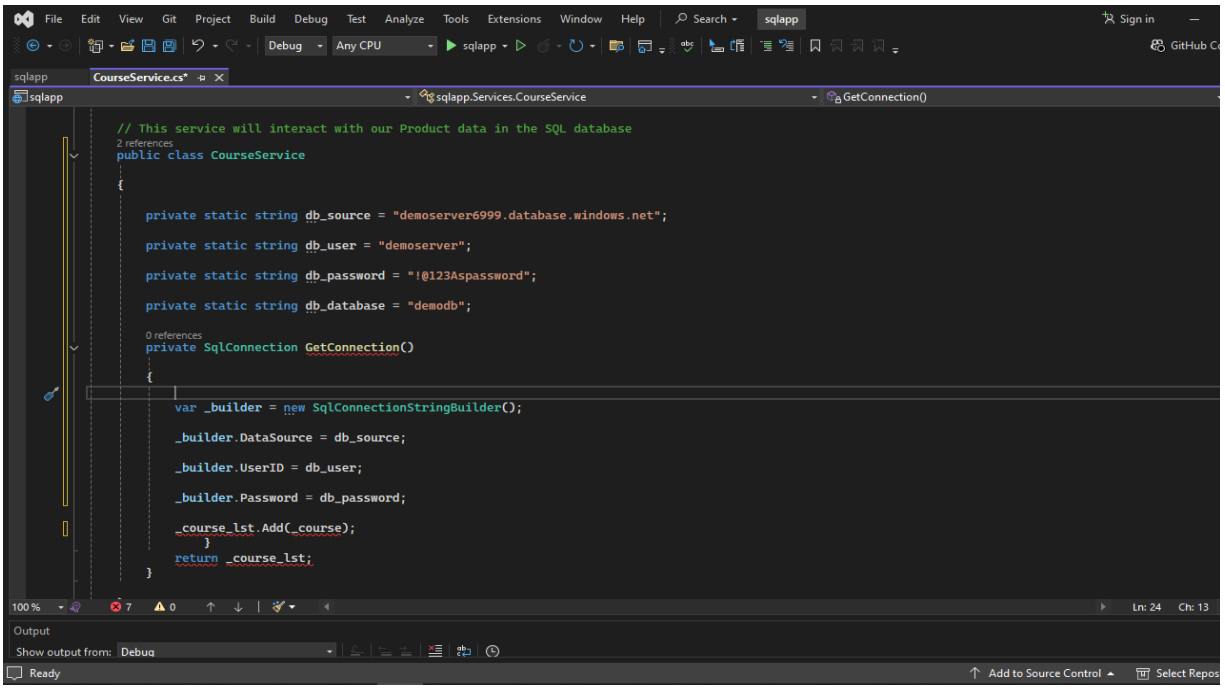
INSERT INTO Course(CourseID,ExamImage,CourseName,Rating)

VALUES(2,'https://appstore6999.blob.core.windows.net/images/DP-900.jpg','DP-900 Azure Data Fundamentals',4.6)

INSERT INTO Course(CourseID,ExamImage,CourseName,Rating)

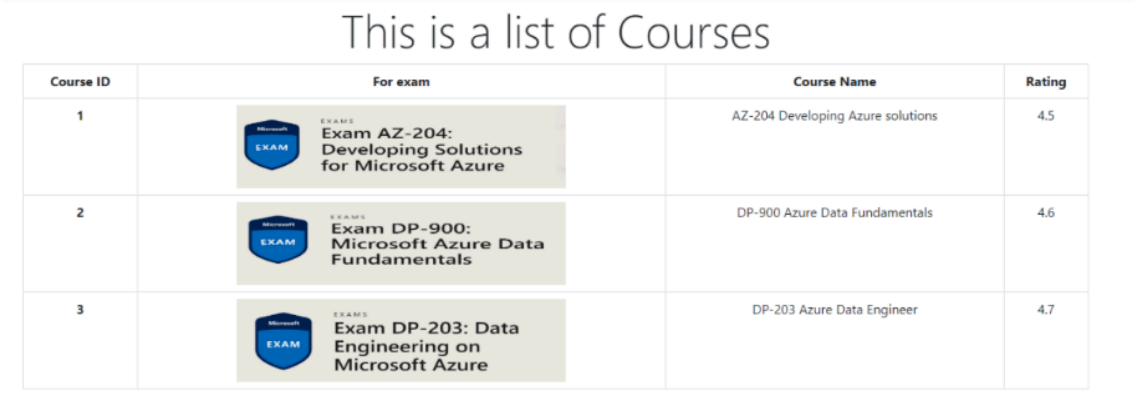
VALUES(3,'https://appstore6999.blob.core.windows.net/images/DP-203.jpg','DP-203 Azure Data Engineer',4.7)

8. You are required to download the sqlapp zip file from GitHub once more. This application is somewhat akin to the one we reviewed previously; however, it will now retrieve data from our SQL Database and storage account..
9. In Visual Studio, open the modified .NET project that now fetches course data from the Azure SQL Database and retrieves images from Azure Storage.
10. The code no longer includes local images or the CSV file but fetches data dynamically from the cloud.



11. Modify the connection settings in the .NET application to connect to the Azure SQL Database (with server name, username, password, and database name).

12. When the application is run, it retrieves and displays course data (ID, name, rating, image) from the Azure SQL Database and Azure Storage.



In next lab,we will learn how to publish our application to Azure Virtual Machine.