## Lab 5-01: Create Cosmos DB and SQL Database

### Service Introduction

The Social Scoop, a rapidly growing social media platform, faced a data dilemma. Their existing relational database struggled to handle the explosive growth of user data, leading to sluggish performance and hindering user engagement. At the same time, their desire for real-time analytics and flexible data structures required a more agile solution.

### Problem

Their relational database could not keep up with the high volume of user activity, resulting in slow loading times, lagging updates, and frustrated users. The rigid schema of their relational database limited their ability to store and analyze new data types, like user sentiment and network connections.

### Solution

The Social Scoop partnered with a cloud solutions provider to implement a hybrid data solution leveraging both Azure Cosmos DB and Azure SQL Database. The Social Scoop's success demonstrates the power of a hybrid approach using Azure Cosmos DB and SQL Database. By leveraging the strengths of each service, they achieved a balance between speed, scalability, flexibility, and security, paving the way for continued growth and innovation in the competitive social media landscape.

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| 1. Login to **Portal** and go to the “**Azure Cosmos DB**” service.     2. Click on “**Create**” and select “Azure Cosmos DB for NoSQL.    3. Enter the name of the resource group and name of account.    4. Now enter the name of the account and leave everything as default. Click on “**Review + create.”**    5. Click “Create.”    6. Once the deployment is complete, click on “**Go to resource.”** You can see the URL here, which you can use to access the data in Cosmos DB if accessing outside Azure.    7. Now, click on “Replicate Data Globally.”    8. Here, you can enable more data centers. The blue ticks on the map indicate where your actual data center is.    9. Now, click on the region where you want to replicate the data, then click **“Save.”**    **Create an SQL Database**  10. Go to the main menu and click on Create a resource.     1. From the Categories, select Databases and click on SQL Database.      1. First, select your Azure subscription and resource group to configure the SQL server.        1. After that, scroll down and enter the Database details. Write a unique name for your database.      1. Click on Create new to create a new SQL server.      1. To configure the SQL server, write a unique server name. Select Location.      1. Scroll down, and select the Use SQL Authentication method. Create unique SQL Server login credentials.      1. Click on OK.      1. Select No option for SQL elastic pool.      1. Select the Geo-redundant backup storage option to backup storage redundancy.      1. Click on Next: Networking >.      1. In the Networking section, select Public endpoint for Network connectivity.      1. Select the Minimum TSL version.      1. Click on Next: Security >.      1. In the Security section, select the Start free trial option to Enable Azure Defender for SQL.      1. Click on Next: Additional Settings >.      1. In the Additional Settings section, use the Sample option for Use exiting data.      1. Click on Review + create.      1. Once the validation is passed, click on Create.      1. Verify the configuration details from the Overview page. Now, click on Set server firewall present on the top given options.      1. Select the Yes option to Allow Azure services and resources to access this server.      1. Click on Save to save the settings.      1. From the overview page, click on Query editor (preview) from the left side given menu.      1. Use the same SQL server login credential that you created in the previous steps. Click on OK.      1. The following error will appear if your server is not allowed to access from a client IP address.      1. To allow access to your server, go back to the overview page of the SQL server. Click on Set server firewall option from the top given options.      1. Click on + Add client IP.      1. Add ClientIPAddress with the same IP address as defined in error.      1. Click on Save to save the settings.      1. Now, go to the Query editor (preview) option again and log in with the same SQL service credential.      1. The query editor will successfully open now.      1. Inside the Query 1 section, enter the following code and click on Run.      1. Explore the results with Query succeeded statement.     The database will be created, and you can successfully query the data. |