

# DP-900

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### Question 121

CertyIQ

You have an Azure Database for MySQL that is used to store employee salaries. The table structure is shown in below the exhibit.

The screenshot displays the SQL Server Enterprise Manager interface. At the top, a query window titled 'salaries' shows the following SQL query:

```
SELECT * FROM employees.salaries;
```

Below the query window, the 'Result Grid' tab is active, showing the results of the query. The results are displayed in a table with the following columns: emp\_no, salary, from\_date, and to\_date. The table contains 14 rows of data, all with emp\_no = 10001.

| emp_no | salary | from_date  | to_date    |
|--------|--------|------------|------------|
| 10001  | 60117  | 1986-06-26 | 1987-06-26 |
| 10001  | 62102  | 1987-06-26 | 1988-06-25 |
| 10001  | 66074  | 1988-06-25 | 1989-06-25 |
| 10001  | 66596  | 1989-06-25 | 1990-06-25 |
| 10001  | 66961  | 1990-06-25 | 1991-06-25 |
| 10001  | 71046  | 1991-06-25 | 1992-06-24 |
| 10001  | 74333  | 1992-06-24 | 1993-06-24 |
| 10001  | 75286  | 1993-06-24 | 1994-06-24 |
| 10001  | 75994  | 1994-06-24 | 1995-06-24 |
| 10001  | 76884  | 1995-06-24 | 1996-06-23 |
| 10001  | 80013  | 1996-06-23 | 1997-06-23 |
| 10001  | 81025  | 1997-06-23 | 1998-06-23 |

At the bottom of the screenshot, the 'Output' window shows the 'Action Output' for the query. It indicates that 2844047 row(s) were returned, and the duration of the query was 0.000 sec / 2.047 sec.

You need to query the top 10 salaries.

How should you complete the SQL query? To answer, select the appropriate options from the drop-down menus.

Choose the correct options

|                    |
|--------------------|
| Select your answer |
| SELECT *           |
| SELECT MAX(salary) |
| SELECT TOP(10) *   |

FROM employees.salaries

|                     |
|---------------------|
| Select your answer  |
| ORDER BY salary     |
| ORDER BY salary ASC |
| ORDER BY salary DSC |

|                    |
|--------------------|
| Select your answer |
| DESC;              |
| LIMIT 10;          |
| LIMIT 1, 10;       |

**Correct answer: -**

|                    |
|--------------------|
| Select your answer |
| SELECT *           |
| SELECT MAX(salary) |
| SELECT TOP(10) *   |

FROM employees.salaries

|                     |
|---------------------|
| Select your answer  |
| ORDER BY salary     |
| ORDER BY salary ASC |
| ORDER BY salary DSC |

|                    |
|--------------------|
| Select your answer |
| DESC;              |
| LIMIT 10;          |
| LIMIT 1, 10;       |

## Explanation:

You should complete the SQL query as follows:

SELECT \* FROM employees.salaries

ORDER BY salary DESC

LIMIT 10;

You should use the SELECT clause to return all fields from the salaries table.

You should not use the SELECT TOP(10) clause. You can use SELECT TOP(10) with SQL Server or other T SQL compatible databases to return the specified number of rows.

You should not use the SELECT MAX(salary) clause. You can use this clause to return the maximum salary in the salaries table.

You should use the ORDER BY salary DESC clause to order the salaries in descending order, from the highest to the lowest salary.

You should not use the ORDER BY salary ASC or ORDER BY salary clauses. This returns the salaries ordered from the lowest to the highest salary.

You should use the LIMIT 10; clause to limit the number of rows returned from the query and show the top 10 salaries. You should not use the LIMIT 1, 10; clause. This limits the number of rows returned to 10, starting from the second row. In this case, the top salary will be omitted, returning the second highest salary to the eleventh one, instead of the top ten.

You should not use the DESC; clause. There is no difference if you insert a line break after the ORDER BY clause.

If you are using a T-SQL compatible database, a valid query to retrieve the top ten salaries would be:

```
SELECT TOP (10)
FROM employees.salaries
ORDER BY salary DESC;
```

## Question 122

CertyIQ

You need to relate the SQL statements with their associated group.

To answer, select the appropriate statement from the drop-down menus.

Data Manipulation Language (DML)

|                      |
|----------------------|
| Select your answer ▼ |
| ALTER                |
| GRANT                |
| INSERT               |

Data Definition Language (DDL)

|                      |
|----------------------|
| Select your answer ▼ |
| ALTER                |
| GRANT                |
| INSERT               |

**Correct answer: -**

Data Manipulation Language (DML)

|                      |
|----------------------|
| Select your answer ▼ |
| ALTER                |
| GRANT                |
| INSERT               |

Data Definition Language (DDL)

|                      |
|----------------------|
| Select your answer ▼ |
| ALTER                |
| GRANT                |
| INSERT               |

## Explanation:

You should use the INSERT statement with the DML group. DML statements deal with information stored in the database table. The following are examples of DML statements: SELECT, INSERT, UPDATE, and DELETE.

You should use the ALTER statement with the DDL group. DDL statements deal with creating, altering, or deleting a database object or structure. The following are examples of DDL statements: CREATE, ALTER, DROP, and RENAME.

You should not use the GRANT statement for either the DDL or DML group. GRANT statements are related to the Data Control Language (DCL) group. They are used to grant permission on database objects.

### Question 123

CertyIQ

You have a table named Orders as shown in the below exhibit.

| Orders  |            |          |
|---------|------------|----------|
| OrderID | CustomerID | Quantity |
| 1000    | C1         | 1        |
| 1001    | C2         | 3        |
| 1002    | C1         | 1        |
| 1003    | C1         | 2        |
| 1004    | C2         | 4        |
| 1005    | C1         | 2        |
| 1006    | C3         | 1        |

| Query Result |          |
|--------------|----------|
| CustomerID   | Quantity |
| C1           | 6        |
| C2           | 7        |
| C3           | 1        |

You need to find the total quantity ordered by each customer as shown in the exhibit query results.

What should you do to complete the query? To answer, select the appropriate options from the drop-down menus.

SELECT  , SUM( )  

|            |
|------------|
| CustomerID |
| OrderID    |
| Quantity   |

  
FROM Orders  
  
GROUP BY 

|            |
|------------|
| CustomerID |
| OrderID    |
| Quantity   |

**Correct answer: -**

SELECT  , SUM(  )

|            |
|------------|
| CustomerID |
| OrderID    |
| Quantity   |

|            |
|------------|
| CustomerID |
| OrderID    |
| Quantity   |

FROM Orders

GROUP BY

|            |
|------------|
| CustomerID |
| OrderID    |
| Quantity   |

## Explanation:

You should use the following query to find the total quantity ordered by each customer:

```
SELECT CustomerID, SUM(Quantity) FROM Orders GROUP BY CustomerID
```

You use the SUM() aggregate function to calculate the total quantity. To be able to see the total quantity bought by each customer, you need to add CustomerID to the GROUP BY clause allowing it to show aggregated results by CustomerID.

### Question 124

CertyIQ

Match the SQL statements or clauses to their functions.

To answer, drag the appropriate SQL statement to the relevant function. Each statement may be used once, more than once or not at all.

Drag and drop the answers: -

|               |   |  |
|---------------|---|--|
| <b>Drop</b>   | To remove an object from a database         |  |
| <b>Insert</b> | To retrieve rows from a table               |  |
| <b>Select</b> | To add new rows to a table                  |  |
| <b>Where</b>  | To filter the rows the statement applies to |  |

Correct Answers: -

|               |   |               |
|---------------|---|---------------|
| <b>Drop</b>   | To remove an object from a database         | <b>DROP</b>   |
| <b>Insert</b> | To retrieve rows from a table               | <b>SELECT</b> |
| <b>Select</b> | To add new rows to a table                  | <b>INSERT</b> |
| <b>Where</b>  | To filter the rows the statement applies to | <b>WHERE</b>  |

## Explanation:

**DROP** is used to remove objects from a database. It can be used to remove columns, views, stored procedures or whole tables. In order to remove rows, you should use **DELETE**.

**SELECT** is used to retrieve rows from a table. By default, it will be performed on all rows unless a filtering criteria is added to the statement.

**INSERT** is used to add new rows to a table. It can add a single row, or multiple rows at a time.

**WHERE** is used to filter rows the statement applies to. It will be used after the initial statement, such as **SELECT** or **UPDATE**. Its usage will be within a **WHERE** clause.

### Question 125

CertyIQ

Which two of the following statements are characteristics of database normalization? Each correct answer presents part of the solution.

Choose the correct answers

- A. Improved data integrity**
- B. Reduced query complexity
- C. Fewer tables
- D. Fewer foreign keys
- E. Less data to store**

## Explanation:

Less data to store is a characteristic of normalization. Normalization removes redundant data by removing duplication, resulting in less data overall. Potentially, this could lead to a reduction in your storage costs.

Improved data integrity is also a characteristic of normalization. Normalization removes duplicate data; every time you have the same data added in more than one place, you increase the possibility of being updated inconsistently due to an error.

Fewer tables are not a characteristic of normalization. Normalization increases the number of tables by adding each data entity into a different table and referencing records in other tables via foreign key columns.

Reduced query complexity is not a characteristic of normalization. It is simpler to write a query on one table than on two, as you will need to join the two tables via a relationship between the data to write your query. Normalization increases the number of tables, which means that you will need to use more joins in your queries and increase their complexity.

Fewer foreign keys is not a characteristic of normalization. Normalization increases the number of tables by splitting duplicated data into its own table, which is then referenced in the original table via a foreign key. Normalization will therefore increase the number of foreign keys in the database.

### Question 126

CertyIQ

A company is moving its on-premises databases to Azure. The databases support custom applications. Two applications are stable only when they are used with SQL Server 2016 SP2.

What should you choose?

Choose the correct answer

- A. SQL Server on virtual machine (VM)
- B. Azure SQL Database elastic pool
- C. Azure SQL Managed Instance
- D. Azure SQL Database serverless

### Explanation:

You should choose SQL Server on VM. This type of move is often called lift-and-shift and provides for rapid migration to the cloud. SQL Server on VM is the option most compatible with your on-premises database servers and is the only deployment option that lets you run a SQL Server version other than the latest stable version. This is an Infrastructure as a Service (IaaS) deployment, where you are responsible for managing the operating system and database server.

Azure SQL Database serverless, Azure SQL Database elastic pool, and Azure SQL Managed Instance are all Platform as a Service (PaaS) deployments. With PaaS, you do not have access to the operating system, and some database administrative activities, such as keeping SQL Server updated, are handled for you. These deployments run the most recent stable SQL Server version. While these implementations are close, they are not 100% compatible with an on-premises implementation.

The deployment option most compatible with an on-premises instance is SQL Server managed instance. This can be used in most lift-and-shift scenarios, but it is limited to the latest SQL Server version.

### Question 127

CertyIQ

You need to describe the features that are present in Azure SQL Database.

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

| Statements  | Yes                   | No                    |
|---|-----------------------|-----------------------|
| Azure SQL Database allows you to choose the SQL Server engine version.                        | <input type="radio"/> | <input type="radio"/> |
| Azure SQL Database includes a fully managed backup service.                                   | <input type="radio"/> | <input type="radio"/> |
| Azure SQL Database automatically applies security patches in the underlying operating system. | <input type="radio"/> | <input type="radio"/> |

**Correct Answers: -**

| Statements  | Yes                              | No                               |
|---|----------------------------------|----------------------------------|
| Azure SQL Database allows you to choose the SQL Server engine version.                        | <input type="radio"/>            | <input checked="" type="radio"/> |
| Azure SQL Database includes a fully managed backup service.                                   | <input checked="" type="radio"/> | <input type="radio"/>            |
| Azure SQL Database automatically applies security patches in the underlying operating system. | <input checked="" type="radio"/> | <input type="radio"/>            |

## Explanation:

Azure SQL Database does not allow you to choose the SQL Server engine version. Azure SQL Database uses the latest stable version of the SQL Server engine. You should use SQL Server on Azure Virtual Machine (VM) to choose which SQL Server version to use.

Azure SQL Database includes a fully managed backup service and automatically applies security patches in the underlying operating system. Azure SQL Database is a platform as a service (PaaS) database offering, where most of the database management functions are handled by Azure. This includes backups, operating system updates, and applying security patches.

### Question 128

CertyIQ

You need to describe the features that are present in Azure Database for PostgreSQL.

For each of the following statements, select Yes if the statement is true. Otherwise, select No.



| Statements  | Yes                   | No                    |
|---|-----------------------|-----------------------|
| Azure Database for PostgreSQL can be deployed as a single server or as a cluster.             | <input type="radio"/> | <input type="radio"/> |
| Azure Database for PostgreSQL enforces Transport Layer Security (TLS) connections by default. | <input type="radio"/> | <input type="radio"/> |
| Azure Database for PostgreSQL supports Azure Active Directory (Azure AD) authentication.      | <input type="radio"/> | <input type="radio"/> |

**Correct Answers: -**

| Statements  | Yes                              | No                    |
|---|----------------------------------|-----------------------|
| Azure Database for PostgreSQL can be deployed as a single server or as a cluster.             | <input checked="" type="radio"/> | <input type="radio"/> |
| Azure Database for PostgreSQL enforces Transport Layer Security (TLS) connections by default. | <input checked="" type="radio"/> | <input type="radio"/> |
| Azure Database for PostgreSQL supports Azure Active Directory (Azure AD) authentication.      | <input checked="" type="radio"/> | <input type="radio"/> |

## Explanation:

Azure Database for PostgreSQL can be deployed as a single server or as a cluster. You can deploy Azure Database for PostgreSQL as a single server or as a Hyperscale (Citus) cluster. Azure Database for PostgreSQL Hyperscale (Citus) can horizontally scale queries across multiple machines by using sharding.

Azure Database for PostgreSQL enforces TLS connections by default. Enforcing TLS connections improves security by encrypting the connection between the client and the database server. You can disable the TLS connection in single server deployments, but this is not advised.

Azure Database for PostgreSQL supports Azure AD authentication. You can configure Azure AD authentication with Azure Database for PostgreSQL to enable users to connect to the database using their own credentials. This centralizes the users' management in one place.

### Question 129

CertyIQ

You are evaluating Azure data services.

You need to classify each service type as infrastructure as a service (IaaS), platform as a service (PaaS), or software as a service (SaaS) offering.

To answer, drag the appropriate service type to each service. A service type may be used once, more than once, or not at all.

**Drag and drop the answers: -**

|             |  |  |
|-------------|--|--|
| <b>IaaS</b> | Azure SQL Database                             |  |
| <b>PaaS</b> | SQL Server on Azure Virtual Machine (Azure VM) |  |
| <b>SaaS</b> | Azure SQL Managed Instance                     |  |

**Correct Answers: -**

|             |  |             |
|-------------|--|-------------|
| <b>IaaS</b> | Azure SQL Database                             | <b>PaaS</b> |
| <b>PaaS</b> | SQL Server on Azure Virtual Machine (Azure VM) | <b>IaaS</b> |
| <b>SaaS</b> | Azure SQL Managed Instance                     | <b>PaaS</b> |

## Explanation:

You should classify Azure SQL Database as a PaaS offering. Most of the database management functions are handled by Azure in Azure SQL Database, including a fully managed backup service. They automatically apply security patches in the underlying operating system.

You should classify SQL Server on Azure VM as an IaaS offering. You should use SQL Server on Azure VM to have complete access to the infrastructure, allowing you to choose which SQL Server version to use and to configure the underlying operating system. This model of offering is good for lift and shift scenarios, where you move an on-premises virtual machine as-is to the cloud.

You should classify Azure SQL Managed Instance as a PaaS offering. Azure SQL Managed Instance brings more compatibility and resources that are really close to on-premises SQL Server deployments. However, you can still have the benefits of a PaaS offering, like a fully managed backup service, automatic application of security patches, and high availability.

You should not classify any of these services as SaaS, SaaS is offered as ready-to-use applications in the cloud, such as emails, communication tools, and office tools, such as Microsoft 365.

### Question 130

**CertyIQ**

Your manager asks you to plan the migration of an on-premises SQL Server 2019 database to a cloud service. The on-premises database uses Database Mail and SQL Server Agent.

You need to choose an offering that can minimize cost and administration.

Which database solution should you use?

Choose the correct answer

**A. Azure SQL Managed Instance**

B. SQL Server on Azure Virtual Machines

C. Azure database for MariaDB

D. Azure SQL Database

## Explanation:

You should use Azure SQL Managed Instance. Azure SQL Managed Instance is used for deployment where you need to have complete feature parity with SQL Server on-premises. You should use a managed instance if your database uses features like SQL Server Agent and Database Mail.

You should not use Azure SQL Database. Azure SQL Database gives you a single database in the cloud with minimal cost and administration, in which you can create databases and tables. Azure manages administrative tasks such as backup and recovery. However, Azure SQL Database does not implement features like SQL Server Agent and Database Mail, which is required in this scenario.

You should not use SQL Server on Azure Virtual Machines. SQL Server on Azure Virtual Machines gives you a similar administrative experience as your on-premises server, which will therefore increase your administrative effort.

You should not use an Azure database for MariaDB. An Azure database for MariaDB allows you to have MariaDB community edition implementation in Azure. MariaDB is a relational database management system.

### Question 131

CertyIQ

You work as an Azure Database administrator.

You need to identify characteristics of relational Azure data services.

Which two options should you use for Platform-as-a-Service (PaaS) relational data services? Each correct answer presents a complete solution.

Choose the correct answers

A. Azure Cosmos DB

B. Azure SQL Database Managed Instance

C. SQL Server on Azure Virtual Machines

D. Azure SQL Database

## Explanation:

You should use Azure SQL Database for PaaS relational data services offerings. Azure SQL Database is a managed database server in the cloud.

You can also use Azure SQL Database Managed Instance for PaaS relational data services offerings. Azure SQL Database Managed Instance allows you to run multiple databases in the same instance.

You should not use SQL Server on Azure Virtual Machines. SQL Server is an Infrastructure-as-a-Service (IaaS) offering for data services. It allows you to run SQL Server on an Azure virtual machine by providing the relevant infrastructure.

You should not use Azure Cosmos DB. Azure Cosmos DB is a PaaS offering mainly targeted for non relational data stores. It allows you to store documents and objects.

## Question 132

Which type of cloud service is delivered by each of the below Azure SQL services?

Drag the appropriate cloud service type to the relevant Azure SQL service. Each cloud service type may be used once, more than once or not at all.

Drag and drop the answers: -

|      |  |  |
|------|--|--|
| IaaS | SQL Server on Azure Virtual Machines (VMs) |  |
| PaaS | Azure SQL Managed Instance                 |  |
| SaaS | Azure SQL Database                         |  |

Correct Answers: -

|      |  |      |
|------|--|------|
| IaaS | SQL Server on Azure Virtual Machines (VMs) | IaaS |
| PaaS | Azure SQL Managed Instance                 | PaaS |
| SaaS | Azure SQL Database                         | PaaS |

## Explanation:

SQL Server on Azure Virtual Machines (VMs) is an Infrastructure as a Service (IaaS) service. This form of cloud service requires the most responsibility for the customer, as they need to manage everything other than the physical devices used. SQL Server on Azure Virtual Machines creates virtual hardware for customers to use as they wish.

Azure SQL Managed Instance is a Platform as a Service (PaaS) service. It does not require customers to manage physical hardware or operating systems and includes automated software updates and backup: customers typically use this service to migrate existing systems to the cloud.

Azure SQL Database is a Platform as a Service (PaaS) service. Similar to Azure SQL Managed Instance, this is a fully managed solution that handles backups, monitoring, and upgrades for the customer. Customers use this service as a high availability data layer for their cloud-based systems.

SaaS stands for Software as a Service. SaaS does not require the customer to manage physical devices, operating systems, or updates to the software. Users only need to create accounts and manage access. An example of SaaS would be Microsoft Dynamics 365 or Power BI.

### Question 133

CertyIQ

You are assisting with building a business case for adopting the Azure SQL Database service.

Which three of the below are advantages of the Azure SQL Database service over other available Azure SQL services? Each correct answer presents a complete solution.

Choose the correct answers

- A. Lower cost
- B. Fully compatible with on-premises SQL Server installations
- C. Full control over the SQL server engine
- D. Higher availability
- E. Minimal administration
- F. Database Mail-supported

### Explanation:

Azure SQL Database has a lower cost. It is a relational database, designed for modern cloud applications. It is used by customers that require a high availability, and a scalable database layer for their cloud applications.

Azure SQL Database is a platform-as-a-service (PaaS) service. Although Azure SQL Managed Instance is also a PaaS service, Azure SQL Database service eliminates more administrative tasks like removing the need to manage the SQL Server configuration:

Azure SQL Database service offers 99.995% uptime, in comparison with 99.99% that the other services offer.

Azure SQL Database service is not fully compatible with on-premises SQL Server installations. Some features are available in on-premises SQL Server that are not available in Azure SQL Database service. Azure SQL Managed Instance offers almost 100% compatibility as it has additional configuration options, whereas SQL Server on Azure Virtual Machines is fully compatible as it allows the most granular level of user configuration.

Azure SQL Database services do not allow full control over the SQL Server engine. The Azure SQL Database service performs some tasks for the user, such as performing back-ups and installing patches, but only SQL Server on Azure Virtual Machines allows full control over the engine. This is because SQL Server on Azure Virtual Machines is an infrastructure as a service (IaaS) service, which requires users to manage operating systems.

Azure SQL Database services do not support Database Mail. This feature, which allows the database to send email messages to users, is not available in the Azure SQL Database service. It is, however, offered in Azure SQL Managed Instance and SQL Server on Azure Virtual Machines.

### Question 134

CertyIQ

HOTSPOT -

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Hot Area:

| Statements   | Yes                   | No                    |
|--|-----------------------|-----------------------|
| Azure Database for MySQL provides automated back-ups.                | <input type="radio"/> | <input type="radio"/> |
| Azure Database for MySQL is a relational database management system. | <input type="radio"/> | <input type="radio"/> |
| Azure Database for MySQL has a single deployment option.             | <input type="radio"/> | <input type="radio"/> |

**Correct Answers: -**

| Statements   | Yes                              | No                               |
|--|----------------------------------|----------------------------------|
| Azure Database for MySQL provides automated back-ups.                | <input checked="" type="radio"/> | <input type="radio"/>            |
| Azure Database for MySQL is a relational database management system. | <input checked="" type="radio"/> | <input type="radio"/>            |
| Azure Database for MySQL has a single deployment option.             | <input type="radio"/>            | <input checked="" type="radio"/> |

## Explanation:

Azure Database for MySQL provides automated back-ups. Azure Database for MySQL is a platform as a service (PaaS) service. It offers full back-up, incremental back-up, and point-in-time database restore functions.

Azure Database for MySQL is a relational database management system. MySQL is an open source relational database management system. The Azure Database for MySQL service is a PaaS implementation of MySQL on the Azure cloud.

Azure Database for MySQL supports two deployment options: single server, which has minimal required configuration, handles most database functions, such as back-ups, for the user and is best suited for existing applications, and flexible server, which allows more granular control and is best suited for new deployments.

### Question 135

CertyIQ

You work for a finance company that tracks information regarding stock prices over time. It uses an on premises MariaDB server to store this data with a temporal dimension, allowing queries to compare stocks and predictions over time.

Which three actions will result from your company migrating its systems to Azure Database for MariaDB? Each answer represents a complete solution.

Choose the correct answers

A. Having the ability to choose the operating system of the server

B. Having built-in performance monitoring

C. Having automatic backups

#### D. Having high availability

#### E. Having the need to migrate to Azure SQL Database

### Explanation:

Migrating the company's systems to Azure Database for MariaDB will result in:

- Having high availability - Azure Database for MariaDB guarantees 99.99% up-time for its service, which is often called four nines.

Having automatic backups Azure Database for MariaDB provides automatic backups and enables administrators to enact a point-in-time restore for up to 35 days.

Having built-in performance monitoring - Azure Database for MariaDB provides various metrics and . logs to help administrators understand how their database performs. They can also set up alerts based on these metrics if an item needs their attention.

Azure Database for MariaDB is a Platform as a Service (PaaS) service, meaning that Microsoft, and not the user, is responsible for the infrastructure of the virtual hardware it runs on (including the operating systems).

Azure Database for MariaDB will allow the company to continue using MariaDB, but as a service. It will not need to adapt its systems to run on Azure SQL Database or perform a migration.

#### Question 136

CertyIQ

Which Azure storage service includes support for Hot Cool and Archive access tiers?

Choose the correct answer

A. Azure File

B. Azure Blob

C. Azure Table

### Explanation:

Azure Blob is the only Azure storage option that supports access tiers. The default is the Hot tier, which is designed for frequently accessed data. The Cool tier is optimized for data that will be stored for at least 30 days. The Cool tier has lower storage costs than the Hot tier but higher costs for early access. The Archive tier is designed for data that is rarely accessed and will remain in storage for at least 180 days. Access to Archive tier data requires the data to be rehydrated to a Hot or Cool tier. This can mean a latency of several hours. Access tier support requires Data Lake Storage Gen2.

Azure Blob also supports two performance tiers. The Standard performance tier provides for high performance using hard disk-based storage media. The Premium performance provides greater throughput than the Standard tier and uses solid-state drive (SSD) media. The Standard and Premium tiers are also supported for other storage options including Azure File storage and Azure SQL Database.

Azure Table and Azure File do not support access tiers. Access tiers is a feature supported through Cosmos DB. Azure Table and Azure File are distinct storage types and are not implemented through Cosmos DB APIs. Table storage is used for storing structured, non-relational data. File storage provides file storage with shared access, similar to a file server.

#### Question 137

CertyIQ



### HOTSPOT -

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Hot Area:

| Statements  | Yes                   | No                    |
|---|-----------------------|-----------------------|
| You can create a premium Azure file share in a General purpose version 2 (GPv2) or File Storage account.  | <input type="radio"/> | <input type="radio"/> |
| You can configure a premium Azure file share for locally-redundant storage (LRS), zone redundant storage (ZRS), or geo-redundant storage (GRS). | <input type="radio"/> | <input type="radio"/> |
| You can use a premium Azure file share to replace or supplement traditional on-premises file shares.  | <input type="radio"/> | <input type="radio"/> |

Correct Answers: -

| Statements  | Yes                              | No                               |
|---|----------------------------------|----------------------------------|
| You can create a premium Azure file share in a General purpose version 2 (GPv2) or File Storage account.  | <input type="radio"/>            | <input checked="" type="radio"/> |
| You can configure a premium Azure file share for locally-redundant storage (LRS), zone redundant storage (ZRS), or geo-redundant storage (GRS). | <input type="radio"/>            | <input checked="" type="radio"/> |
| You can use a premium Azure file share to replace or supplement traditional on-premises file shares.  | <input checked="" type="radio"/> | <input type="radio"/>            |

### Explanation:

Both GPv2 and File Storage account accounts support Azure file share, but you can only create a premium Azure file share in a File Storage account. You can create a standard file share account only in a GPv2 account.

You can configure a premium Azure file share for LRS and, in select regions, for ZRS. A standard file storage account supports GRS, but not a premium file share.

You can use a premium Azure file share to replace or supplement traditional on-premises file shares. This is true for both standard and premium file share. This includes scenarios where application data is moved to the cloud but applications continue to run on-premises.

### Question 138

CertyIQ

Select the appropriate option from the drop-down list to complete the sentence.



Azure File storage

Select your answer



- allows you to select the underlying hardware and operating system.
- is the recommended storage solution for key/value storage implementation.
- supports direct mounting by Windows, macOS, and Linux.
- supports redundancy across multiple regions by default.

**Correct Answers: -**

Azure File storage

Select your answer



- allows you to select the underlying hardware and operating system.
- is the recommended storage solution for key/value storage implementation.
- supports direct mounting by Windows, macOS, and Linux.
- supports redundancy across multiple regions by default.

## Explanation:

Azure File storage supports direct mounting by Windows, macOS, and Linux. This includes support for concurrent access from the cloud and on-premises. Azure File storage can be used to supplement or replace on-premises file server shares.

Azure File storage does not allow you to select the underlying hardware and operating system. Azure File storage is implemented as a serverless file service in which you have neither direct access to, or administrative responsibilities for, the underlying architecture. The one infrastructure choice you can make is between hard disk (HDD) standard file shares and solid-state disk (SSD) premium file shares.

Azure File storage is not the recommended storage solution for key/value storage implementation. Microsoft recommends Azure Cosmos DB Core (SQL) API for new key/value requirements. Key/value storage is also supported by Azure Table storage and Cosmos DB Table API.

Azure File storage does not support redundancy across multiple regions by default. Standard file shares support locally-redundant storage (LRS) by default with options for zone redundant storage (ZRS), geo redundant storage (GRS), and geo-zone-redundant storage (GZRS). Replication across multiple regions is supported as an option, but not as a default setting. The large file share feature and premium file shares support LRS and ZRS only.

### Question 139

CertyIQ

You plan to reduce storage costs to store older, non-structured data in Azure Blob storage. The data needs to be accessible occasionally to generate reports that must be available as soon as possible.

You need to choose the most appropriate data tier for this data.

Which tier should you use?

Choose the correct answer

A. Cool

B. Hot

C. Archive

## Explanation:

You should use the cool tier. This tier is optimized for storing data that is infrequently accessed, with a lower storage cost than the hot tier.

You should not use the hot tier. This tier is optimized for frequently accessed data and has the highest storage cost among the storage tiers.

You should not use the archive tier. This tier is optimized for storing data that is rarely accessed, with the lowest storage cost among the storage tiers. The archive tier data is saved in offline storage, requiring you to wait for the rehydration of the data to an online tier before you can access the data.

### Question 140

CertyIQ

You are migrating an application to Azure. This application uses a shared network folder as a data store.

You need to move the shared network folder to Azure storage.

Which type of Azure storage should you use?

Choose the correct answer

- A. Azure File storage
- B. Azure Queue storage
- C. Azure Blob storage
- D. Azure Table storage

### Explanation:

You should use Azure File storage. Azure File storage provides file shares compatible with the Server Message Block (SMB) protocol, replacing traditional on-premises file servers with a cloud solution.

You should not use Azure Queue storage. Azure Queue storage is a service used for storing messages that are used by distributed applications. A queue message can be up to 64 KB in size.

You should not use Azure Table storage. Azure Table storage is used to store data as rows and columns, forming a table in which the number of columns may vary according to each row.

You should not use Azure Blob storage. Azure Blob storage can store unstructured data, such as binary objects, images, media files, and large text files, in a cost-efficient and scalable manner.

Q66

### Question 141

CertyIQ

You need to describe which elements compose a key in Azure Table storage.

Which two elements compose a key? Each correct answer presents part of the solution.

Choose the correct answers

- A. Row key
- B. Value
- C. Timestamp
- D. Table name
- E. Partition key

## Explanation:

The two elements that compose a key in Azure Table storage are the partition key and the row key. Data stored in Azure Table storage is referred to as rows and columns, and it forms a table in which the columns may vary according to each row. The rows in a table are split into partitions, and related rows are grouped based on a common property. This common property is called a partition key. The partition key identifies the partition inside the Azure Table storage and a row key is used to uniquely identify each row in a given partition.

The table name does not compose a key in Azure Table storage. The table name is an identifier in the Azure Storage account used to store a set of data in the key/value format.

The value does not compose a key in Azure Table storage. The value represents the other properties related to a given key. This is the data that is returned when you query a given key.

The timestamp does not compose a key in Azure Table storage. The timestamp is a property used to record the time an entity was last modified. The timestamp is used internally by the Azure Table storage to provide optimistic concurrency.

### Question 142

CertyIQ

To complete the following sentence, select the appropriate option from the drop-down menu.

Choose the correct options: -

In Azure Table storage, data is stored as rows and columns, forming a table in

which

- a group of columns is stored in different partitions.
- the number of columns is exactly the same in each row.
- the number of columns may vary according to each row.

Correct Answer: -

In Azure Table storage, data is stored as rows and columns, forming a table in

which

- a group of columns is stored in different partitions.
- the number of columns is exactly the same in each row.
- the number of columns may vary according to each row.

## Explanation:

In Azure Table storage, a group of columns is not stored in different partitions. The rows in a table are split into partitions, which group together related rows based on a common property. This common property is called the partition key.

The number of columns in each row may not be exactly the same. Azure Table lets you store semi structured data. Unlike in a relational table, each row can have different columns of data.

In Azure Table storage, data is stored as rows and columns, forming a table in which the number of columns may vary according to each row.

### Question 143

CertyIQ

You need to store training videos for company users.  
What Azure data service should you use?  
Choose the correct answer

- A. Azure Table storage
- B. Azure File storage
- C. Azure Blob storage**
- D. Azure SQL Database

### Explanation:

You should use Azure Blob storage to store training videos. Azure Blob storage allows you to store large object files such as images, videos, and virtual machines (VMs).

You should not use Azure Table storage to store training videos. Azure Table storage allows you to store semi-structured data into key/value format. This means it stores data into a rows and columns format, but unlike a relational database, each row has a key and each column contains entire data value.

You should not use Azure File storage to store training videos. Azure File storage allows you to create file shares in the cloud, which can be accessible for network users.

You should not use Azure SQL database to store training videos. Azure SQL database allows you to store relational data in a cloud database.

### Question 144

CertyIQ

To complete the sentence, select the appropriate option from the drop-down menu.

Choose the correct options: -

To implement folder and directory level security in Azure Storage,

you need to 

|                                      |   |
|--------------------------------------|---|
| Select your answer                   | ▼ |
| enable hierarchical namespace.       |   |
| use the cool access tier as default. |   |
| use premium performance.             |   |

**Correct Answer: -**

To implement folder and directory level security in Azure Storage,

you need to 

|                                       |   |
|---------------------------------------|---|
| Select your answer                    | ▼ |
| <b>enable hierarchical namespace.</b> |   |
| use the cool access tier as default.  |   |
| use premium performance.              |   |

### Explanation:

To implement folder and directory level security in Azure Storage, you need to enable hierarchical namespace. Enabling hierarchical namespace allows you to organize your blob containers in folders and directories, allowing you to define POSIX-compatible permissions and role-based access control (RBAC) in your container.

You should not use the cool access tier as default or use premium performance. You can use the cool access tier to reduce storage costs, and premium performance to improve data access performance. These features are not related to folder or directory access control in Azure Storage.

### Question 145

CertyIQ

Your company is using Azure Files.

You need to improve the performance of serving files to users inside your on-premises network.

What should you use to synchronize the Azure Files locally shared files with a local cache inside your company network?

Choose the correct answer

- A. AzCopy
- B. Azure File Sync**
- C. Azure Files AD Authentication
- D. Azure storage account

### Explanation:

You should select Azure File Sync. The Azure File Sync service connects an on-premises server with cached copies of files with Azure File Storage data. This will allow users to access files via the cached copies inside your on-premises network, which improves performance.

You should not select AzCopy. This utility allows users to upload files to Azure File Storage.

You should not select Azure storage account. A storage account is a shared pool for storage. You can use it to create Azure file shares or Blob Storage containers.

You should not select Azure Files AD Authentication. This allows users to authenticate via single sign-on (SSO) when they access an Azure file share and a directory, just as they would with Office 365 applications. There would be no improvement in file-serving performance.

### Question 146

CertyIQ

Your company is using Azure blob storage to store recordings of conference speeches as video files, and the marketing department wishes to start storing audio recordings as well.

You need to explain how they can separate this type of files from the existing videos.

What should you recommend?

Choose the correct answer

- A. Storage account

**B. Container**

C. Archive tier

D. Blob

## Explanation:

You should recommend a container. Containers act like folders in a file system under your Blob Storage account. They are used to logically group related blob files together. For instance, those with different extensions. You can create an unlimited number of containers, and each container can store an unlimited number of blobs.

You should not recommend a storage account. Storage accounts are your unique namespace in Azure, containers live under them to logically group different types of files together.

You should not recommend a blob. Blobs (or binary large objects) are individual files. Blobs are added to containers, which act like directories under your storage account.

You should not recommend an archive tier. The archive tier is one of the three tiers (hot, cool, and archive) which governs how quickly you can retrieve blobs. The archive tier is the slowest retrieval (and therefore the cheapest), which is intended for blobs that you will not need to access frequently.

### Question 147

CertyIQ

Match each data application with the best Cosmos DB API choice.

To answer, select the most appropriate Cosmos DB API from the drop-down list.

#### Choose the correct options

You are creating a new application that loads key/value format data from multiple sensors.

| Select your answer ▼ |
|----------------------|
| Azure Table API      |
| Cassandra API        |
| Core (SQL) API       |
| Gremlin API          |
| MongoDB API          |

You are creating a new application that analyzes detailed relationship information for non-relational data.

| Select your answer ▼ |
|----------------------|
| Azure Table API      |
| Cassandra API        |
| Core (SQL) API       |
| Gremlin API          |
| MongoDB API          |

You are moving application data to the cloud that uses semi-structured documents to store data.

| Select your answer ▼ |
|----------------------|
| Azure Table API      |
| Cassandra API        |
| Core (SQL) API       |
| Gremlin API          |
| MongoDB API          |

You are moving column-family format data to the cloud to support an existing application.

Select your answer ▼

Azure Table API

Cassandra API

Core (SQL) API

Gremlin API

MongoDB API

Correct Answers: -

You are creating a new application that loads key/value format data from multiple sensors.

Core (SQL) API

You are creating a new application that analyzes detailed relationship information for non-relational data.

Gremlin API

You are moving application data to the cloud that uses semi-structured documents to store data.

Core (SQL) API

You are moving column-family format data to the cloud to support an existing application.

Cassandra API

## Explanation:

Microsoft recommends that any new data project created from scratch uses the Core (SQL) API. The Core (SQL) API is used to store semi-structured data in a document and uses a SQL-like query language to manipulate the data stored in the documents. This includes applications with key/value data. This type of application is also supported by the Table API, but the Core (SQL) API is recommended as the best solution because it provides improved indexing and a richer query experience.

When creating a new application that analyzes detailed relationship information for non-relational data you should use the Gremlin API. This is one of the few cases where the Core (SQL) API is not recommended as the best solution. The statement described a graph database to which the Gremlin API is specifically suited.

When moving application data to the cloud that uses semi-structured documents to store data, you should use the Core (SQL) API. The Core (SQL) API gives you the ability to create, query, and update data documents.

You should use the Cassandra API when moving column-family format data to the cloud to support an existing application. Microsoft suggests limiting the use of the Cassandra API to support existing data, such as when moving data to the cloud. The Cassandra API is specifically designed to support column-family data.

None of the data applications should use the Azure Table API or MongoDB API. Microsoft recommends that either should only be used when supporting an existing data application, such as when moving an Azure Table store or MongoDB to Azure.

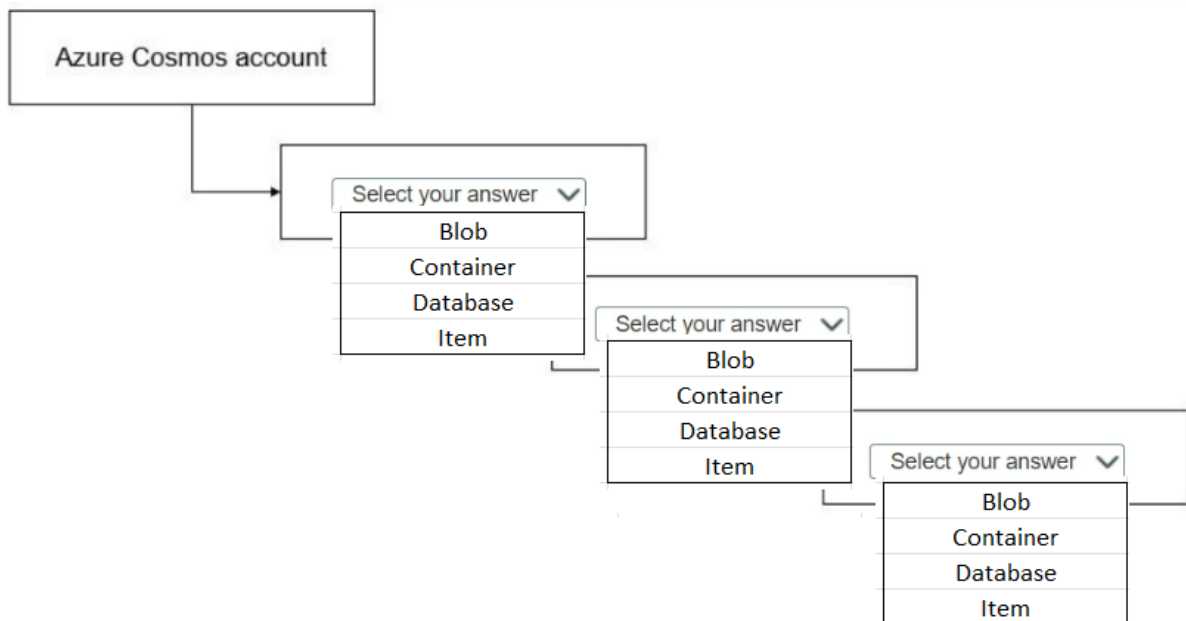
### Question 148

CertyIQ

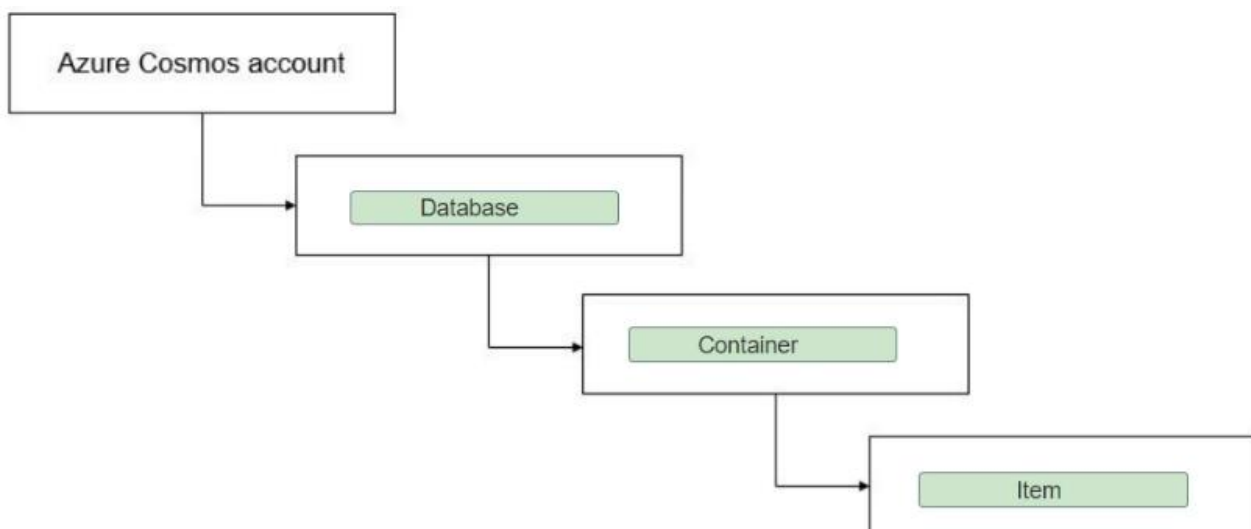
Complete the Cosmos DB general resource hierarchy used by all APIs.

To answer, select the correct resource from the drop-down menus.

### Choose the correct options



**Correct Answer: -**



## Explanation:

An Azure Cosmos account is topmost in the resource hierarchy. You must have this before you can create an Azure Cosmos DB database instance. You can then create API-specific containers, such as tables, collections, or graphs. You create items, the entities for which you are storing data, inside a container. Examples include documents, nodes, edges, or rows.

There is no blob in the Cosmos DB storage hierarchy. Azure Blob is another storage option in Azure. A storage blob has its own hierarchy of a storage account, container (called a container), and then a blob. Items being stored are contained in the blob, adding a fifth layer to that hierarchy.

### Question 149

CertyIQ

Match a Cosmos DB API to a type of non-relational data.



To answer, drag the appropriate API to each data type. Each API may be used once, more than once, or not at all.

**Drag and drop the answers**

|               |                |  |
|---------------|----------------|--|
| Cassandra API | Columnar data  |  |
| Gremlin API   | Graph data     |  |
| Core API      | JSON documents |  |
| Table API     |                |  |

**Correct Answers: -**

|               |                |               |
|---------------|----------------|---------------|
| Cassandra API | Columnar data  | Cassandra API |
| Gremlin API   | Graph data     | Gremlin API   |
| Core API      | JSON documents | Core API      |
| Table API     |                |               |

**Explanation:**

You should use the Cassandra API to store columnar data. This API is compatible with Apache Cassandra databases, which are column-family databases used to store columnar data consisting of row identifiers and a group of information stored in a column. Each group of information is stored in independent data structures named keyspaces.

You should use the Gremlin API to store graph data. This API is compatible with Gremlin, which is a graph database that stores nodes and edges used for complex relationships among entities.

You should use the Core API to store JSON documents. This API is used for document-based databases that store semi-structured data in JSON format. A document usually contains all data from an entity, and each document can have different fields of data.

You should not use the Table API. You can use the Table API to store key-value data organized as rows and columns, forming a table in which the number of columns may vary according to each row. This API is compatible with Azure Table storage.

**Question 150**

**CertyIQ**

You need to identify which non-relational data stores support multi-region writes and read replicas.

To answer, select the appropriate options from the drop-down menus.

**Choose the correct options**

Supports multi-region writes:

Select your answer ▼

Azure Table storage only.

Cosmos DB Table API only.

Cosmos DB Table API and Azure Table storage.

Supports multi-region reads replicas:

Select your answer ▼

Azure Table storage only.

Cosmos DB Table API only.

Cosmos DB Table API and Azure Table storage.

Supports multi-region writes:

Cosmos DB Table API only.

Correct  
Answer: -

Supports multi-region reads replicas:

Cosmos DB Table API and Azure Table storage.

## Explanation:

Cosmos DB Table API supports multi-region writes and read replicas. You can configure read replicas in a Cosmos DB account to multiple regions, including support to create multi-region writes.

Azure Table storage supports multi-region reads replicas only. You can configure read replicas in Azure Table storage by configuring the storage account to use Read-access geo-redundant storage (RA-GRS) redundancy. This enables a readable replica in a secondary region. However, you cannot write data in the secondary region.

### Question 151

CertyIQ

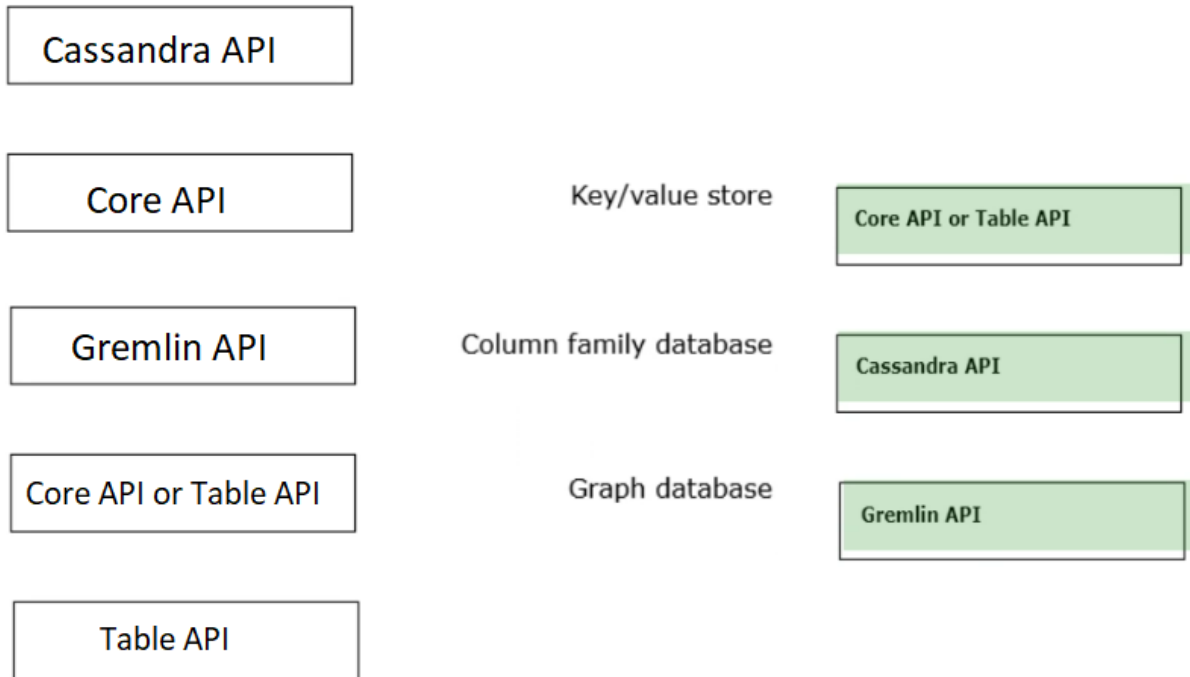
You need to implement an Azure Cosmos DB data store.

Which API should you use for each non-relational data store implementation? To answer, drag the appropriate API to the correct data store. Each API may be used once, more than once, or not at all.

Drag and drop the answers

|                       |                        |  |
|-----------------------|------------------------|--|
| Cassandra API         |                        |  |
| Core API              | Key/value store        |  |
| Gremlin API           | Column family database |  |
| Core API or Table API | Graph database         |  |
| Table API             |                        |  |

**Correct Answers: -**



## Explanation:

You should use the Azure Cosmos DB Core API or Table API to implement a Key-value store. Key-value stores are highly optimized for simple lookups scenarios. Azure Cosmos DB provides Table API for key value store implementation. Although Core API implements a document-based database to store JSON-like semi-structured data, Microsoft recommends using the Core API for new applications, where you can use a document with an item ID and a single value field to represent a key-value store.

You should use Azure Cosmos DB Cassandra API to implement a column family database. Column family database stores data in rows and columns. It is suitable to represent weather or time-series activity. Azure Cosmos DB provides Cassandra API for column family database implementation.

You should use Azure Cosmos DB Gremlin API to implement a graph database. Graph database stores information in the form of edges and nodes. It is used to represent complex relationships such as social interactivity. Azure Cosmos DB

### Question 152

CertyIQ

You work for a company that is developing a new massively multiplayer online (MMO) game, which will be launched in 20 countries next year. The data architects have opted to use Azure Cosmos DB as the games database tier.

What are two characteristics of using Azure Cosmos DB? Each correct answer presents a complete solution.

Choose the correct answers

- A. It requires no administration.
- B. It supports a single application programming interface (API).
- C. It has very low latency for data reads and writes.
- D. It supports multiple geographic regions.
- E. It supports relational data only.

## Explanation:

Azure Cosmos DB has very low latency for data reads and writes, and it is very fast and elastically scalable. It will support the very fast data reads and writes required for an online game. Halo 5: Guardians uses Azure Cosmos DB as its database tier.

Azure Cosmos DB supports multiple geographic regions. You can enable multi-region writes, adding the Azure regions of your choice to your Cosmos DB account so that globally distributed users can each work with data in their local replica.

Azure Cosmos DB is platform as a service (PaaS) application, and so the Database Administrators do need to perform some administration with this model.

Azure Cosmos DB is a NoSQL database, meaning that it is designed to support semi-structured data, such as that used by an online game.

Azure Cosmos DB supports multiple APIs such as Cassandra, Gremlin, and Table.

### Question 153

CertyIQ

Which two of the following Azure Cosmos DB APIs are used to query data using the SQL syntax? Each correct answer presents a complete solution.

Choose the correct answers

A. Cassandra

B. Table

C. Core

D. Gremlin

E. MongoDB

## Explanation:

The Core (SQL) API allows developers to work with Cosmos DB data using SQL syntax.

The Cassandra API is compatible with Apache Cassandra, a column-family structured database. It supports SQL syntax to allow developers to manipulate and retrieve data.

The Gremlin API allows developers to work with graph data. It supports graph syntax.

The Table API allows developers to work with key-value data in Cosmos DB. It supports requests based on a namespace, much like retrieving data from Azure Blob Storage.

The MongoDB API supports MongoDB Query Language (MQL), which is object-oriented.

### Question 154

CertyIQ

HOTSPOT -

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Hot Area:

| Statements   | Yes                   | No                    |
|--|-----------------------|-----------------------|
| It allows simpler queries to retrieve data than a relational database. | <input type="radio"/> | <input type="radio"/> |
| It reduces data duplication through normalization.                     | <input type="radio"/> | <input type="radio"/> |
| It supports applications with a global user base.                      | <input type="radio"/> | <input type="radio"/> |

Correct Answers: -

| Statements   | Yes                              | No                               |
|--|----------------------------------|----------------------------------|
| It allows simpler queries to retrieve data than a relational database. | <input checked="" type="radio"/> | <input type="radio"/>            |
| It reduces data duplication through normalization.                     | <input type="radio"/>            | <input checked="" type="radio"/> |
| It supports applications with a global user base.                      | <input checked="" type="radio"/> | <input type="radio"/>            |

## Explanation:

Azure Cosmos DB allows simpler queries to retrieve data than a relational database. Azure Cosmos DB is a NoSQL database that supports storing data in a denormalized way. Denormalization reduces the number of tables within a data model because all attributes from an entity are stored together rather than in different tables. With fewer tables, data read (or retrieval) queries become less complex due to the reduced table joins needed.

Azure Cosmos DB does not reduce data duplication through normalization. As a NoSQL database, Azure Cosmos DB supports the denormalization of data, which increases the need for data duplication but also reduces the complexity of the schema, and, therefore, the queries needed to manipulate it. Normalization is the process of reducing data duplication by creating additional reference tables, which are supported by relational databases.

Azure Cosmos DB supports applications with a global user base. Azure Cosmos DB supports multi-region writes, allowing users to work with a replicated set of data in their own region.

### Question 155

CertyIQ

You need to determine the most appropriate database tier for each of the use cases below.

To answer, drag the appropriate database to the use case. A database may be used once, more than once or not at all.

**Drag and drop the answers**

|                    |  |  |
|--------------------|--|--|
| Azure Cosmos DB    | A human resources system storing employee data on a fixed schema                         |  |
| Azure SQL Database | A social network storing interaction data in a complex structure that changes frequently |  |
|                    | A chemical plant storing vast amounts of data from various sensor arrays                 |  |

**Correct Answer: -**

|                    |  |                    |
|--------------------|--|--------------------|
| Azure Cosmos DB    | A human resources system storing employee data on a fixed schema                         | Azure SQL Database |
| Azure SQL Database | A social network storing interaction data in a complex structure that changes frequently | Azure Cosmos DB    |
|                    | A chemical plant storing vast amounts of data from various sensor arrays                 | Azure Cosmos DB    |

## Explanation:

Azure SQL database is appropriate for the human resources system. As Azure SQL database uses a fixed schema, meaning the data will not change over time, a relational database like Azure SQL is a good choice.

Azure Cosmos DB is appropriate for the social network. Representing complex relation structures between the entities is best stored in a NoSQL database, specifically in a graph database.

Azure Cosmos DB is appropriate for the chemical plant. Azure Cosmos DB is very low-latency and highly scalable, allowing it to ingest and process huge amounts of data. This makes it perfect for IoT (internet of things) scenarios like sensor data.

### Question 156

CertyIQ

A database administrator writes the following query for an Azure Cosmos DB environment.

```
> g.v().hasLabel('person').order().by('firstName', decr)
```

Which Azure Cosmos DB API does the query refer to?

Choose the correct answer

A. Gremlin API

B. Table API

C. Core API

D. Cassandra API

E. MongoDB API

## Explanation:

The query refers to the Gremlin API. Gremlin syntax includes functions to operate on nodes (instances of data entities) and edges (relationships between nodes), enabling users to navigate around the complex graph structure. The g. in the example query stands for graph. The example statement will retrieve person vertices in descending order of their first names.

The query does not refer to the Core API, also called SQL API. SQL syntax uses keywords in capital letters, spaces, and quotes for string values. An example would be as follows:

```
SELECT FirstName, LastName  
FROM PERSON  
WHERE IsChild = true
```

The above query would return the first and last name columns of all rows on the person table marked as children.

The query does not refer to the Table API. This API allows the manipulation of key/value pair data. An example query would be:

```
https://<mytableendpoint>/People (PartitionKey' Harp', Rowkey='Walter')
```

The above query would retrieve an entity from the People table, by filtering on the PartitionKey Harp and the Rowkey Walter.

The query does not refer to the Cassandra API. Query syntax for this API looks similar to that used for the Core API.

The query does not refer to the MongoDB API. This API uses an object-oriented syntax for queries. An example would be:

```
db.people.find({"isChild": true })
```

The above query would retrieve people that are children.

### Question 157

CertyIQ

You are evaluating use cases for Azure Synapse Analytics.

Which is the most appropriate use case for Azure Synapse Analytics?

Choose the correct answer

- A. To store massive amounts of unstructured data in a hierarchical structure.
- B. To serve as data storage for online transactional processing (OLTP) workloads.
- C. To create dashboards and data visualizations from tabular data.
- D. To perform very complex queries and aggregations on a large amount of relational data.**

## Explanation:

The most appropriate use case for Azure Synapse Analytics is to perform very complex queries and aggregations on a large amount of relational data. You can provision Synapse SQL pools to quickly execute complex queries across multiple computer nodes thanks to the Synapse SQL massively parallel processing (MPP) architecture.

The most appropriate use case for Azure Synapse Analytics is not to create dashboards and data visualizations from tabular data. You should use Power BI for that instead.

The most appropriate use case for Azure Synapse Analytics is not to store massive amounts of unstructured data in a hierarchical structure. You should use Azure Data Lake Storage for that instead.

The most appropriate use case for Azure Synapse Analytics is not to serve as data storage for online transactional processing (OLTP) workloads. You should instead use a relational database service like Azure SQL Database.

### Question 158

CertyIQ

To complete the sentence, select the appropriate option from the drop-down menu.

**Choose the correct options**

|                         |
|-------------------------|
| Select your answer ▼    |
| Azure Analysis Services |
| Azure Databricks        |
| Azure HDInsight         |

is a big data processing service which is used to provision and manage a cluster of open-source analytics solutions such as Apache Spark, Hadoop, and Kafka.

**Correct Answer: -**

|                         |
|-------------------------|
| Select your answer ▼    |
| Azure Analysis Services |
| Azure Databricks        |
| Azure HDInsight         |

is a big data processing service which is used to provision and manage a cluster of open-source analytics solutions such as Apache Spark, Hadoop, and Kafka.

### Explanation:

Azure HDInsight is a big data processing service which is used to provision and manage a cluster of open source analytics solutions such as Apache Spark, Hadoop, and Kafka.

Azure Databricks is a complete platform for big data processing, streaming, and machine learning, which is optimized for the Microsoft Azure cloud services platform and built on top of Apache Spark.

Azure Analysis Services is a service used to build multidimensional or tabular models used by online analytical processing (OLAP) queries. You can combine data from multiple sources, such as Azure Synapse Analytics, Azure Data Lake Store, Azure Cosmos DB, and others to build the tabular models.

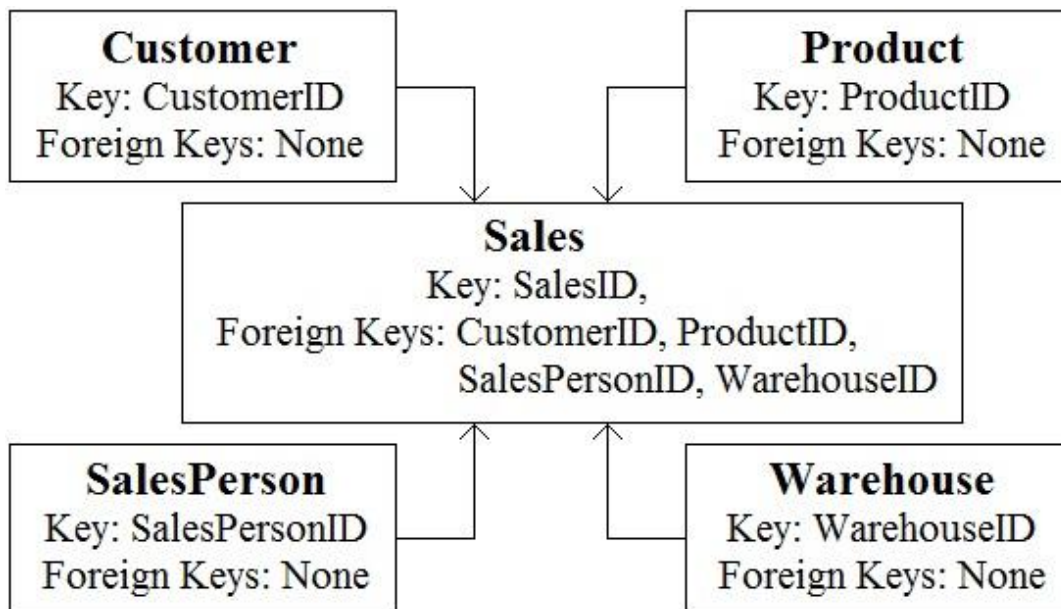
### Question 159

CertyIQ

HOTSPOT -

You are reviewing the data model shown in the following exhibit.





Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point

Hot Area:

### Answer Area

The data model is a [answer choice].

|                     |   |
|---------------------|---|
|                     | ▼ |
| transactional model |   |
| star schema         |   |
| snowflake schema    |   |

Customer is a [answer choice] table.

|           |   |
|-----------|---|
|           | ▼ |
| fact      |   |
| dimension |   |
| bridge    |   |

### Answer Area

The data model is a [answer choice].

|                     |   |
|---------------------|---|
|                     | ▼ |
| transactional model |   |
| star schema         |   |
| snowflake schema    |   |

Customer is a [answer choice] table.

|           |   |
|-----------|---|
|           | ▼ |
| fact      |   |
| dimension |   |
| bridge    |   |

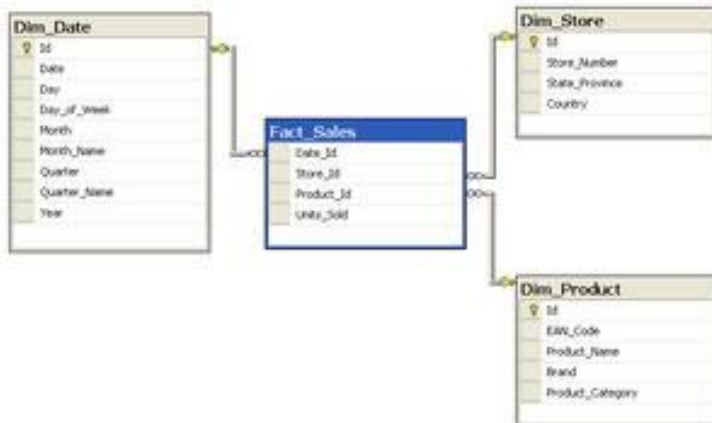
Correct Answer:

## Explanation:

### Box 1: star schema -

In computing, the star schema is the simplest style of data mart schema and is the approach most widely used to develop data warehouses and dimensional data marts. The star schema consists of one or more fact tables referencing any number of dimension tables. The star schema is an important special case of the snowflake schema, and is more effective for handling simpler queries.

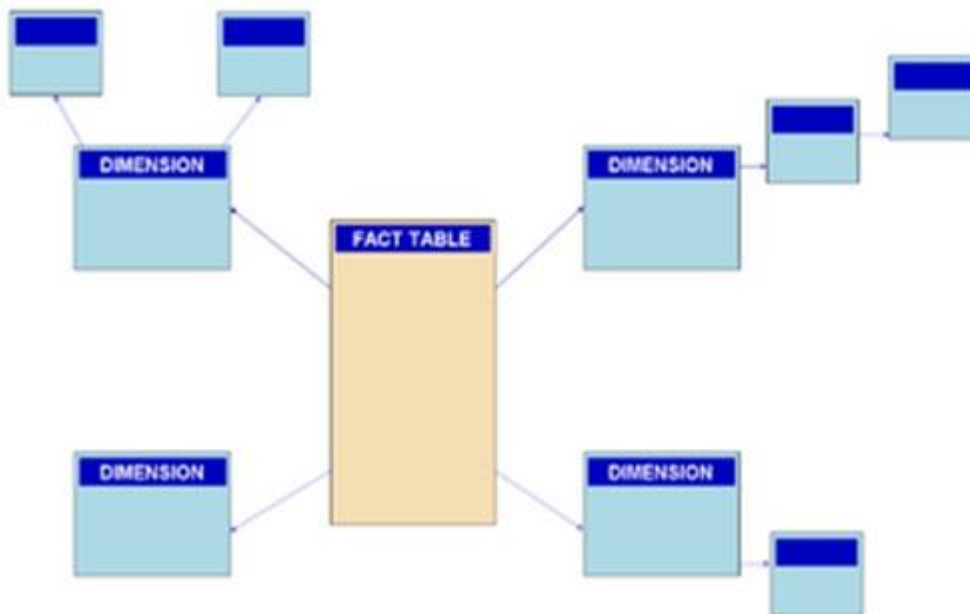
Example:



### Incorrect Answers:

The data in the question is not normalized.

The snowflake schema is a variation of the star schema, featuring normalization of dimension tables. Example:



Note: A snowflake schema is a logical arrangement of tables in a multidimensional database such that the entity relationship diagram resembles a snowflake shape. The snowflake schema is represented by centralized fact tables which are connected to multiple dimensions.[citation needed]. "Snowflaking" is a method of normalizing the dimension tables in a star schema. When it is completely normalized along all the dimension tables, the resultant structure resembles a snowflake with the fact table in the middle.

### Box 2: dimension -

The star schema consists of one or more fact tables referencing any number of dimension tables.

Reference:

<https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-tables-overview>

[https://en.wikipedia.org/wiki/Star\\_schema](https://en.wikipedia.org/wiki/Star_schema)

[https://en.wikipedia.org/wiki/Snowflake\\_schema](https://en.wikipedia.org/wiki/Snowflake_schema) <https://azure.microsoft.com/en-us/blog/data-models-within-azure-analysis-services-and-power-bi/>

**Question 160**

You need to evaluate which role each service performs in modern data warehousing.  
To answer, select the appropriate options from the drop-down menus.

**Choose the correct options**

Azure Data Factory

Select your answer

Ingest data from data sources  
Model and serve data  
Store raw data  
Visualize data

Azure Data Lake Storage

Select your answer

Ingest data from data sources  
Model and serve data  
Store raw data  
Visualize data

Azure Synapse Analytics

Select your answer

Ingest data from data sources  
Model and serve data  
Store raw data  
Visualize data

Power BI

Select your answer

Ingest data from data sources  
Model and serve data  
Store raw data  
Visualize data

**Correct Answers: -**

Azure Data Factory

Ingest data from data sources

Azure Data Lake Storage

Store raw data

Azure Synapse Analytics

Model and serve data

Power BI

Visualize data

## Explanation:

Azure Data Factory is used to ingest data from data sources. You can ingest data from both relational data and non-structured data from multiple sources with Azure Data Factory.

Azure Data Lake Storage is used to store raw data. You can store raw, unstructured data, such as text files, logs, and images, in order to allow these to be processed quickly at a later stage.

Azure Synapse Analytics is used to model and serve data. You can load relational data ingested from Azure Data Factory in Azure Synapse Analytics using Synapse SQL pool, and you can also read unstructured data stored in Azure Data Lake Storage using Polybase. Combining both relational and unstructured data, you can perform complex analytics and serve data for later stages.

Power BI is used to visualize data. You can build interactive reports and dashboards with Power BI, allowing business users to analyze this data and deliver insights throughout your organization.

### Question 161

CertyIQ

HOTSPOT -

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Hot Area:

| Statements  | Yes                   | No                    |
|---|-----------------------|-----------------------|
| Azure Data Lake Storage is built on top of Azure File storage.  | <input type="radio"/> | <input type="radio"/> |
| Azure Data Lake Storage is capable of storing a large amount of data in a cost-effective way.                 | <input type="radio"/> | <input type="radio"/> |
| Azure Data Lake Storage enables hierarchical namespace compatible with Hadoop Distributed File System (HDFS). | <input type="radio"/> | <input type="radio"/> |

Correct Answers: -

| Statements  | Yes                              | No                               |
|---|----------------------------------|----------------------------------|
| Azure Data Lake Storage is built on top of Azure File storage.  | <input type="radio"/>            | <input checked="" type="radio"/> |
| Azure Data Lake Storage is capable of storing a large amount of data in a cost-effective way.                 | <input checked="" type="radio"/> | <input type="radio"/>            |
| Azure Data Lake Storage enables hierarchical namespace compatible with Hadoop Distributed File System (HDFS). | <input checked="" type="radio"/> | <input type="radio"/>            |

## Explanation:

Azure Data Lake Storage is not built on top of Azure File storage. Azure Data Lake Storage Gen2 is built on top of Azure Blob storage, combining the features of the previous generation of Azure Data Lake Storage with Azure Blob storage.

Azure Data Lake Storage is capable of storing a large amount of data in a cost-effective way. Azure Data Lake Storage can store large amounts of data, such as hundreds of terabytes and more, and you only pay for what you use. You can reduce the storage cost even more by using features such as storage lifecycle to archive or move data that is not used frequently to cheaper storage tiers.

Azure Data Lake Storage enables hierarchical namespace compatible with Hadoop Distributed File System (HDFS). Azure Data Lake Storage provides a layer to access Azure Blob Storage data as an HDFS storage, including support to organize files in directories and subdirectories, allowing you to examine large quantities of data quickly.

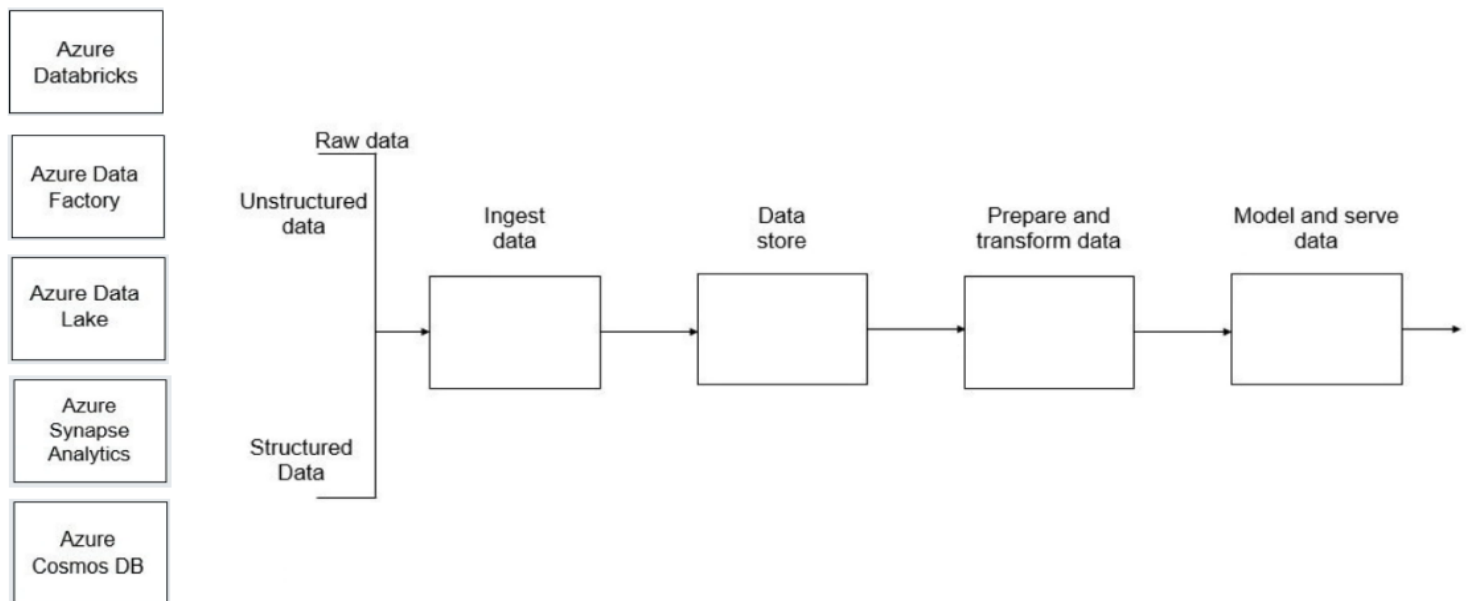
### Question 162

CertyIQ

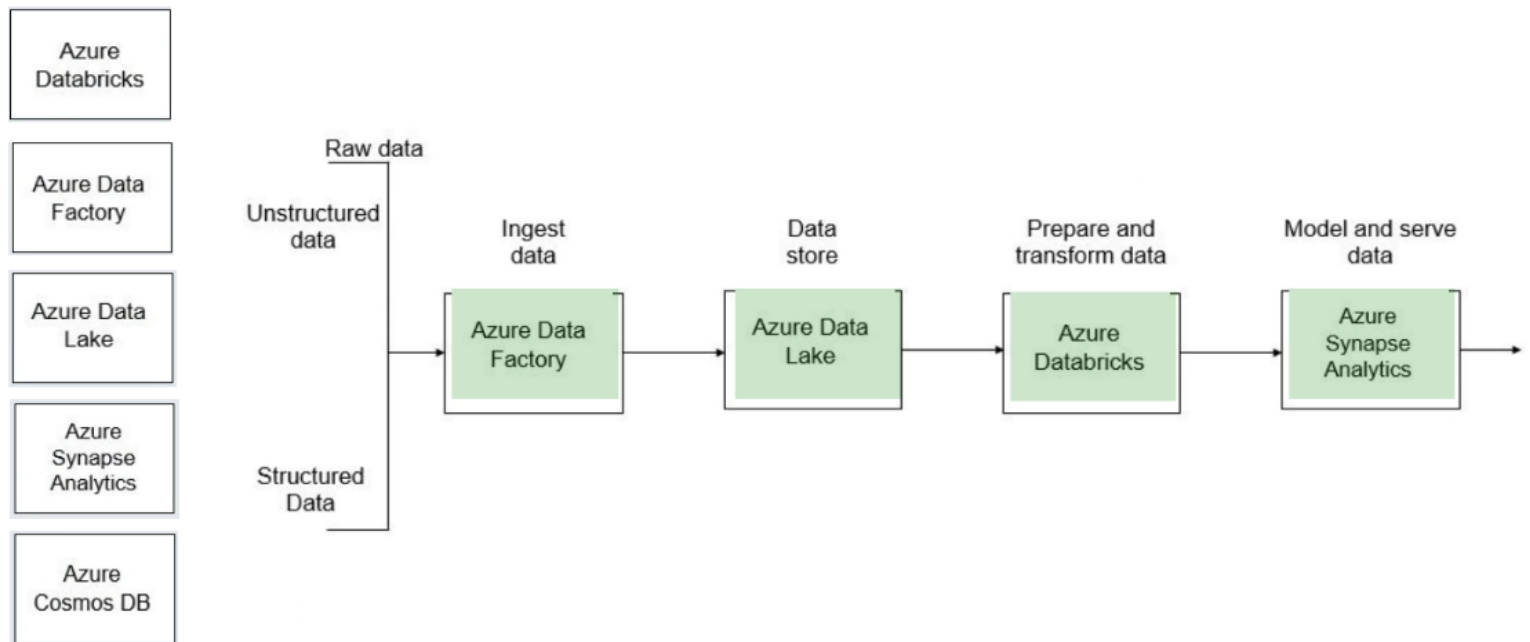
Match each Azure service with its role in a data warehouse architecture.

To answer, drag the appropriate Azure service to its place in the data warehouse diagram. An Azure Service may be used once, more than once, or not at all.

**Drag and drop the answers**



**Correct Answer: -**



## Explanation:

Data ingestion is the process of combining your structured, semi-structured, and unstructured data into a common data store. Azure Data Factory is specifically designed to provide end-to-end support for extract transform-load (ETL) operations for data warehouse data load. Often, moving data into a data warehouse requires more aggressive cleaning and transformation than is supported through Data Factory.

The consolidated data is stored in Azure Blob storage through Azure Data Lake Storage. This gives you a flexible storage environment to give access to Azure Databricks for more intensive data analytics to prepare cleaned and transformed data.

Native connectors let you move data at scale from Azure Databricks to Azure Synapse Analytics, which acts as a single hub for your structured data. From here, the data is available for detailed analysis and reporting, including using Azure Analysis Services to give end-users access to the data.

Azure Cosmos DB is not part of the Azure data warehouse infrastructure as a non-relational data store.

### Question 163

CertyIQ

HOTSPOT -

You need to evaluate Azure Data Factory.

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Hot Area:



| Statements  | Yes                   | No                    |
|---|-----------------------|-----------------------|
| Azure Data Factory can have multiple pipelines.     | <input type="radio"/> | <input type="radio"/> |
| Pipeline can have multiple activities.              | <input type="radio"/> | <input type="radio"/> |
| Activities in a pipeline can only run sequentially. | <input type="radio"/> | <input type="radio"/> |

**Correct Answer: -**

| Statements  | Yes                              | No                               |
|---|----------------------------------|----------------------------------|
| Azure Data Factory can have multiple pipelines.     | <input checked="" type="radio"/> | <input type="radio"/>            |
| Pipeline can have multiple activities.              | <input checked="" type="radio"/> | <input type="radio"/>            |
| Activities in a pipeline can only run sequentially. | <input type="radio"/>            | <input checked="" type="radio"/> |

## Explanation:

Azure Data Factory can have multiple pipelines. Azure Data Factory allows you to create multiple data pipelines.

Pipeline is a logical grouping of activities that performs a task. You can have multiple activities in a pipeline.

Activities in a pipeline can either run sequentially or operate in parallel. An activity represents a step in a pipeline.

### Question 164

CertyIQ

HOTSPOT -  
You have the following JSON document.

```

"customer" : {
  "first name" : "Ben",
  "last name" : "Smith",
  "address" : {
    "line 1" : "161 Azure Ln",
    "line 2" : "Palo Alto",
    "ZIP code" : "54762"
  },
  "social media": [
    {
      "service" : "twitter",
      "handle" : "@bensmith"
    },
    {
      "service" : "linkedin",
      "handle" : "bensmith"
    }
  ],
  "phone numbers": [
    {
      "type" : "mobile",
      "number" : "555-555-555"
    }
  ]
}

```

Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the JSON document.

NOTE: Each correct selection is worth one point.

Hot Area:

Customer is [answer choice].

|                 |   |
|-----------------|---|
|                 | ▼ |
| a nested array  |   |
| a nested object |   |
| a root object   |   |

Address is [answer choice].

|                 |   |
|-----------------|---|
|                 | ▼ |
| a nested array  |   |
| a nested object |   |
| a root object   |   |

Social media is [answer choice].

|                 |   |
|-----------------|---|
|                 | ▼ |
| a nested array  |   |
| a nested object |   |
| a root object   |   |



## Answer Area

Correct Answer:

Customer is [answer choice].

|                 |   |
|-----------------|---|
|                 | ▼ |
| a nested array  |   |
| a nested object |   |
| a root object   |   |

Address is [answer choice].

|                 |   |
|-----------------|---|
|                 | ▼ |
| a nested array  |   |
| a nested object |   |
| a root object   |   |

Social media is [answer choice].

|                 |   |
|-----------------|---|
|                 | ▼ |
| a nested array  |   |
| a nested object |   |
| a root object   |   |

## Explanation:

SocialMedia is an Array object, as someone underline due to [ ], references:

<https://docs.microsoft.com/en-us/answers/questions/200268/adf-reading-array-of-objects-in-data-flow.html>

<https://docs.microsoft.com/en-us/azure/data-factory/format-json>

# End of Part 4



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