

 Custom View Settings**Topic 1 - Single Topic****Question #1***Topic 1***HOTSPOT -**

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

**Answer Area**

Descriptive analytics tells you

what is most likely to occur in the future.
what occurred in the past.
which actions you can perform to affect outcomes.
why something occurred in the past.

**Answer Area**

Descriptive analytics tells you

**Correct Answer:**

what is most likely to occur in the future.
what occurred in the past.
which actions you can perform to affect outcomes.
why something occurred in the past.

Reference:

<https://demand-planning.com/2020/01/20/the-differences-between-descriptive-diagnostic-predictive-cognitive-analytics/>

**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:

**Answer Area**

Statements	Yes	No
------------	-----	----

Normalization involves eliminating relationships between database tables.

Normalizing a database reduces data redundancy.

Normalization improves data integrity.

**Answer Area**

Statements	Yes	No
------------	-----	----

**Correct Answer:**

Normalization involves eliminating relationships between database tables.

Normalizing a database reduces data redundancy.

Normalization improves data integrity.

Reference:

<https://www.sqlshack.com/what-is-database-normalization-in-sql-server/>

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

### Answer Area

An extract, transform, and load (ETL) process  
requires

- a matching schema in the data source and the data target.
- a target data store powerful enough to transform data.
- data that is fully processed before being loaded to the target data store.
- that the data target be a relational database.

Correct Answer:

### Answer Area

An extract, transform, and load (ETL) process  
requires

- a matching schema in the data source and the data target.
- a target data store powerful enough to transform data.
- data that is fully processed before being loaded to the target data store.
- that the data target be a relational database.

Extract, transform, and load (ETL) is a data pipeline used to collect data from various sources, transform the data according to business rules, and load it into a destination data store.

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/data-guide/relational-data/etl>

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

### Answer Area

In batch processing,

▼
data is always inserted one row at a time.
data is processed in real-time.
latency in delivering data processing results is acceptable.
processing can only execute serially.

### Answer Area

Correct Answer: In batch processing,

▼
data is always inserted one row at a time.
data is processed in real-time.
latency in delivering data processing results is acceptable.
processing can only execute serially.

When to use batch processing.

You might expect latencies when using batch processing. For many situations, however, this type of delay before the transfer of data begins is not a big issue - the processes that use this function are not mission critical at the exact moment.

Reference:

<https://www.bmc.com/blogs/what-is-batch-processing-batch-processing-explained/>

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

### Answer Area

Transcribing audio files is an example of  analytics.

cognitive
descriptive
predictive
prescriptive

### Answer Area

Transcribing audio files is an example of  analytics.

Correct Answer:

cognitive
descriptive
predictive
prescriptive

Reference:

<https://azure.microsoft.com/en-us/services/cognitive-services/speech-services/>

**DRAG DROP -**

Match the types of analytics that can be used to answer the business questions.

To answer, drag the appropriate analytics type from the column on the left to its question on the right. Each analytics type may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

<b>Analytics Types</b>	<b>Answer Area</b>
Cognitive	
Diagnostic	
Descriptive	
Predictive	
Prescriptive	

Why did sales increase last month?  
How do I allocate my budget to buy different inventory items?  
Which people are mentioned in a company's business documents?

**Correct Answer: Incorrect Answer:**

Box 1: Diagnostic -

Diagnostic Analytics: At this stage you can begin to answer some of those why questions. Historical data can begin to be measured against other data to answer the question of why something happened in the past. This is the process of gathering and interpreting different data sets to identify anomalies, detect patterns, and determine relationships.

Box 2: Prescriptive -

Prescriptive analytics is a combination of data, mathematical models, and various business rules to infer actions to influence future desired outcomes.

Predictive analytics, broadly speaking, is a category of business intelligence that uses descriptive and predictive variables from the past to analyze and identify the likelihood of an unknown future outcome

Box 3: Descriptive -

- ⇒ Generally speaking, data analytics comes in four types:
- ⇒ Descriptive, to answer the question: What's happening?
- ⇒ Diagnostic, to answer the question: Why's happening?
- ⇒ Predictive, to answer the question: What will happen?
- ⇒ Prescriptive, to answer the question: What actions should we take?



Reference:

<https://demand-planning.com/2020/01/20/the-differences-between-descriptive-diagnostic-predictive-cognitive-analytics/>

<https://azure.microsoft.com/en-us/blog/answering-whats-happening-whys-happening-and-what-will-happen-with-iot-analytics/>

**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:

**Answer 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

Customer is [answer choice].

- a nested array
- a nested object
- a root object

Correct Answer:  
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

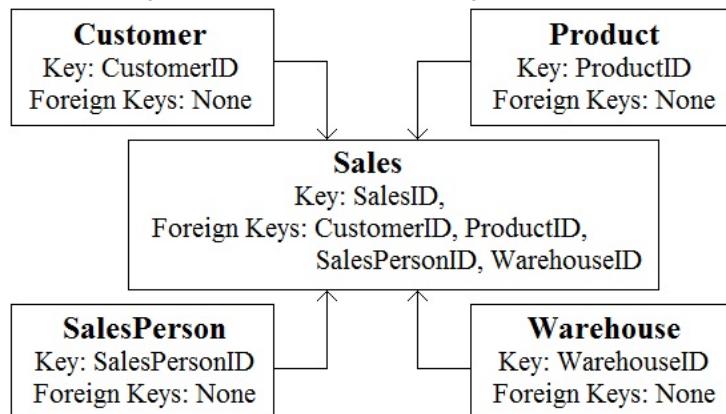
Reference:

[https://www.w3schools.com/js/js\\_json\\_arrays.asp](https://www.w3schools.com/js/js_json_arrays.asp)

[https://www.w3schools.com/js/js\\_json\\_objects.asp](https://www.w3schools.com/js/js_json_objects.asp)

**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

Correct Answer:

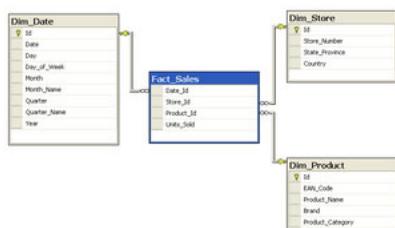
Customer is a [answer choice] table.

fact
dimension
bridge

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.

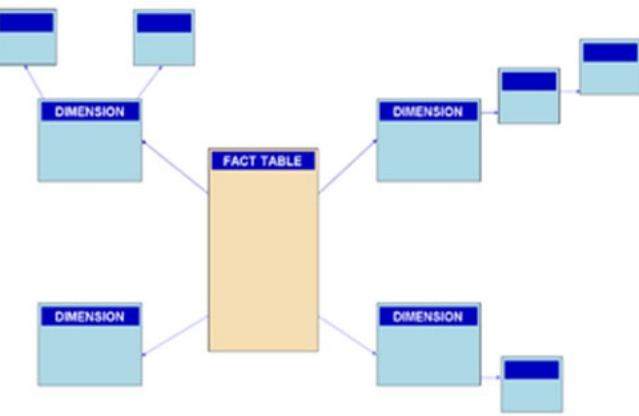
Example:



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 #9

Topic 1

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

### Answer Area

The massively parallel processing (MPP) engine of Azure  
Synapse Analytics

- |  |
|--|
| distributes processing across compute nodes.       |
| distributes processing across control nodes.       |
| redirects client connections across compute nodes. |
| redirects client connections across control nodes. |

### Answer Area

The massively parallel processing (MPP) engine of Azure  
Synapse Analytics

Correct Answer:

- |  |
|--|
| distributes processing across compute nodes.       |
| distributes processing across control nodes.       |
| redirects client connections across compute nodes. |
| redirects client connections across control nodes. |

Reference:

<https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/massively-parallel-processing-mpp-architecture>

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

**Answer Area**

A clustered index
A FileTable
A foreign key
A stored procedure

is an object associated with a table that sorts and stores the data rows in the table based on their key values.

**Answer Area**

Correct Answer:

A clustered index
A FileTable
A foreign key
A stored procedure

is an object associated with a table that sorts and stores the data rows in the table based on their key values.

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/indexes/clustered-and-nonclustered-indexes-described?view=sql-server-ver15>

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

### Answer Area

A relational database is appropriate for scenarios that involve a high volume of

changes to relationships between entities
geographically distributed writes
transactional writes
writes that have varying data structures

Correct Answer:

### Answer Area

A relational database is appropriate for scenarios that involve a high volume of

changes to relationships between entities
geographically distributed writes
transactional writes
writes that have varying data structures

Disadvantages of non-relational databases include: Data Consistency ↗ non-relational databases do not perform ACID transactions.

Note: Relational databases are optimized for writes. They are optimized for consistency and availability. Advantages of relational databases include simplicity, ease of data retrieval, data integrity, and flexibility.

Incorrect Answers:

Use a relational database when data that you work with is structured, and the structure is not subject to frequent changes.

Use Cloud storage (no relational database) for geographically distributed writes.

Reference:

<https://towardsdatascience.com/choosing-the-right-database-c45cd3a28f77>

**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:

**Answer Area**

Statements	Yes	No
Batch processing can output data to a file store	<input type="radio"/>	<input type="radio"/>
Batch processing can output data to a relational database	<input type="radio"/>	<input type="radio"/>
Batch processing can output data to a NoSQL database	<input type="radio"/>	<input type="radio"/>

Correct Answer:

**Answer Area**

Statements	Yes	No
Batch processing can output data to a file store	<input checked="" type="radio"/>	<input type="radio"/>
Batch processing can output data to a relational database	<input type="radio"/>	<input checked="" type="radio"/>
Batch processing can output data to a NoSQL database	<input type="radio"/>	<input checked="" type="radio"/>

Box 1: Yes -

Big data solutions often use long-running batch jobs to filter, aggregate, and otherwise prepare the data for analysis. Usually these jobs involve reading source files from scalable storage (like HDFS, Azure Data Lake Store, and Azure Storage), processing them, and writing the output to new files in scalable storage.

Box 2: No -

Box 3: No -

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/data-guide/big-data/batch-processing>

**DRAG DROP -**

Your company plans to load data from a customer relationship management (CRM) system to a data warehouse by using an extract, load, and transform (ELT) process.

Where does data processing occur for each stage of the ELT process? To answer, drag the appropriate locations to the correct stages. Each location may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.

Select and Place:

<b>Locations</b>	<b>Answer Area</b>
An in-memory data integration tool	Extract: <span style="border: 1px solid black; padding: 5px;">Location</span>
The CRM system	Load: <span style="border: 1px solid black; padding: 5px;">Location</span>
The data warehouse	Transform: <span style="border: 1px solid black; padding: 5px;">Location</span>

**Correct Answer:**

<b>Locations</b>	<b>Answer Area</b>
An in-memory data integration tool	Extract: <span style="border: 1px solid black; padding: 5px;">The CRM system</span>
The CRM system	Load: <span style="border: 1px solid black; padding: 5px;">The data warehouse</span>
The data warehouse	Transform: <span style="border: 1px solid black; padding: 5px;">An in-memory data integration tool</span>

Box 1: The CRM system -

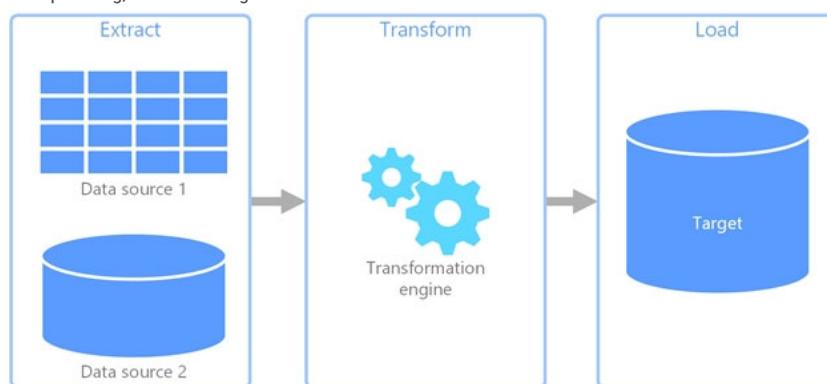
Data is extracted from the CRM system.

Box 2: The data warehouse -

Data is loaded to the data warehouse.

Box 3: An in-memory data integration tool

The data transformation that takes place usually involves various operations, such as filtering, sorting, aggregating, joining data, cleaning data, deduplicating, and validating data.



Reference:

<https://docs.microsoft.com/en-us/azure/architecture/data-guide/relational-data/etl>

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

### Answer Area

A visualization that shows a university's current student enrollment versus the maximum capacity is an example of

cognitive
descriptive
predictive
prescriptive

Correct Answer:

### Answer Area

A visualization that shows a university's current student enrollment versus the maximum capacity is an example of

cognitive
descriptive
predictive
prescriptive

Generally speaking, data analytics comes in four types (Figure 1):

Descriptive, to answer the question: What's happening?

Diagnostic, to answer the question: Why's happening?

Predictive, to answer the question: What will happen?

Prescriptive, to answer the question: What actions should we take?

Reference:

<https://azure.microsoft.com/en-us/blog/answering-whats-happening-whys-happening-and-what-will-happen-with-iot-analytics/>

**DRAG DROP -**

Match the types of visualizations to the appropriate descriptions.

To answer, drag the appropriate visualization type from the column on the left to its description on the right. Each visualization type may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

Visualizations	Answer Area
Key influencer	Visualization
Scatter	Visualization
Treemap	Visualization

A chart of colored, nested rectangles that displays individual data points represented by the size and color of a relative rectangle.

A chart that displays the major contributors of a selected result or value.

A chart that shows the relationship between two numerical values.

**Correct Answer:**

Visualizations	Answer Area
Key influencer	Treemap
Scatter	Key influencer
Treemap	Scatter

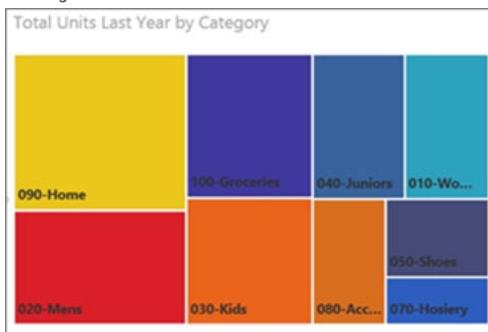
A chart of colored, nested rectangles that displays individual data points represented by the size and color of a relative rectangle.

A chart that displays the major contributors of a selected result or value.

A chart that shows the relationship between two numerical values.

**Box 1: Tree map -**

Treemaps are charts of colored rectangles, with size representing value. They can be hierarchical, with rectangles nested within the main rectangles.

**Box 2: Key influencer -**

A key influencer chart displays the major contributors to a selected result or value.

**Box 3: Scatter -**

Scatter and Bubble charts display relationships between 2 (scatter) or 3 (bubble) quantitative measures -- whether or not, in which order, etc.

You need to create an Azure Storage account.

Data in the account must replicate outside the Azure region automatically.

Which two types of replication can you use for the storage account? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. zone-redundant storage (ZRS)
- B. read-access geo-redundant storage (RA-GRS)
- C. locally-redundant storage (LRS)
- D. geo-redundant storage (GRS)

**Correct Answer:** BD

D: Azure Storage offers two options for copying your data to a secondary region:

- ⇒ Geo-redundant storage (GRS)
- ⇒ Geo-zone-redundant storage (GZRS)

B: With GRS or GZRS, the data in the secondary region isn't available for read or write access unless there is a failover to the secondary region.

For read access to the secondary region, configure your storage account to use read-access geo-redundant storage (RA-GRS) or read-access geo-zone-redundant storage (RA-GZRS).

Reference:

<https://docs.microsoft.com/en-us/azure/storage/common/storage-redundancy#redundancy-in-a-secondary-region>

*Community vote distribution*

BD (100%)

**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:

**Answer Area**

Statements	Yes	No
Platform as a service (PaaS) database offerings in Azure require less setup and configuration effort than infrastructure as a service (IaaS) database offerings.	<input type="radio"/>	<input type="radio"/>
Platform as a service (PaaS) database offerings in Azure provide end users with the ability to control and update the operating system version.	<input type="radio"/>	<input type="radio"/>
All relation and non-relational platform as a service (PaaS) database offerings in Azure can be paused to reduce costs.	<input type="radio"/>	<input type="radio"/>

Correct Answer:

**Answer Area**

Statements	Yes	No
Platform as a service (PaaS) database offerings in Azure require less setup and configuration effort than infrastructure as a service (IaaS) database offerings.	<input checked="" type="radio"/>	<input type="radio"/>
Platform as a service (PaaS) database offerings in Azure provide end users with the ability to control and update the operating system version.	<input type="radio"/>	<input checked="" type="radio"/>
All relation and non-relational platform as a service (PaaS) database offerings in Azure can be paused to reduce costs.	<input type="radio"/>	<input checked="" type="radio"/>

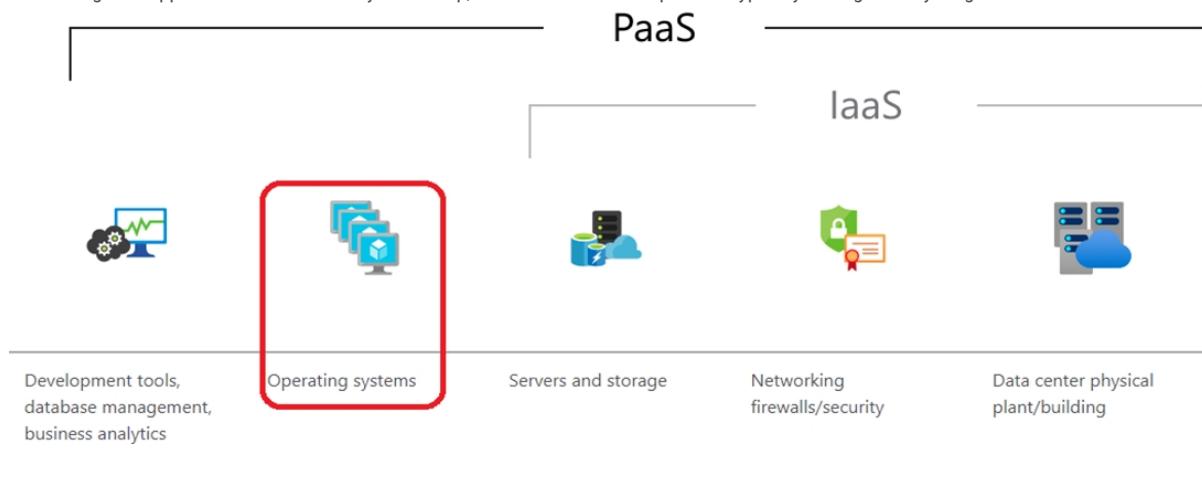
Box 1: Yes -

Like IaaS, PaaS includes infrastructure – servers, storage, and networking – but also middleware, development tools, business intelligence (BI) services, database management systems, and more. PaaS is designed to support the complete web application lifecycle: building, testing, deploying, managing, and updating.

PaaS allows you to avoid the expense and complexity of buying and managing software licenses, the underlying application infrastructure and middleware, container orchestrators such as Kubernetes, or the development tools and other resources

Box 2: No -

You manage the applications and services you develop, and the cloud service provider typically manages everything else.



Box 3: No -

There really is no way to pause / stop billing for your Azure SQL Database.

Microsoft's official answer "Yes, you can export your database. Delete the Azure SQL database and that will pause billing. Then when you need it you can create a new database and import your previously exported DB."

Reference:

<https://azure.microsoft.com/en-us/overview/what-is-paas>

Question #18

Topic 1

Which statement is an example of Data Manipulation Language (DML)?

- A. REVOKE
- B. DISABLE
- C. INSERT
- D. GRANT

**Correct Answer: C**

Data Manipulation Language (DML) affect the information stored in the database. Use these statements to insert, update, and change the rows in the database.

BULK INSERT -

- 
- ⇒ DELETE
- ⇒ INSERT
- ⇒ SELECT
- ⇒ UPDATE
- ⇒ MERGE

Reference:

<https://docs.microsoft.com/en-us/sql/t-sql/statements/statements>

*Community vote distribution*

C (100%)

Question #19

Topic 1

You have a SQL query that combines customer data and order data. The query includes calculated columns.

You need to create a database object that would allow other users to rerun the same SQL query.

What should you create?

- A. an index
- B. a view
- C. a scalar function
- D. a table

**Correct Answer: B**

A view is a virtual table whose contents are defined by a query. A view acts as a filter on the underlying tables referenced in the view. The query that defines the view can be from one or more tables or from other views in the current or other databases.

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/views/views>

*Community vote distribution*

B (100%)

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

### Answer Area

A key/value data store is optimized for

enforcing constraints
simple lookups
table joins
transactions

### Answer Area

Correct Answer:

A key/value data store is optimized for

enforcing constraints
simple lookups
table joins
transactions

Box 1: simple lookups -

A key/value store associates each data value with a unique key. Most key/value stores only support simple query, insert, and delete operations.

To modify a value

(either partially or completely), an application must overwrite the existing data for the entire value. In most implementations, reading or writing a single value is an atomic operation.

An application can store arbitrary data as a set of values. Any schema information must be provided by the application. The key/value store simply retrieves or stores the value by key.

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/guide/technology-choices/data-store-overview>

**DRAG DROP -**

Match the types of data to the appropriate Azure data services.

To answer, drag the appropriate data type from the column on the left to its service on the right. Each data type may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

<b>Data Types</b>	<b>Answer Area</b>	
Image files		Azure Blob storage
Key/value pairs		Azure Cosmos DB Gremlin API
Relationships between employees		Azure Table storage

**Correct Answer:**

<b>Data Types</b>	<b>Answer Area</b>	
Image files		Azure Blob storage
Key/value pairs		Azure Cosmos DB Gremlin API
Relationships between employees		Azure Table storage

Box 1: Image files -

Azure Blob storage is suitable for image files.

Box 2: Key/value pairs -

Azure CosmosDB table API is a key-value storage hosted in the cloud.

Box 3: Relationship between employees

One-to-many relationships between business domain objects occur frequently: for example, one department has many employees. There are several ways to implement one-to-many relationships in the Azure Table service.

Reference:

<https://docs.microsoft.com/en-us/azure/storage/tables/table-storage-design-modeling>

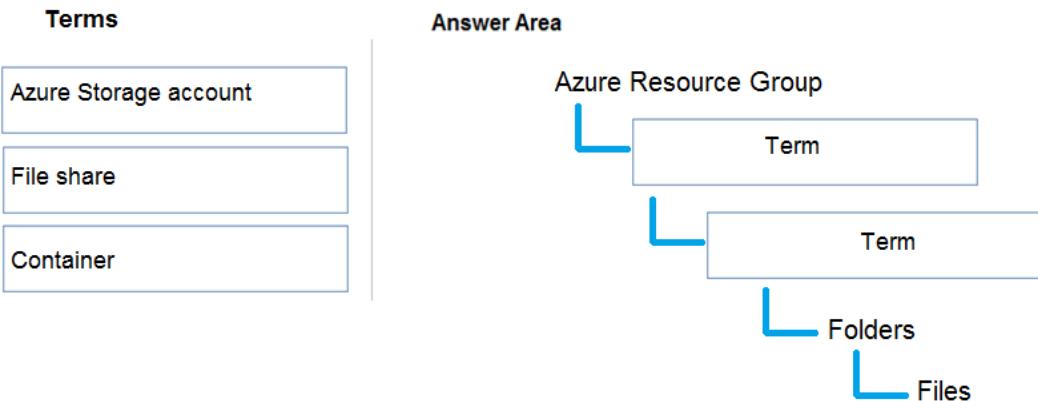
**DRAG DROP -**

Match the Azure Data Lake Storage Gen2 terms to the appropriate levels in the hierarchy.

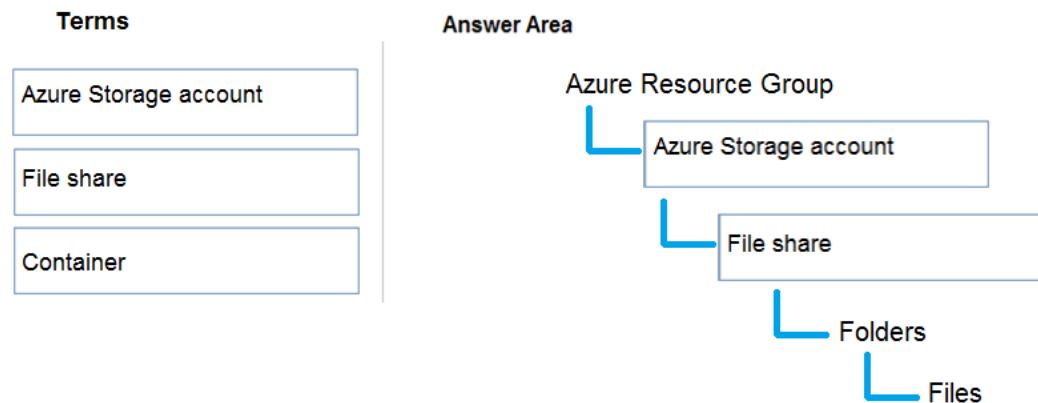
To answer, drag the appropriate term from the column on the left to its level on the right. Each term may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:



**Correct Answer:**



Box 1: Azure Storage account -

Azure file shares are deployed into storage accounts, which are top-level objects that represent a shared pool of storage.

Box 2: File share -

Reference:

<https://docs.microsoft.com/en-us/azure/storage/files/storage-how-to-create-file-share>

What are two characteristics of real-time data processing? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. Data is processed periodically
- B. Low latency is expected
- C. High latency is acceptable
- D. Data is processed as it is created

**Correct Answer:** BD

Real time processing deals with streams of data that are captured in real-time and processed with minimal latency to generate real-time (or near-real-time) reports or automated responses.

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/data-guide/big-data/real-time-processing>

*Community vote distribution*

BD (100%)

**DRAG DROP -**

Match the Azure Data Factory components to the appropriate descriptions.

To answer, drag the appropriate component from the column on the left to its description on the right. Each component may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

Components	Answer Area	
Dataset	Component	A representation of data structures within data stores
Linked service	Component	The information used to connect to external resources
Mapping data flow	Component	
Pipeline	Component	A logical grouping of activities that performs a unit of work and can be scheduled

**Correct Answer:**

Components	Answer Area	
Dataset	Dataset	A representation of data structures within data stores
Linked service	Linked service	The information used to connect to external resources
Mapping data flow		
Pipeline	Pipeline	A logical grouping of activities that performs a unit of work and can be scheduled

**Box 1: Dataset -**

Datasets must be created from paths in Azure datastores or public web URLs, for the data to be accessible by Azure Machine Learning.

**Box 2: Linked service -**

Linked services are much like connection strings, which define the connection information needed for Data Factory to connect to external resources.

**Box 3: Pipeline -**

A pipeline is a logical grouping of activities that together perform a task.

**Reference:**

<https://k21academy.com/microsoft-azure/dp-100/datastores-and-datasets-in-azure/> <https://docs.microsoft.com/en-us/azure/data-factory/concepts-linked-services> <https://docs.microsoft.com/en-us/azure/data-factory/concepts-pipelines-activities>

**DRAG DROP -**

Match the types of workloads to the appropriate scenarios.

To answer, drag the appropriate workload type from the column on the left to its scenario on the right. Each workload type may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

Workload Types	Answer Area
Batch	Workload type Data for a product catalog will be loaded every 12 hours to a data warehouse.
Streaming	Workload type Thousands of data sets per second for online purchases will be loaded into a data warehouse in real time
	Workload type Updates to inventory data will be loaded to a data warehouse every 1 million transactions.

**Correct Answer:**

Workload Types	Answer Area
Batch	Batch Data for a product catalog will be loaded every 12 hours to a data warehouse.
Streaming	Streaming Thousands of data sets per second for online purchases will be loaded into a data warehouse in real time
	Batch Updates to inventory data will be loaded to a data warehouse every 1 million transactions.

**Box 1: Batch -**

Batch processing refers to the processing of blocks of data that have already been stored over a period of time.

**Box 2: Streaming -**

Stream processing is a big data technology that allows us to process data in real-time as they arrive and detect conditions within a small period of time from the point of receiving the data. It allows us to feed data into analytics tools as soon as they get generated and get instant analytics results.

**Box 3: Batch -**

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/data-guide/technology-choices/batch-processing>

**DRAG DROP -**

Your company plans to load data from a customer relationship management (CRM) system to a data warehouse by using an extract, load, and transform (ELT) process.

Where does data processing occur for each stage of the ELT process? To answer, drag the appropriate locations to the correct stages. Each location may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.

Select and Place:

**Locations****Answer Area** A standalone data analysis tool**Extract:** The CRM system**Load:** The data warehouse**Transform:**

Correct Answer:

**Locations****Answer Area** Extract: The CRM system Load: The data warehouse Transform: A standalone data analysis tool

Box 1: The CRM system -

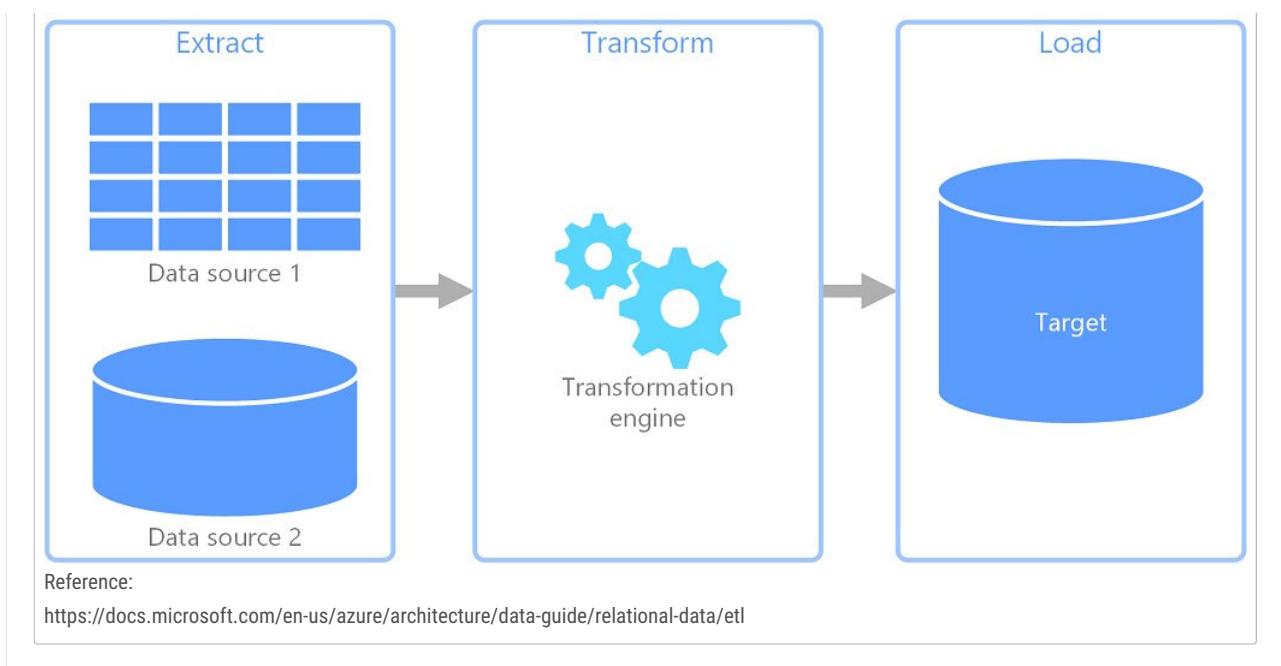
Data is extracted from the CRM system.

Box 2: The data warehouse -

Data is loaded to the data warehouse.

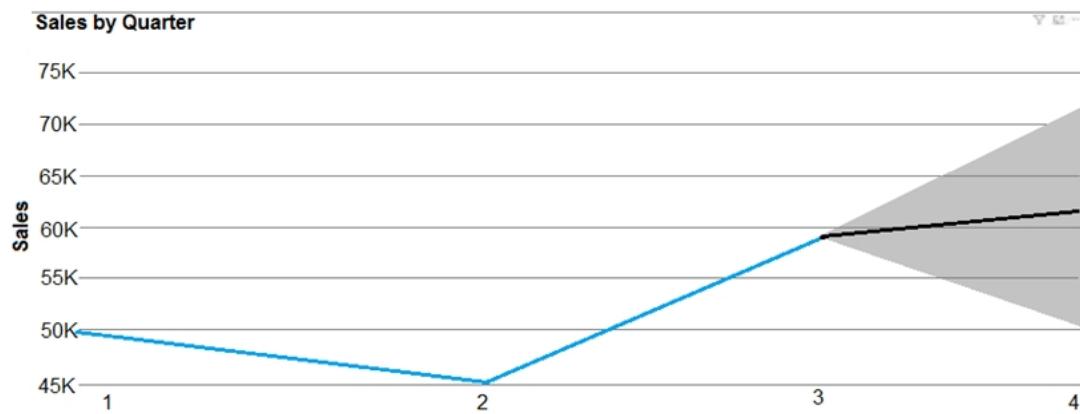
Box 3: A standalone data analysis tool

The data transformation that takes place usually involves various operations, such as filtering, sorting, aggregating, joining data, cleaning data, deduplicating, and validating data.



Your company recently reported sales from the third quarter.

You have the chart shown in the following exhibit.



Which type of analysis is shown in the fourth quarter?

- A. predictive
- B. prescriptive
- C. descriptive
- D. diagnostic

**Correct Answer: A**

Predictive, to answer the question: What will happen?



Reference:

<https://demand-planning.com/2020/01/20/the-differences-between-descriptive-diagnostic-predictive-cognitive-analytics/>

<https://azure.microsoft.com/en-us/blog/answering-whats-happening-whys-happening-and-what-will-happen-with-iot-analytics/>

*Community vote distribution*

A (100%)

Which statement is an example of Data Manipulation Language (DML)?

- A. REVOKE
- B. DISABLE
- C. CREATE
- D. UPDATE

**Correct Answer:** D

Data Manipulation Language (DML) affect the information stored in the database. Use these statements to insert, update, and change the rows in the database.

BULK INSERT -

DELETE -

INSERT -

SELECT -

UPDATE -

MERGE -

Reference:

<https://docs.microsoft.com/en-us/sql/t-sql/statements/statements>

*Community vote distribution*

D (100%)

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

## Answer Area

Creating closed caption text for audio files is an example of

cognitive
descriptive
predictive
prescriptive

analytics.

Correct Answer:

## Answer Area

Creating closed caption text for audio files is an example of

cognitive
descriptive
predictive
prescriptive

analytics.

Descriptive, to answer the question: What's happening?



Note: Azure Media Indexer enables you to make content of your media files searchable and to generate a full-text transcript for closed captioning and keywords.

You can process one media file or multiple media files in a batch.

Reference:

<https://demand-planning.com/2020/01/20/the-differences-between-descriptive-diagnostic-predictive-cognitive-analytics/>

<https://azure.microsoft.com/en-us/blog/answering-whats-happening-whys-happening-and-what-will-happen-with-iot-analytics/>

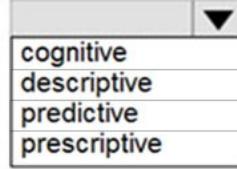
<https://docs.microsoft.com/en-us/azure/media-services/previous/media-services-index-content>

**HOTSPOT -**

To complete the sentence, select the appropriate option in the answer area.

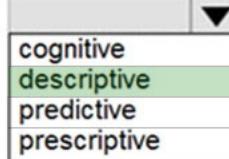
Hot Area:

**Answer Area**

A visualization that illustrates a university's current student enrollment per department is an example of  analytics.

cognitive
descriptive
predictive
prescriptive

**Answer Area**

Correct Answer: A visualization that illustrates a university's current student enrollment per department is an example of  analytics.

cognitive
descriptive
predictive
prescriptive

Generally speaking, data analytics comes in four types:

1. Descriptive, to answer the question: What's happening?
2. Diagnostic, to answer the question: Why's happening?
3. Predictive, to answer the question: What will happen?
4. Prescriptive, to answer the question: What actions should we take?



Descriptive  
*What's happening?*



Diagnostic  
*Why's happening?*



Predictive  
*What will happen?*



Prescriptive  
*What actions should we take?*

Reference:

<https://azure.microsoft.com/en-us/blog/answering-whats-happening-whys-happening-and-what-will-happen-with-iot-analytics/>

**HOTSPOT -**

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

**Answer Area**

An extract, load, and transform (ELT) process requires

- |  |
|--|
| a separate transformation engine.  |
| a target data store powerful enough to transform data.                     |
| data that is fully processed before being loaded to the target data store. |
| a data pipeline that includes a transformation engine.                     |

**Correct Answer:****Answer Area**

An extract, load, and transform (ELT) process requires

- |  |
|--|
| a separate transformation engine.  |
| a target data store powerful enough to transform data.                     |
| data that is fully processed before being loaded to the target data store. |
| a data pipeline that includes a transformation engine.                     |

With ELT, the data store used to perform the transformation is the same data store where the data is ultimately consumed.

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/data-guide/relational-data/elt>

You need to create an Azure resource to store data in Azure Table storage.

Which command should you run?

- A. az storage share create
- B. az storage account create
- C. az cosmosdb create
- D. az storage container create

**Correct Answer: D**

Reference:

<https://docs.microsoft.com/en-us/cli/azure/storage/container?view=azure-cli-latest>

*Community vote distribution*

B (91%)

9%

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

### Answer Area

The Azure Cosmos DB API enables the use of SELECT statements to

- Core (SQL)
- Gremlin
- MongoDB
- Table

retrieve documents from Azure Cosmos DB.

Correct Answer:

### Answer Area

The Azure Cosmos DB API enables the use of SELECT statements to

- Core (SQL)
- Gremlin
- MongoDB
- Table

retrieve documents from Azure Cosmos DB.

Azure Cosmos DB SQL API accounts provide support for querying items using the Structured Query Language (SQL) syntax.

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/choose-api>

You need to modify a view in a relational database by adding a new column.

Which statement should you use?

- A. MERGE
- B. ALTER
- C. INSERT
- D. UPDATE

Correct Answer: B

*Community vote distribution*

B (100%)

**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:

**Answer Area**

Statements	Yes	No
Extract, transform, and load (ETL) can reduce the transfer of sensitive data to destination systems.	<input type="radio"/>	<input type="radio"/>
Extract, load, and transform (ELT) transforms data by using a compute resource independent of the source system and destination system.	<input type="radio"/>	<input type="radio"/>
Extract, load, and transform (ELT) minimizes the time it takes to copy large volumes of data to destination systems.	<input type="radio"/>	<input type="radio"/>

**Answer Area**

Statements	Yes	No
Extract, transform, and load (ETL) can reduce the transfer of sensitive data to destination systems.	<input type="radio"/>	<input checked="" type="radio"/>
Correct Answer: Extract, load, and transform (ELT) transforms data by using a compute resource independent of the source system and destination system.	<input checked="" type="radio"/>	<input type="radio"/>
Extract, load, and transform (ELT) minimizes the time it takes to copy large volumes of data to destination systems.	<input type="radio"/>	<input checked="" type="radio"/>

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/data-guide/relational-data/etl>

**HOTSPOT -**

You plan to deploy a PostgreSQL database to Azure.

Which hosting model corresponds to the available deployment options? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

**Answer Area**

PostgreSQL on Azure VMs:

Infrastructure as a service (IaaS)
Platform as a service (PaaS)
Software as a service (SaaS)

Azure Database for PostgreSQL:

Infrastructure as a service (IaaS)
Platform as a service (PaaS)
Software as a service (SaaS)

**Answer Area**

PostgreSQL on Azure VMs:

Infrastructure as a service (IaaS)
Platform as a service (PaaS)
Software as a service (SaaS)

Correct Answer:

Azure Database for PostgreSQL:

Infrastructure as a service (IaaS)
Platform as a service (PaaS)
Software as a service (SaaS)

Reference:

<https://azure.microsoft.com/en-us/overview/what-is-saas/>

<https://azure.microsoft.com/en-us/overview/what-is-paas/>

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

### Answer Area

<input type="checkbox"/>	Column family databases
<input type="checkbox"/>	Document databases
<input type="checkbox"/>	Graph databases
<input type="checkbox"/>	Key-value stores

natively support the analysis of relationships between entities.

Correct Answer:

### Answer Area

<input type="checkbox"/>	Column family databases
<input type="checkbox"/>	Document databases
<input type="checkbox"/>	Graph databases
<input type="checkbox"/>	Key-value stores

natively support the analysis of relationships between entities.

Which Azure storage solution provides native support for POSIX-compliant access control lists (ACLs)?

- A. Azure Table storage
- B. Azure Data Lake Storage
- C. Azure Queue storage
- D. Azure Files

Correct Answer: B

Reference:

<https://docs.microsoft.com/en-us/azure/storage/blobs/data-lake-storage-access-control>

*Community vote distribution*

B (100%)

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

### Answer Area

Relational data is stored in

a file system as unstructured data.
a hierachal folder structure.
a tabular form of rows and columns.
comma-separated value (CSV) files.

### Answer Area

Relational data is stored in

Correct Answer:

a file system as unstructured data.
a hierachal folder structure.
a tabular form of rows and columns.
comma-separated value (CSV) files.

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

### Answer Area

physically sorts the data in a table based on the values in a specified column.

A view
A clustered index
A stored procedure
A nonclustered index

Correct Answer:

### Answer Area

physically sorts the data in a table based on the values in a specified column.

A view
A clustered index
A stored procedure
A nonclustered index

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/indexes/clustered-and-nonclustered-indexes-described?view=sql-server-ver15>

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

### Answer Area

A block of code that runs in a database is called

a stored procedure.
a table.
a view.
an index.

### Answer Area

A block of code that runs in a database is called

Correct Answer:

a stored procedure.
a table.
a view.
an index.

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/stored-procedures/stored-procedures-database-engine?view=sql-server-ver15>

**DRAG DROP -**

Match the types of analytics that can be used to answer the business questions.

To answer, drag the appropriate analytics type from the column on the left to its question on the right. Each analytics type may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

<b>Analytics Types</b>	<b>Answer Area</b>
Cognitive	Why did sales increase last month?
Diagnostic	Provide specific guidance on how to allocate current budget to buy different inventory items.
Descriptive	
Predictive	Detect images of the company's logo included in PDF documents
Prescriptive	

**Correct Answer: Incorrect Answer:**

Box 1: Diagnostic -

Diagnostic Analytics: At this stage you can begin to answer some of those why questions. Historical data can begin to be measured against other data to answer the question of why something happened in the past. This is the process of gathering and interpreting different data sets to identify anomalies, detect patterns, and determine relationships.

Box 2: Prescriptive -

Prescriptive analytics is a combination of data, mathematical models, and various business rules to infer actions to influence future desired outcomes.

Predictive analytics, broadly speaking, is a category of business intelligence that uses descriptive and predictive variables from the past to analyze and identify the likelihood of an unknown future outcome

Box 3: Cognitive -

Reference:

<https://demand-planning.com/2020/01/20/the-differences-between-descriptive-diagnostic-predictive-cognitive-analytics/>

<https://azure.microsoft.com/en-us/blog/answering-whats-happening-whys-happening-and-what-will-happen-with-iot-analytics/>

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

## Answer Area

A heap	▼
A stored procedure	
A view	
An index	

presents content defined by a query.

Correct Answer:

A heap	▼
A stored procedure	
A view	
An index	

presents content defined by a query.

Which type of database is Azure Database for PostgreSQL?

- A. Platform as a service (PaaS)
- B. Infrastructure as a service (IaaS)
- C. Microsoft SQL Server
- D. on-premises

**Correct Answer: A**

Reference:

<https://docs.microsoft.com/en-us/azure/postgresql/overview-postgres-choose-server-options>

*Community vote distribution*

A (92%)

8%

Which storage solution supports access control lists (ACLs) at the file and folder level?

- A. Azure Data Lake Storage
- B. Azure Queue storage
- C. Azure Blob storage
- D. Azure Cosmos DB

**Correct Answer: A**

Azure Data Lake Storage Gen2 implements an access control model that supports both Azure role-based access control (Azure RBAC) and POSIX-like access control lists (ACLs).

Reference:

<https://docs.microsoft.com/en-us/azure/storage/blobs/data-lake-storage-access-control>

*Community vote distribution*

A (100%)

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

**Answer Area**

- A  is a chart of colored rectangles. The size of the rectangles represent
- |            |
|------------|
| line chart |
| matrix     |
| scatter    |
| treemap    |

the relative value of each item. The chart can be hierarchical, displaying data as a set of rectangles nested within the main rectangle.

**Correct Answer:****Answer Area**

- A  is a chart of colored rectangles. The size of the rectangles represent
- |            |
|------------|
| line chart |
| matrix     |
| scatter    |
| treemap    |

the relative value of each item. The chart can be hierarchical, displaying data as a set of rectangles nested within the main rectangle.

A treemap chart divides the chart area into rectangles that represent the different levels and relative sizes of the data hierarchy.

Reference:

<https://docs.microsoft.com/en-us/sql/reporting-services/report-design/tree-map-and-sunburst-charts-in-reporting-services?view=sql-server-ver15>

What is a characteristic of batch processing?

- A. The data ingested during batch processing must be processed as soon as the data is received.
- B. Large datasets must be split into batches of less than 1 GB before the data can be processed.
- C. There is a noticeable time delay between ingesting data and obtaining the data processing results.
- D. Batch processing can only process data that is structured.

**Correct Answer:** D

*Community vote distribution*

C (99%)

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

### Answer Area

In a SQL statement,

▼
FROM and WHERE
GROUP BY and ORDER BY
JOIN and MERGE
MAX and MIN

are examples of aggregate functions.

Correct Answer:

### Answer Area

In a SQL statement,

▼
FROM and WHERE
GROUP BY and ORDER BY
JOIN and MERGE
MAX and MIN

are examples of aggregate functions.

An aggregate function performs a calculation on a set of values, and returns a single value. The following are aggregate functions:

- ⇒ APPROX\_COUNT\_DISTINCT
- ⇒ AVG
- ⇒ CHECKSUM\_AGG
- ⇒ COUNT
- ⇒ COUNT\_BIG

GROUPING -

- 
- ⇒ GROUPING\_ID
- ⇒ MAX
- ⇒ MIN
- ⇒ STDEV
- ⇒ STDEVP
- ⇒ STRING\_AGG
- ⇒ SUM
- ⇒ VAR
- ⇒ VARP

Reference:

<https://docs.microsoft.com/en-us/sql/t-sql/functions/aggregate-functions-transact-sql?view=sql-server-ver15>

**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:

**Answer Area**

Statements	Yes	No
A job that processes sales data once daily is an example of a batch workload.	<input type="radio"/>	<input type="radio"/>
A job that calculates a rolling average temperature reading is an example of a streaming workload.	<input type="radio"/>	<input type="radio"/>
A job that calculates average revenue per product for the last month is an example of a streaming workload.	<input type="radio"/>	<input type="radio"/>

**Correct Answer:****Answer Area**

Statements	Yes	No
A job that processes sales data once daily is an example of a batch workload.	<input checked="" type="radio"/>	<input type="radio"/>
A job that calculates a rolling average temperature reading is an example of a streaming workload.	<input checked="" type="radio"/>	<input type="radio"/>
A job that calculates average revenue per product for the last month is an example of a streaming workload.	<input type="radio"/>	<input checked="" type="radio"/>

Box 1: Yes -

Batch processing refers to processing of high volume of data in batch within a specific time span. It processes large volume of data all at once.

Batch processing is used when data size is known and finite. It takes little longer time to process data.

Box 2: Yes -

Stream processing refers to processing of continuous stream of data immediately as it is produced. It analyzes streaming data in real time.

Stream processing is used when the data size is unknown and infinite and continuous.

Box 3: No -

Reference:

<https://www.geeksforgeeks.org/difference-between-batch-processing-and-stream-processing/>

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

**Answer Area**

In a relational database, each row in a table has

a different set of columns
a key-value pair
the same set of columns
unstructured data

Correct Answer:

**Answer Area**

In a relational database, each row in a table has

a different set of columns
a key-value pair
the same set of columns
unstructured data

The same set of columns.

In relational databases, a row is a data record within a table. Each row, which represents a complete record of specific item data, holds different data within the same structure. A row is occasionally referred to as a tuple.

Incorrect:

Not: a key value pair.

Unlike relational databases, key-value databases do not have a specified structure. Relational databases store data in tables where each column has an assigned data type. Key-value databases are a collection of key-value pairs that are stored as individual records and do not have a predefined data structure.

Reference:

<https://www.techopedia.com/definition/4425/database-row>

<https://www.techtarget.com/searchdatamanagement/tip/NoSQL-database-types-explained-Key-value-store>

**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:

**Answer Area**

<b>Statements</b>	<b>Yes</b>	<b>No</b>
Normalizing a database increases the throughput of writing transactions.	<input type="radio"/>	<input type="radio"/>
Analytics systems are more normalized than transactional systems.	<input type="radio"/>	<input type="radio"/>
Normalizing a database results in queries that require more joins.	<input type="radio"/>	<input type="radio"/>

**Correct Answer:****Answer Area**

<b>Statements</b>	<b>Yes</b>	<b>No</b>
Normalizing a database increases the throughput of writing transactions.	<input type="radio"/>	<input checked="" type="radio"/>
Analytics systems are more normalized than transactional systems.	<input type="radio"/>	<input checked="" type="radio"/>
Normalizing a database results in queries that require more joins.	<input checked="" type="radio"/>	<input type="radio"/>

## Box 1: No -

Database normalization is the process of restructuring a relational database in accordance with a series of so-called normal forms in order to reduce data redundancy and improve data integrity.

Full normalisation will generally not improve performance, in fact it can often make it worse but it will keep your data duplicate free.

## Box 2: No -

Analytics systems are de-normalized to increase performance.

Transactional database systems are normalized to increase data consistency.

## Box 3: Yes -

Transactional database systems are more normalized and requires more joins.

## Reference:

<https://www.sqlshack.com/what-is-database-normalization-in-sql-server>

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

### Answer Area

▼	natively support the analysis of relationships between entities
Column family databases	
Document databases	
Graph databases	
Key-value stores	

### Answer Area

Correct Answer:

▼	natively support the analysis of relationships between entities
Column family databases	
Document databases	
Graph databases	
Key-value stores	

A graph database stores two types of information, nodes and edges. Edges specify relationships between nodes. Nodes and edges can have properties that provide information about that node or edge, similar to columns in a table. Edges can also have a direction indicating the nature of the relationship.

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/guide/technology-choices/data-store-overview>

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

### Answer Area

A key/value data store is optimized for

▼	
enforcing constraints.	
simple lookups.	
table joins.	

### Answer Area

Correct Answer: A key/value data store is optimized for

▼	
enforcing constraints.	
simple lookups.	
table joins.	

A key/value store associates each data value with a unique key.

Key/value stores are highly optimized for applications performing simple lookups, but are less suitable if you need to query data across different key/value stores.

Key/value stores are also not optimized for querying by value.

A single key/value store can be extremely scalable, as the data store can easily distribute data across multiple nodes on separate machines.

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/guide/technology-choices/data-store-overview>

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

### Answer Area

In an infrastructure as a service (IaaS) instance of Microsoft SQL Server on Azure, you manage the [ ] that hosts SQL Server

elastic pool
MySQL server
PostgreSQL server
virtual machine

### Answer Area

**Correct Answer:** In an infrastructure as a service (IaaS) instance of Microsoft SQL Server on Azure, you manage the [ ] that hosts SQL Server

elastic pool
MySQL server
PostgreSQL server
virtual machine

SQL Server on Azure VM -

SQL Server on Azure VM falls into the industry category Infrastructure-as-a-Service (IaaS) and allows you to run SQL Server inside a fully managed virtual machine (VM) in Azure.

The most significant difference from SQL Database and SQL Managed Instance is that SQL Server on Azure Virtual Machines allows full control over the database engine. You can choose when to start maintenance/patching, change the recovery model to simple or bulk-logged, pause or start the service when needed, and you can fully customize the SQL Server database engine. With this additional control comes the added responsibility to manage the virtual machine.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/azure-sql-iaas-vs-paas-what-is-overview?view=azuresql>

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

### Answer Area

Varying fields for each entity in a JSON document is an example of [ ]

relational data.
semi-structured data.
structured data.
unstructured data.

### Answer Area

**Correct Answer:** Varying fields for each entity in a JSON document is an example of [ ]

relational data.
semi-structured data.
structured data.
unstructured data.

For some semi-structured data formats (e.g. JSON), data sets are frequently a simple concatenation of multiple documents.

Reference:

<https://docs.snowflake.com/en/user-guide/semistructured-considerations.html>

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

### Answer Area

A JSON document is an example of

graph data.	▼
relational data.	
semi-structured data.	
unstructured data.	

### Answer Area

**Correct Answer:** A JSON document is an example of

graph data.	▼
relational data.	
semi-structured data.	
unstructured data.	

Semi-structured data -

Semi-structured data (e.g., JSON, CSV, XML) is the  $\lambda$ bridge $\lambda$  between structured and unstructured data. It does not have a predefined data model and is more complex than structured data, yet easier to store than unstructured data.

Reference:

<https://www.ibm.com/cloud/blog/structured-vs-unstructured-data>

Which property of a transactional workload guarantees that each transaction is treated as a single unit that either succeeds completely or fails completely?

- A. atomicity
- B. isolation
- C. durability
- D. consistency

**Correct Answer: A**

The purpose of making transactions atomic is to prevent different transactions from interfering with one another. This can only happen if more than one user process is trying to access the database at the same time, as when a server allows several clients to use it concurrently. The simplest way to enforce atomicity is for the DBMS to refuse to start any transaction until the previous one has committed.

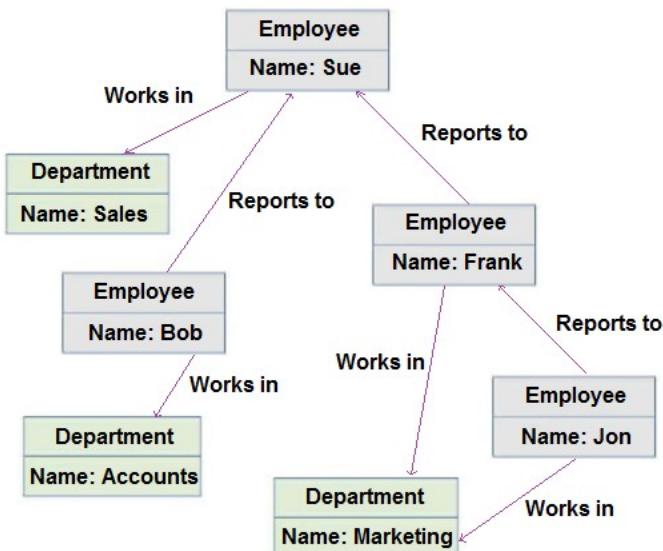
Reference:

<https://www.sciencedirect.com/topics/computer-science/atomic-transaction>

*Community vote distribution*

A (100%)

You have a data store that has the structure shown in the following exhibit.



Which type of data store is this?

- A. key/value
- B. object data
- C. graph
- D. time series

**Correct Answer: C**

A graph database stores two types of information, nodes and edges. Edges specify relationships between nodes. Nodes and edges can have properties that provide information about that node or edge, similar to columns in a table. Edges can also have a direction indicating the nature of the relationship.

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/guide/technology-choices/data-store-overview>

*Community vote distribution*

C (100%)

Which type of database contains nodes and edges?

- A. graph
- B. key/value
- C. columnar
- D. time series

**Correct Answer: A**

A graph database stores two types of information, nodes and edges. Edges specify relationships between nodes. Nodes and edges can have properties that provide information about that node or edge, similar to columns in a table. Edges can also have a direction indicating the nature of the relationship.

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/guide/technology-choices/data-store-overview>

*Community vote distribution*

A (100%)

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

**Answer Area**

▼	is responsible for identifying which business rules must be applied to the data of a company.
A data analyst	
A data engineer	
A data scientist	

**Answer Area**

Correct Answer: 

▼	is responsible for identifying which business rules must be applied to the data of a company.
A data analyst	
A data engineer	
A data scientist	

A data analyst's primary skill set revolves around data acquisition, handling, and processing.

Incorrect:

\* A data engineer requires an intermediate level understanding of programming to build thorough algorithms along with a mastery of statistics and math.

\* A data scientist needs to be a master of both worlds. Data, stats, and math along with in-depth programming knowledge for Machine Learning and Deep Learning.

Reference:

<https://www.edureka.co/blog/data-analyst-vs-data-engineer-vs-data-scientist/>

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

### Answer Area

Relational data uses

collections
rows
keys
partitions

to enforce relationships between different tables.

Correct Answer:

### Answer Area

Relational data uses

collections
rows
keys
partitions

to enforce relationships between different tables.

Reference:

<https://teachcomputerscience.com/relational-databases/>

You have an inventory management database that contains the following table.

ProductName	Quantity
Product1	100
Product2	129
Product3	176

Which statement should you use in a SQL query to change the inventory quantity of Product1 to 270?

- A. INSERT
- B. MERGE
- C. UPDATE
- D. CREATE

Correct Answer: C

Reference:

<https://docs.microsoft.com/en-us/sql/t-sql/queries/update-transact-sql?view=sql-server-ver15>

*Community vote distribution*

C (100%)

Your company needs to implement a relational database in Azure. The solution must minimize ongoing maintenance. Which Azure service should you use?

- A. Azure HDInsight
- B. Azure SQL Database
- C. Azure Cosmos DB
- D. SQL Server on Azure Virtual Machines

**Correct Answer: B**

Reference:

<https://azure.microsoft.com/en-us/services/sql-database/#features>

*Community vote distribution*

B (100%)

You are writing a set of SQL queries that administrators will use to troubleshoot an Azure SQL database.

You need to embed documents and query results into a SQL notebook.

What should you use?

- A. Microsoft SQL Server Management Studio (SSMS)
- B. Azure Data Studio
- C. Azure CLI
- D. Azure PowerShell

**Correct Answer: B**

Reference:

<https://www.mssqltips.com/sqlservertip/5997/create-sql-server-notebooks-in-azure-data-studio/>

*Community vote distribution*

B (100%)

**DRAG DROP -**

Match the terms to the appropriate descriptions.

To answer, drag the appropriate term from the column on the left to its description on the right. Each term may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

<b>Terms</b>	<b>Answer Area</b>
Index	A database object that holds data
View	A database object whose content is defined by a query
Table	A database object that helps improve the speed of data retrieval

**Correct Answer:**

<b>Terms</b>	<b>Answer Area</b>
Index	A database object that holds data
View	A database object whose content is defined by a query
Table	A database object that helps improve the speed of data retrieval

## Reference:

[https://en.wikipedia.org/wiki/Table\\_\(database\)](https://en.wikipedia.org/wiki/Table_(database))

[https://en.wikipedia.org/wiki/View\\_\(SQL\)](https://en.wikipedia.org/wiki/View_(SQL))

[https://en.wikipedia.org/wiki/Database\\_index](https://en.wikipedia.org/wiki/Database_index)

You have an e-commerce application that reads and writes data to an Azure SQL database.

Which type of processing does the application use?

- A. stream processing
- B. batch processing
- C. Online Analytical Processing (OLAP)
- D. Online Transaction Processing (OLTP)

**Correct Answer: D**

OLTP is designed to serve as a persistent data store for business or front-end applications. OLTP administers day to day transaction of an organization.

Reference:

<https://sqlwizard.blog/2020/03/15/sql-server-oltp-vs-olap/>

*Community vote distribution*

D (100%)

When can you use an Azure Resource Manager template?

- A. to automate the creation of an interdependent group of Azure resources in a repeatable way
- B. to apply Azure policies for multi-tenant deployments
- C. to provision Azure subscriptions
- D. to control which services and feature administrators and developers can deploy from the Azure portal

**Correct Answer:** A

You can automate deployments and use the practice of infrastructure as code. In code, you define the infrastructure that needs to be deployed. To implement infrastructure as code for your Azure solutions, use Azure Resource Manager templates (ARM templates). The template is a JavaScript Object

Notation (JSON) file that defines the infrastructure and configuration for your project. The template uses declarative syntax, which lets you state what you intend to deploy without having to write the sequence of programming commands to create it. In the template, you specify the resources to deploy and the properties for those resources.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-resource-manager/templates/overview>

*Community vote distribution*

A (100%)

You have an Azure SQL database that you access directly from the Internet.

You recently changed the public IP address of your computer.

After changing the IP address, you can no longer access the database. You can connect to other resources in Azure.

What is a possible cause of the issue?

- A. role-based access control (RBAC)
- B. Dynamic Host Configuration Protocol (DHCP)
- C. Domain Name Service (DNS)
- D. a database-level firewall

**Correct Answer:** D

The Azure SQL Database firewall lets you decide which IP addresses may or may not have access to either your Azure SQL Server or your Azure SQL database.

When creating an Azure SQL Database, the firewall needs to be configured before anyone will be able to access the database. By default, no external access to your SQL Database will be allowed until you explicitly assign permission by creating a firewall rule.

Reference:

<https://www.sqlshack.com/configuring-the-azure-sql-database-firewall/>

*Community vote distribution*

D (100%)

**DRAG DROP -**

Match the tools to the appropriate descriptions.

To answer, drag the appropriate tool from the column on the left to its description on the right. Each tool may be used once, more than once, or not at all.

Select and Place:

Tools	Answer Area	
	Tool	
Azure Data Studio	Tool	A graphical tool for managing SQL Server or Azure SQL databases that supports access, configuration, management, and administration tasks.
Microsoft SQL Server Data Tools (SSDT)	Tool	A lightweight editor that can run on-demand SQL queries and view and save results as text, JSON, or Microsoft Excel files.
Microsoft SQL Server Management Studio (SSMS)	Tool	A development tool for building Azure SQL databases, Microsoft SQL Server relational databases, SQL Server Analysis Services (SSAS) data models, SQL Server Integration Services (SSIS) packages, and SQL Server Reporting Services (SSRS) reports.

**Correct Answer:**

Tools	Answer Area	
	Tool	
	Microsoft SQL Server Management Studio (SSMS)	A graphical tool for managing SQL Server or Azure SQL databases that supports access, configuration, management, and administration tasks.
	Azure Data Studio	A lightweight editor that can run on-demand SQL queries and view and save results as text, JSON, or Microsoft Excel files.
	Microsoft SQL Server Data Tools (SSDT)	A development tool for building Azure SQL databases, Microsoft SQL Server relational databases, SQL Server Analysis Services (SSAS) data models, SQL Server Integration Services (SSIS) packages, and SQL Server Reporting Services (SSRS) reports.

**Box 1: Microsoft SQL Server Management Studio (SSMS)**

SQL Server Management Studio (SSMS) is an integrated environment for managing any SQL infrastructure, from SQL Server to Azure SQL Database.

**Box 2: Azure Data Studio -**

Azure Data Studio offers a modern, keyboard-focused SQL coding experience that makes your everyday tasks easier with built-in features, such as multiple tab windows, a rich SQL editor, IntelliSense, keyword completion, code snippets, code navigation, and source control integration (Git). Run on-demand SQL queries, view and save results as text, JSON, or Excel. Edit data, organize your favorite database connections, and browse database objects in a familiar object browsing experience.

**Box 3: Microsoft SQL Server Data Tools (SSDT)**

SQL Server Data Tools (SSDT) is a modern development tool for building SQL Server relational databases, databases in Azure SQL, Analysis Services (AS) data models, Integration Services (IS) packages, and Reporting Services (RS) reports. With SSDT, you can design and deploy any SQL Server content type with the same ease as you would develop an application in Visual Studio.

**Reference:**

<https://docs.microsoft.com/en-us/sql/ssms/download-sql-server-management-studio-ssms>

<https://code.visualstudio.com/docs/supporting/FAQ> <https://docs.microsoft.com/en-us/sql/azure-data-studio/what-is-azure-data-studio>

<https://docs.microsoft.com/en-us/sql/ssdt/download-sql-server-data-tools-ssdt>

**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:

**Answer Area**

Statements	Yes	No
Relational database tables contain columns and rows	<input type="radio"/>	<input type="radio"/>
Indexes in a relational database describe the data types in a table	<input type="radio"/>	<input type="radio"/>
A database view is a virtual table whose content is defined by a query	<input type="radio"/>	<input type="radio"/>

Correct Answer:

**Answer Area**

Statements	Yes	No
Relational database tables contain columns and rows	<input checked="" type="radio"/>	<input type="radio"/>
Indexes in a relational database describe the data types in a table	<input type="radio"/>	<input checked="" type="radio"/>
A database view is a virtual table whose content is defined by a query	<input checked="" type="radio"/>	<input type="radio"/>

Box 1: Yes -

Tables are database objects that contain all the data in a database. In tables, data is logically organized in a row-and-column format similar to a spreadsheet.

Each row represents a unique record, and each column represents a field in the record.

Box 2: No -

An index is an on-disk structure associated with a table or view that speeds retrieval of rows from the table or view.

Box 3: Yes -

A view is a virtual table whose contents are defined by a query. Like a table, a view consists of a set of named columns and rows of data.

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/tables/tables> <https://docs.microsoft.com/en-us/sql/relational-databases/indexes/clustered-and-nonclustered-indexes-described> <https://docs.microsoft.com/en-us/sql/relational-databases/views/views?view=sql-server-ver15>

Which command-line tool can you use to query Azure SQL databases?

- A. sqlcmd
- B. bcp
- C. azdata
- D. Azure CLI

**Correct Answer: A**

The sqlcmd utility lets you enter Transact-SQL statements, system procedures, and script files at the command prompt.

Incorrect Answers:

B: The bulk copy program utility (bcp) bulk copies data between an instance of Microsoft SQL Server and a data file in a user-specified format.

D: The Azure CLI is the defacto tool for cross-platform and command-line tools for building and managing Azure resources.

Reference:

<https://docs.microsoft.com/en-us/sql/tools/overview-sql-tools?view=sql-server-ver15>

*Community vote distribution*

A (100%)

**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:

**Answer Area**

Statements	Yes	No
Azure SQL Database includes a managed backup service.	<input type="radio"/>	<input type="radio"/>
Azure SQL Database has built-in high availability.	<input type="radio"/>	<input type="radio"/>
Azure SQL Database can use Azure Defender.	<input type="radio"/>	<input type="radio"/>

Correct Answer:

**Answer Area**

Statements	Yes	No
Azure SQL Database includes a managed backup service.	<input checked="" type="radio"/>	<input type="radio"/>
Azure SQL Database has built-in high availability.	<input checked="" type="radio"/>	<input type="radio"/>
Azure SQL Database can use Azure Defender.	<input checked="" type="radio"/>	<input type="radio"/>

Box 1: Yes -

Box 2: Yes -

Box 3: Yes -

Azure Defender provides security alerts and advanced threat protection for virtual machines, SQL databases, containers, web applications, your network, and more.

Azure Defender provides security alerts and advanced threat protection for virtual machines, SQL databases, containers, web applications, your network, and more.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/sql-database-paas-overview> <https://azure.microsoft.com/en-us/blog/announcing-sql-atp-and-sql-vulnerability-assessment-general-availability/> <https://docs.microsoft.com/en-us/azure/security-center/azure-defender>

**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:

**Answer Area**

Statements	Yes	No
You can use Azure Data Studio to query a Microsoft SQL Server big data cluster.	<input type="radio"/>	<input type="radio"/>
You can use Microsoft SQL Server Management Studio (SSMS) to query an Azure Synapse Analytics data warehouse.	<input type="radio"/>	<input type="radio"/>
You can use MySQL Workbench to query Azure Database for MariaDB databases.	<input type="radio"/>	<input type="radio"/>

**Answer Area**

Statements	Yes	No
<b>Correct Answer:</b> You can use Azure Data Studio to query a Microsoft SQL Server big data cluster.	<input checked="" type="radio"/>	<input type="radio"/>
You can use Microsoft SQL Server Management Studio (SSMS) to query an Azure Synapse Analytics data warehouse.	<input checked="" type="radio"/>	<input type="radio"/>
You can use MySQL Workbench to query Azure Database for MariaDB databases.	<input checked="" type="radio"/>	<input type="radio"/>

Reference:

<https://docs.microsoft.com/en-us/sql/big-data-cluster/connect-to-big-data-cluster?view=sql-server-ver15> <https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-query-ssms> <https://docs.microsoft.com/en-us/azure/mariadb/connect-workbench>

**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:

**Answer Area**

Statements	Yes	No
Platform as a service (PaaS) database offerings in Azure provide built-in high availability.	<input type="radio"/>	<input type="radio"/>
Platform as a service (PaaS) database offerings in Azure provide configurable scaling options.	<input type="radio"/>	<input type="radio"/>
Platform as a service (PaaS) database offerings in Azure reduce the administrative overhead for managing hardware.	<input type="radio"/>	<input type="radio"/>

**Answer Area**

Statements	Yes	No
Correct Answer: Platform as a service (PaaS) database offerings in Azure provide built-in high availability.	<input checked="" type="radio"/>	<input type="radio"/>
Platform as a service (PaaS) database offerings in Azure provide configurable scaling options.	<input checked="" type="radio"/>	<input type="radio"/>
Platform as a service (PaaS) database offerings in Azure reduce the administrative overhead for managing hardware.	<input checked="" type="radio"/>	<input type="radio"/>

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/sql-database-paas-overview>

HOTSPOT -

You have the following SQL query.

```
INSERT INTO dbo.Products (ProductID, ProductName, Price, ProductDescription)
    VALUES (1, 'Clamp', 12.48, 'Workbench clamp') ;
```

What are dbo.Products and ProductName? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

### Answer Area

Dbo.Products :

A column
A database
A table
An index

ProductName :

A column
A database
A table
An index

### Answer Area

Dbo.Products :

A column
A database
A table
An index

Correct Answer:

ProductName :

A column
A database
A table
An index

**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:

**Answer Area**

Statements	Yes	No
You must apply operating system updates to Azure SQL databases regularly.	<input type="radio"/>	<input type="radio"/>
You need a Microsoft 365 subscription to create an Azure SQL database.	<input type="radio"/>	<input type="radio"/>
You can use existing Microsoft SQL Server licenses to reduce the cost of Azure SQL databases.	<input type="radio"/>	<input type="radio"/>

**Answer Area**

Statements	Yes	No
Correct Answer: You must apply operating system updates to Azure SQL databases regularly.	<input type="radio"/>	<input checked="" type="radio"/>
You need a Microsoft 365 subscription to create an Azure SQL database.	<input type="radio"/>	<input checked="" type="radio"/>
You can use existing Microsoft SQL Server licenses to reduce the cost of Azure SQL databases.	<input checked="" type="radio"/>	<input type="radio"/>

Reference:

<https://azure.microsoft.com/en-gb/blog/hot-patching-sql-server-engine-in-azure-sql-database/> <https://azure.microsoft.com/en-us/services/sql-database/#product-overview>

Which statement is an example of Data Definition Language (DDL)?

- A. SELECT
- B. JOIN
- C. UPDATE
- D. CREATE

**Correct Answer:** D

Data Definition Language (DDL) statements defines data structures. Use these statements to create, alter, or drop data structures in a database.

These statements include:

⇒ ALTER  
⇒ Collations  
⇒ CREATE  
⇒ DROP  
⇒ DISABLE TRIGGER  
⇒ ENABLE TRIGGER  
⇒ RENAME  
⇒ UPDATE STATISTICS  
⇒ TRUNCATE TABLE  
⇒ INSERT

Reference:

<https://docs.microsoft.com/en-us/sql/t-sql/statements/statements>

*Community vote distribution*

D (100%)

**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:

**Answer Area**

Statements	Yes	No
Azure Data Studio can be used to query an Azure SQL database from a device that runs macOS.	<input type="radio"/>	<input type="radio"/>
Microsoft SQL Server Management Studio (SSMS) enables users to create and use SQL notebooks.	<input type="radio"/>	<input type="radio"/>
Azure Data Studio can be used to restore a database.	<input type="radio"/>	<input type="radio"/>

Correct Answer:

**Answer Area**

Statements	Yes	No
Azure Data Studio can be used to query an Azure SQL database from a device that runs macOS.	<input checked="" type="radio"/>	<input type="radio"/>
Microsoft SQL Server Management Studio (SSMS) enables users to create and use SQL notebooks.	<input type="radio"/>	<input checked="" type="radio"/>
Azure Data Studio can be used to restore a database.	<input checked="" type="radio"/>	<input type="radio"/>

Box 1: Yes -

Azure Data Studio is a cross-platform database tool for data professionals using on-premises and cloud data platforms on Windows, macOS, and Linux.

You can use Azure Data Studio to connect to an Azure SQL Database server. You'll then run Transact-SQL (T-SQL) statements to create and query Azure SQL databases.

Box 2: No -

SQL Server Management Studio is for configuring, managing, and administering all components within Microsoft SQL Server, not to create SQL notebooks.

Instead use Azure Data Studio to create SQL notebook.

Box 3: Yes -

You can use the Azure Data Studio to restore databases.

Reference:

<https://docs.microsoft.com/en-us/sql/azure-data-studio/what-is-azure-data-studio>

You are deploying a software as a service (SaaS) application that requires a relational database for Online Transaction Processing (OLTP). Which Azure service should you use to support the application?

- A. Azure Cosmos DB
- B. Azure HDInsight
- C. Azure SQL Database
- D. Azure Synapse Analytics

**Correct Answer: C**

Azure SQL Database is relational database and a managed service.

Incorrect Answers:

A, B: Cosmos DB, HDInsight are non-relational databases.

D: Azure Synapse Analytics is for data warehousing, not for Online Transaction Processing

Reference:

<https://cloud.netapp.com/blog/azure-cvo-blg-azure-database-review-your-guide-for-database-assessment>

*Community vote distribution*

C (100%)

What are two benefits of platform as a service (PaaS) relational database offerings in Azure, such as Azure SQL Database? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. access to the latest features
- B. complete control over backup and restore processes
- C. in-database machine learning services
- D. reduced administrative effort for managing the server infrastructure

**Correct Answer: AD**

A: Azure SQL Database is a fully managed platform as a service (PaaS) database engine that handles most of the database management functions such as upgrading, patching, backups, and monitoring without user involvement.

D: SQL Database delivers predictable performance with multiple resource types, service tiers, and compute sizes. It provides dynamic scalability with no downtime, built-in intelligent optimization, global scalability and availability, and advanced security options. These capabilities allow you to focus on rapid app development and accelerating your time-to-market, rather than on managing virtual machines and infrastructure.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/sql-database-paas-overview>

*Community vote distribution*

AD (100%)

**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:

**Answer Area**

Statements	Yes	No
If you have a platform as a service (PaaS) database in Azure, you are responsible for applying operating system updates.	<input type="radio"/>	<input type="radio"/>
If you have a platform as a service (PaaS) database in Azure, backups are performed automatically.	<input type="radio"/>	<input type="radio"/>
If you have a platform as a service (PaaS) database in Azure, you are responsible for installation of the database engine.	<input type="radio"/>	<input type="radio"/>

Correct Answer:

**Answer Area**

Statements	Yes	No
If you have a platform as a service (PaaS) database in Azure, you are responsible for applying operating system updates.	<input type="radio"/>	<input checked="" type="radio"/>
If you have a platform as a service (PaaS) database in Azure, backups are performed automatically.	<input checked="" type="radio"/>	<input type="radio"/>
If you have a platform as a service (PaaS) database in Azure, you are responsible for installation of the database engine.	<input type="radio"/>	<input checked="" type="radio"/>

Box 1: No -

Microsoft handles all patching and updating of the SQL and operating system code. You don't have to manage the underlying infrastructure.

Box 2: Yes -

SQL Database is a fully managed service that has built-in high availability, backups, and other common maintenance operations.

Box 3: No -

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/sql-database-paas-overview>

DRAG DROP -

You have a table named Sales that contains the following data.

SalesDate	SalesAmount	ProductID
4-Apr-20	\$2,000	1
5-Apr-20	\$40	2
5-Apr-20	\$2,300	1
6-Apr-20	\$40	3
6-Apr-20	\$200	4

You need to query the table to return the average sales amount per day. The output must produce the following results.

SalesDate	AVG(SalesAmount)
4-Apr-20	\$2,000
5-Apr-20	\$1,170
6-Apr-20	\$120

How should you complete the query? To answer, drag the appropriate values to the correct targets. Each value may be used once, more than once, or not at all.

You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.

Select and Place:

Values	Answer Area
<input type="button" value="CREATE"/> <input type="button" value="GROUP BY"/> <input type="button" value="ORDER BY"/> <input type="button" value="SELECT"/>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <b>Value</b>      SalesDate, AVG(SalesAmount)         </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <b>Value</b>      FROM Sales         </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <b>Value</b>      SalesDate         </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <b>Value</b>      ORDER BY SalesDate         </div>

**Correct Answer:**

Values	Answer Area
<input type="button" value="CREATE"/> <input type="button" value="GROUP BY"/> <input type="button" value="ORDER BY"/> <input type="button" value="SELECT"/>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <b>SELECT</b>      SalesDate, AVG(SalesAmount)         </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <b>FROM</b> Sales         </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <b>GROUP BY</b>      SalesDate         </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <b>ORDER BY</b> SalesDate         </div>

Box 1: SELECT -

Box 2: GROUP BY -

Example:

When used with a GROUP BY clause, each aggregate function produces a single value covering each group, instead of a single value covering the whole table.

The following example produces summary values for each sales territory in the AdventureWorks2012 database. The summary lists the average bonus received by the sales people in each territory, and the sum of year-to-date sales for each territory.

SELECT TerritoryID, AVG(Bonus) as 'Average bonus', SUM(SalesYTD) as 'YTD sales'

FROM Sales.SalesPerson -

GROUP BY TerritoryID;

Reference:

<https://docs.microsoft.com/en-us/sql/t-sql/functions/avg-transact-sql>

Question #83

Topic 1

When you create an Azure SQL database, which account can always connect to the database?

- A. the Azure Active Directory (Azure AD) account that created the database
- B. the server admin login account of the logical server
- C. the Azure Active Directory (Azure AD) administrator account
- D. the sa account

**Correct Answer: B**

When you first deploy Azure SQL, you specify an admin login and an associated password for that login. This administrative account is called Server admin.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/single-database-create-quickstart>

*Community vote distribution*

B (100%)

Question #84

Topic 1

Which statement is an example of Data Definition Language (DDL)?

- A. SELECT
- B. INSERT
- C. DELETE
- D. DROP

**Correct Answer: D**

Data Definition Language (DDL) statements defines data structures. Use these statements to create, alter, or drop data structures in a database.

These statements include:

⇒ ALTER  
⇒ Collations  
⇒ CREATE  
⇒ DROP  
⇒ DISABLE TRIGGER  
⇒ ENABLE TRIGGER  
⇒ RENAME  
⇒ UPDATE STATISTICS  
⇒ TRUNCATE TABLE  
⇒ UPDATE

Reference:

<https://docs.microsoft.com/en-us/sql/t-sql/statements/statements>

*Community vote distribution*

D (100%)

A team of developers has computers that run Windows 10 and Ubuntu Desktop.

The developers need to connect to and query an Azure SQL database from each of their computers. The developers require code assistance features such as IntelliSense.

What should the developers use?

- A. sqlcmd
- B. Microsoft SQL Server Management Studio (SSMS)
- C. Azure Data Studio
- D. Azure Data Explorer

**Correct Answer: C**

Azure Data Studio is a cross-platform database tool for data professionals who use on-premises and cloud data platforms on Windows, macOS, and Linux.

Azure Data Studio offers a modern editor experience with IntelliSense, code snippets, source control integration, and an integrated terminal.

Reference:

<https://docs.microsoft.com/en-us/sql/azure-data-studio/download-azure-data-studio>

*Community vote distribution*

C (100%)

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

**Answer Area**

Transparent Data Encryption (TDE) encrypts

a column to protect data at rest and in transit.
queries and their results in order to protect data in transit.
the database to protect data at rest.
the server to protect data at rest.

**Correct Answer:**

**Answer Area**

Transparent Data Encryption (TDE) encrypts

a column to protect data at rest and in transit.
queries and their results in order to protect data in transit.
the database to protect data at rest.
the server to protect data at rest.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/transparent-data-encryption-tde-overview?tabs=azure-portal>

You need to ensure that users use multi-factor authentication (MFA) when connecting to an Azure SQL database. Which type of authentication should you use?

- A. service principal authentication
- B. Azure Active Directory (Azure AD) authentication
- C. SQL authentication
- D. certificate authentication

**Correct Answer: B**

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/authentication-mfa-ssms-overview>

*Community vote distribution*

B (100%)

What is a benefit of hosting a database on Azure SQL managed instance as compared to an Azure SQL database?

- A. built-in high availability
- B. native support for cross-database queries and transactions
- C. system-initiated automatic backups
- D. support for encryption at rest

**Correct Answer: B**

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/features-comparison>

*Community vote distribution*

B (100%)

**HOTSPOT -**

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

**Answer Area**

By default, each Azure SQL database is protected by

a network security group (NSG).
a server-level firewall.
Azure Firewall.
Azure Front Door.

**Answer Area**

By default, each Azure SQL database is protected by

**Correct Answer:**

a network security group (NSG).
<b>a server-level firewall.</b>
Azure Firewall.
Azure Front Door.

When you create a new server in Azure SQL Database or Azure Synapse Analytics named mysqlserver, for example, a server-level firewall blocks all access to the public endpoint for the server

Reference:

<https://docs.microsoft.com/en-us/azure/security/fundamentals/infrastructure-sql>

You need to design and model a database by using a graphical tool that supports project-oriented offline database development.

What should you use?

- A. Microsoft SQL Server Data Tools (SSDT)
- B. Microsoft SQL Server Management Studio (SSMS)
- C. Azure Databricks
- D. Azure Data Studio

**Correct Answer: A**

Reference:

<https://docs.microsoft.com/en-us/sql/ssdt/project-oriented-offline-database-development?view=sql-server-ver15>

*Community vote distribution*

A (100%)

**DRAG DROP -**

Match the security components to the appropriate scenarios.

To answer, drag the appropriate component from the column on the left to its scenario on the right. Each component may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

**Components**

- 
- 
- 

**Answer Area**

<input type="button" value=" "/>
<input type="button" value=" "/>
<input type="button" value=" "/>

Prevent access to an Azure SQL database from another network.

Support Azure Active Directory (Azure AD) sign-ins to an Azure SQL database.

Ensure that sensitive data never appears as plain text in an Azure SQL database.

**Correct Answer:****Components**

- 
- 
- 

**Answer Area**

<input type="button" value="Firewall"/>
<input type="button" value="Authentication"/>
<input type="button" value="Encryption"/>

Prevent access to an Azure SQL database from another network.

Support Azure Active Directory (Azure AD) sign-ins to an Azure SQL database.

Ensure that sensitive data never appears as plain text in an Azure SQL database.

Reference:

<https://docs.microsoft.com/en-us/sql/database-engine/configure-windows/configure-a-windows-firewall-for-database-engine-access?view=sql-server-ver15> <https://docs.microsoft.com/en-us/azure/azure-sql/database/authentication-aad-overview> <https://docs.microsoft.com/en-us/azure/azure-sql/database/always-encrypted-certificate-store-configure>

You have a transactional application that stores data in an Azure SQL managed instance.

When should you implement a read-only database replica?

- A. You need to generate reports without affecting the transactional workload.
- B. You need to audit the transactional application.
- C. You need to implement high availability in the event of a regional outage.
- D. You need to improve the recovery point objective (RPO).

**Correct Answer: A**

Use read-only replicas to offload read-only query workloads.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/read-scale-out>

*Community vote distribution*

A (85%)

C (15%)

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

### Answer Area

A relational database must be used when

a dynamic schema is required.
data will be stored as key/value pairs.
storing large images and videos.
strong consistency guarantees are required.

### Answer Area

A relational database must be used when

Correct Answer:

a dynamic schema is required.
data will be stored as key/value pairs.
storing large images and videos.
strong consistency guarantees are required.

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

### Answer Area

Relational data uses

▼	to enforce relationships between different tables.
collections	
columns	
keys	
partitions	

### Answer Area

Relational data uses

▼
collections
columns
keys
partitions

Correct Answer:

Reference:

<https://teachcomputerscience.com/relational-databases/>

**HOTSPOT -**

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

**Answer Area**

▼	is a virtual table that contains content defined by a query.
A heap	
A stored procedure	
A view	
An index	

**Answer Area**

Correct Answer:

▼	is a virtual table that contains content defined by a query.
A heap	
A stored procedure	
A view	
An index	

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/views/views>

You need to query a table named Products in an Azure SQL database.

Which three requirements must be met to query the table from the internet? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A. You must be assigned the Reader role for the resource group that contains the database.
- B. You must have SELECT access to the Products table.
- C. You must have a user in the database.
- D. You must be assigned the Contributor role for the resource group that contains the database.
- E. Your IP address must be allowed to connect to the database.

**Correct Answer: BCE**

Incorrect Answers:

A, D: Resource group permissions is not required to query an Azure SQL database table.

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/security/authentication-access/getting-started-with-database-engine-permissions?view=sql-server-ver15>

*Community vote distribution*

BCE (100%)

Which clause should you use in a SELECT statement to combine rows in one table with rows in another table?

- A. SET
- B. VALUES
- C. KEY
- D. JOIN

**Correct Answer:** D

Reference:

<https://www.tutorialspoint.com/sql/sql-using-joins.htm>

*Community vote distribution*

D (100%)

Your company needs to ensure that an Azure virtual machine can connect to Azure SQL databases without exposing the databases to the internet. What should you use?

- A. Azure Application Gateway
- B. Azure Traffic Manager
- C. Azure DNS
- D. Azure Private Link

**Correct Answer:** D

Azure Private Link enables you to access Azure PaaS Services (for example, Azure Storage and SQL Database) and Azure hosted customer-owned/partner services over a private endpoint in your virtual network.

Traffic between your virtual network and the service travels the Microsoft backbone network. Exposing your service to the public internet is no longer necessary

Reference:

<https://techcommunity.microsoft.com/t5/azure-database-support-blog/azure-sql-db-private-link-private-endpoint-connectivity/ba-p/1235573>

*Community vote distribution*

D (100%)

**DRAG DROP -**

Match the Azure SQL services to the appropriate use cases.

To answer, drag the appropriate service from the column on the left to its use case on the right. Each service may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

**Azure SQL services    Answer Area**

Azure SQL Database elastic pool		A serverless configuration
Azure SQL Database single database		A database that has the highest compatibility with on-premises Microsoft SQL Server
Azure SQL Managed instance		A low-cost, low-maintenance database

**Azure SQL services    Answer Area**

Azure SQL Database elastic pool	Azure SQL Database single database	A serverless configuration
Correct Answer: Azure SQL Database single database	Azure SQL Managed instance	A database that has the highest compatibility with on-premises Microsoft SQL Server
Azure SQL Managed instance	Azure SQL Database elastic pool	A low-cost, low-maintenance database

**Box 1: Azure SQL Database single database**

Serverless is a compute tier for single databases in Azure SQL Database that automatically scales compute based on workload demand and bills for the amount of compute used per second. The serverless compute tier also automatically pauses databases during inactive periods when only storage is billed and automatically resumes databases when activity returns.

Scenarios well suited for serverless compute

Single databases with intermittent, unpredictable usage patterns interspersed with periods of inactivity, and lower average compute utilization over time.

Single databases in the provisioned compute tier that are frequently rescaled and customers who prefer to delegate compute rescaling to the service.

New single databases without usage history where compute sizing is difficult or not possible to estimate prior to deployment in SQL Database.

**Box 2: Azure SQL Managed Instance**

Azure SQL Managed Instance is the intelligent, scalable cloud database service that combines the broadest SQL Server database engine compatibility with all the benefits of a fully managed and evergreen platform as a service.

**Box 3: Azure SQL Database elastic pool**

Azure SQL Database elastic pools are a simple, cost-effective solution for managing and scaling multiple databases that have varying and unpredictable usage demands. The databases in an elastic pool are on a single server and share a set number of resources at a set price.

Elastic pools in SQL Database enable software as a service (SaaS) developers to optimize the price performance for a group of databases within a prescribed budget while delivering performance elasticity for each database.

**Reference:**

<https://docs.microsoft.com/en-us/azure/azure-sql/database/serverless-tier-overview?view=azuresql> <https://docs.microsoft.com/en-us/azure/azure-sql/database/elastic-pool-overview?view=azuresql> <https://docs.microsoft.com/en-us/azure/azure-sql/managed-instance/sql-managed-instance-paas-overview>

Which T-SQL statement should be used to instruct a database management system to use an index instead of performing a full table scan?

- A. SELECT
- B. WHERE
- C. JOIN

**Correct Answer: A**

Table hints override the default behavior of the Query Optimizer for the duration of the data manipulation language (DML) statement by specifying a locking method, one or more indexes, a query-processing operation such as a table scan or index seek, or other options. Table hints are specified in the FROM clause of the DML statement and affect only the table or view referenced in that clause.

This applies to the following commands:

DELETE -

INSERT -

SELECT -

UPDATE -

MERGE -

Reference:

<https://docs.microsoft.com/en-us/sql/t-sql/queries/hints-transact-sql-table>

*Community vote distribution*

B (89%)

11%

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

### Answer Area

▼
Azure SQL Database
Azure Synapse Analytics
Azure Database for MariaDB
SQL Server on Azure virtual machines

is a platform as a service (PaaS) relational data service that uses massively parallel processing (MPP).

Correct Answer:

▼
Azure SQL Database
Azure Synapse Analytics
Azure Database for MariaDB
SQL Server on Azure virtual machines

is a platform as a service (PaaS) relational data service that uses massively parallel processing (MPP).

Azure Synapse Analytics is a platform as a service (PAAS) that combines data integration, warehousing, and analytics into one solution. Azure Synapse Analytics offers cloud-based, relational data warehousing services, massively parallel processing (MPP) scale-out technology, and enough computational power to efficiently manage petabytes and petabytes of data.

Incorrect:

- \* Azure Database for MariaDB is a relational database service based on the open-source MariaDB Server engine. It's a fully managed database as a service offering that can handle mission-critical workloads with predictable performance and dynamic scalability.
- \* Azure SQL Database is a fully managed platform as a service (PaaS) database engine that handles most of the database management functions such as upgrading, patching, backups, and monitoring without user involvement. Azure SQL Database is always running on the latest stable version of the SQL Server database engine and patched OS with 99.99% availability. PaaS capabilities built into Azure SQL Database enable you to focus on the domain-specific database administration and optimization activities that are critical for your business.

Reference:

<https://cswsolutions.com/blog/posts/2021/august/what-is-azure-synapse-analytics/> <https://www.integrate.io/blog/what-is-azure-synapse-analytics/>

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

### Answer Area

A view
A clustered index
A stored procedure
A nonclustered index

physically sorts the data in a table  
based on the values in a specified column.

Correct Answer:

A view
A clustered index
A stored procedure
A nonclustered index

physically sorts the data in a table  
based on the values in a specified column.

A clustered index defines the order in which data is physically stored in a table. Table data can be sorted in only way, therefore, there can be only one clustered index per table. In SQL Server, the primary key constraint automatically creates a clustered index on that particular column.

Reference:

<https://www.sqlshack.com/what-is-the-difference-between-clustered-and-non-clustered-indexes-in-sql-server>

HOTSPOT -

You have the following SQL query.

```
INSERT INTO dbo.Products (ProductID, ProductName, Price, ProductDescription)
VALUES (1, 'Clamp', 12.48, 'Workbench clamp');
```

What are dbo.Products and ProductName? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

### Answer Area

Dbo.Products:

A column
A database
<b>A table</b>
An index

ProductName:

A column
A database
<b>A table</b>
An index

### Answer Area

Dbo.Products:

A column
A database
<b>A table</b>
An index

Correct Answer:

ProductName:

<b>A column</b>
A database
A table
An index

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

### Answer Area

In a relational database, the ▼ uniquely identifies each row in a table

foreign key
primary key
WHERE clause
nonclustered index

### Answer Area

**Correct Answer:** In a relational database, the ▼ uniquely identifies each row in a table

foreign key
primary key
WHERE clause
nonclustered index

A primary key is a special relational database table column (or combination of columns) designated to uniquely identify each table record (row).

Reference:

<https://www.techopedia.com/definition/5547/primary-key>

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

### Answer Area

▼ presents content defined by a query.

A heap
A stored procedure
A view
An index

### Answer Area

**Correct Answer:** ▼ presents content defined by a query.

A heap
A stored procedure
A view
An index

A database view is a subset of a database and is based on a query that runs on one or more database tables.

Reference:

[https://www.ibm.com/docs/SSWT9A\\_7.6.0/com.ibm.mbs.doc/configur/c\\_views.html](https://www.ibm.com/docs/SSWT9A_7.6.0/com.ibm.mbs.doc/configur/c_views.html)

Which Azure service provides the highest compatibility for databases migrated from Microsoft SQL Server 2019 Enterprise edition?

- A. Azure SQL Database
- B. Azure Database for MySQL
- C. Azure SQL Managed Instance
- D. an Azure SQL Database elastic pool

**Correct Answer: C**

SQL Managed Instance has near 100% compatibility with the latest SQL Server (Enterprise Edition) database engine, providing a native virtual network (VNet) implementation that addresses common security concerns, and a business model favorable for existing SQL Server customers.

Note: Azure SQL Managed Instance is the intelligent, scalable cloud database service that combines the broadest SQL Server database engine compatibility with all the benefits of a fully managed and evergreen platform as a service.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/managed-instance/sql-managed-instance-paas-overview?view=azuresql>

*Community vote distribution*

C (100%)

Which setting can only be configured during the creation of an Azure Cosmos DB account?

- A. geo-redundancy
- B. multi-region writes
- C. production or non-production account type
- D. API

**Correct Answer: D**

You must create a separate account for each API.

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/how-to-manage-database-account>

*Community vote distribution*

D (83%)

A (17%)

**DRAG DROP -**

Match the types of data stores to the appropriate scenarios.

To answer, drag the appropriate data store type from the column on the left to its scenario on the right. Each data store type may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

**Data Store Types**

- Graph
- Object
- Key/value

**Answer Area**


A list of application user names and, for each, the default language

A collection of medical images and their associated metadata.

Employee data that shows the relationships between employees

**Correct Answer:****Data Store Types**

- Graph
- Object
- Key/value

**Answer Area**

Key/value
Object
Graph

A list of application user names and, for each, the default language

A collection of medical images and their associated metadata.

Employee data that shows the relationships between employees

**Box 1: Key/value -**

A key/value store associates each data value with a unique key.

**Box 2: Object -**

Object storage is optimized for storing and retrieving large binary objects (images, files, video and audio streams, large application data objects and documents, virtual machine disk images).

**Box 3: Graph -**

A graph database stores two types of information, nodes and edges. Edges specify relationships between nodes. Nodes and edges can have properties that provide information about that node or edge, similar to columns in a table. Edges can also have a direction indicating the nature of the relationship.

**Reference:**

<https://docs.microsoft.com/en-us/azure/architecture/guide/technology-choices/data-store-overview>

You have an Azure Cosmos DB account that uses the Core (SQL) API.

Which two settings can you configure at the container level? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. the throughput
- B. the read region
- C. the partition key
- D. the API

**Correct Answer:** AC

Reference:

<https://www.sqlshack.com/start-your-journey-with-azure-cosmos-db/>

*Community vote distribution*

AC (100%)

Your company is designing a data store that will contain student data. The data has the following format.

StudentNumber	StudentInformation
7634634	First name: Ben Last: Smith Preferred Name: Benjamin
7634634	First Name: Dominik Last Name: Paiha Email Address: dpaiha@contoso.com MCP ID: 931817
7634636	First Name: Reshma Last Name: Patel Phone number: 514-555-1101
7634637	First Name: Yun-Feng Last Name: Peng

Which type of data store should you use?

- A. graph
- B. key/value
- C. object
- D. columnar

**Correct Answer:** D

*Community vote distribution*

D (86%)

11%

Which storage solution supports role-based access control (RBAC) at the file and folder level?

- A. Azure Disk Storage
- B. Azure Data Lake Storage
- C. Azure Blob storage
- D. Azure Queue storage

**Correct Answer: B**

Reference:

<https://docs.microsoft.com/en-us/azure/storage/blobs/data-lake-storage-access-control>

*Community vote distribution*

B (100%)

You need to store data in Azure Blob storage for seven years to meet your company's compliance requirements. The retrieval time of the data is unimportant. The solution must minimize storage costs.

Which storage tier should you use?

- A. Archive
- B. Hot
- C. Cool

**Correct Answer: A**

Reference:

[https://cloud.netapp.com/blog/azure-blob-storage-pricing-the-complete-guide-azure-cvo-blg#H1\\_4](https://cloud.netapp.com/blog/azure-blob-storage-pricing-the-complete-guide-azure-cvo-blg#H1_4)

*Community vote distribution*

A (100%)

Which type of non-relational data store supports a flexible schema, stores data as JSON files, and stores all the data for an entity in the same document?

- A. document
- B. columnar
- C. graph
- D. time series

**Correct Answer: A**

*Community vote distribution*

A (100%)

**DRAG DROP -**

Match the Azure Cosmos DB APIs to the appropriate data structures.

To answer, drag the appropriate API from the column on the left to its data structure on the right. Each API may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

**APIs**

- Cassandra API
- Gremlin API
- MongoDB API
- Table API

**Answer Area**

- Graph data
- JSON documents
- Key/value data

**Correct Answer:**

**APIs**

- Cassandra API
- Gremlin API
- MongoDB API
- Table API

**Answer Area**

- Gremlin API Graph data
- MongoDB API JSON documents
- Table API Key/value data

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/faq>

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

### Answer Area

To configure an Azure Storage account to support both security at the folder level and atomic directory manipulation,

- enable the hierarchical namespace.
- set Account kind to BlobStorage.
- set Performance to Premium.
- set Replication to Read-access geo-redundant storage (RA-GRS).

Correct Answer:

### Answer Area

To configure an Azure Storage account to support both security at the folder level and atomic directory manipulation,

- enable the hierarchical namespace.
- set Account kind to BlobStorage.
- set Performance to Premium.
- set Replication to Read-access geo-redundant storage (RA-GRS).

A key mechanism that allows Azure Data Lake Storage Gen2 to provide file system performance at object storage scale and prices is the addition of a hierarchical namespace. This allows the collection of objects/files within an account to be organized into a hierarchy of directories and nested subdirectories in the same way that the file system on your computer is organized. With a hierarchical namespace enabled, a storage account becomes capable of providing the scalability and cost-effectiveness of object storage, with file system semantics that are familiar to analytics engines and frameworks.

One advantage of hierarchical namespace is atomic directory manipulation: Object stores approximate a directory hierarchy by adopting a convention of embedding slashes (/) in the object name to denote path segments.

Reference:

<https://docs.microsoft.com/en-us/azure/storage/blobs/data-lake-storage-namespace>

**HOTSPOT -**

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

**Answer Area**

You can query a graph database in Azure Cosmos DB

as a JSON document by using a SQL-like language.
as a partitioned row store by using Cassandra Query Language (CQL).
as a partitioned row store by using Language-Integrated Query (LINQ).
as nodes and edges by using the Gremlin language.

**Correct Answer:****Answer Area**

You can query a graph database in Azure Cosmos DB

as a JSON document by using a SQL-like language.
as a partitioned row store by using Cassandra Query Language (CQL).
as a partitioned row store by using Language-Integrated Query (LINQ).
as nodes and edges by using the Gremlin language.

Reference:

<https://www.sqlshack.com/graph-database-implementation-with-azure-cosmos-db-using-the-api/>

When provisioning an Azure Cosmos DB account, which feature provides redundancy within an Azure region?

- A. multi-master replication
- B. Availability Zones
- C. the strong consistency level
- D. automatic failover

**Correct Answer: B**

With Availability Zone (AZ) support, Azure Cosmos DB will ensure replicas are placed across multiple zones within a given region to provide high availability and resiliency to zonal failures.

Note: Azure Cosmos DB provides high availability in two primary ways. First, Azure Cosmos DB replicates data across regions configured within a Cosmos account. Second, Azure Cosmos DB maintains 4 replicas of data within a region.

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/high-availability>

*Community vote distribution*

B (100%)

What is a benefit of the Azure Cosmos DB Table API as compared to Azure Table storage?

- A. provides resiliency if an Azure region fails
- B. supports partitioning
- C. provides a higher storage capacity
- D. supports a multi-master model

**Correct Answer:** D

Multi-master support for Azure Cosmos DB is now available in all public regions.

Azure CosmosDB table API is a key-value storage hosted in the cloud. It's a part of Azure Cosmos DB, that is Microsoft's multi-model database.

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/table-support>

*Community vote distribution*

D (100%)

Your company needs to design a database that shows how changes in network traffic in one area of a network affect network traffic in other areas of the network.

Which type of data store should you use?

- A. graph
- B. key/value
- C. document
- D. columnar

**Correct Answer:** A

Data as it appears in the real world is naturally connected. Traditional data modeling focuses on defining entities separately and computing their relationships at runtime. While this model has its advantages, highly connected data can be challenging to manage under its constraints. A graph database approach relies on persisting relationships in the storage layer instead, which leads to highly efficient graph retrieval operations. Azure Cosmos

DB's Gremlin API supports the property graph model.

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/graph-introduction#introduction-to-graph-databases>

*Community vote distribution*

A (100%)

**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:

**Answer Area**

<b>Statements</b>	<b>Yes</b>	<b>No</b>
Azure Databricks can consume data from Azure SQL Database	<input type="radio"/>	<input type="radio"/>
Azure Databricks can consume data from Azure Event Hubs	<input type="radio"/>	<input type="radio"/>
Azure Databricks can consume data from Azure Cosmos DB	<input type="radio"/>	<input type="radio"/>

Correct Answer:

**Answer Area**

<b>Statements</b>	<b>Yes</b>	<b>No</b>
Azure Databricks can consume data from Azure SQL Database	<input checked="" type="radio"/>	<input type="radio"/>
Azure Databricks can consume data from Azure Event Hubs	<input checked="" type="radio"/>	<input type="radio"/>
Azure Databricks can consume data from Azure Cosmos DB	<input checked="" type="radio"/>	<input type="radio"/>

Box 1: Yes -

Azure Databricks can consume data from SQL Databases using JDBC and from SQL Databases using the Apache Spark connector.

The Apache Spark connector for Azure SQL Database and SQL Server enables these databases to act as input data sources and output data sinks for Apache

Spark jobs.

Box 2: Yes -

You can stream data into Azure Databricks using Event Hubs.

Box 3: Yes -

You can run Spark jobs with data stored in Azure Cosmos DB using the Cosmos DB Spark connector. Cosmos can be used for batch and stream processing, and as a serving layer for low latency access.

You can use the connector with Azure Databricks or Azure HDInsight, which provide managed Spark clusters on Azure.

Reference:

<https://docs.microsoft.com/en-us/azure/databricks/data/data-sources/sql-databases-azure> <https://docs.microsoft.com/en-us/azure/databricks/scenarios/databricks-stream-from-eventhubs>

**DRAG DROP -**

Match the datastore services to the appropriate descriptions.

To answer, drag the appropriate service from the column on the left to its description on the right. Each service may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

Services	Answer Area
Azure Blob storage	Service
Azure Cosmos DB	Service
Azure Files	
Azure Table storage	

**Correct Answer:**

Services	Answer Area
Azure Blob storage	Azure Cosmos DB
Azure Cosmos DB	Enables the use of SQL queries against data stored in JSON documents
Azure Files	Azure Files
Azure Table storage	Enables users to access data by using the Server Message Block (SMB) version 3 protocol

**Box 1: Azure Cosmos DB -**

In Azure Cosmos DB's SQL (Core) API, items are stored as JSON. The type system and expressions are restricted to deal only with JSON types.

**Box 2: Azure Files -**

Azure Files offers native cloud file sharing services based on the SMB protocol.

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/sql-query-working-with-json> <https://cloud.netapp.com/blog/azure-smb-server-message-block-in-the-cloud-for-azure-files>

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

### Answer Area

When provisioning an Azure Cosmos DB

	▼
account	
container	
database	
item	

, you need to specify which type of API you will use.

Correct Answer:

### Answer Area

When provisioning an Azure Cosmos DB

	▼
account	
container	
database	
item	

, you need to specify which type of API you will use.

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/create-cosmosdb-resources-portal>

You need to store data by using Azure Table storage.

What should you create first?

- A. an Azure Cosmos DB instance
- B. a storage account
- C. a blob container
- D. a table

Correct Answer: B

First create an Azure storage account, then use Table service in the Azure portal to create a table.

Note: An Azure storage account contains all of your Azure Storage data objects: blobs, files, queues, and tables.

Reference:

<https://docs.microsoft.com/en-us/azure/storage/tables/table-storage-quickstart-portal> <https://docs.microsoft.com/en-us/azure/storage/common/storage-account-create>

*Community vote distribution*

B (100%)

You need to recommend a data store service that meets the following requirements:

⇒ Native SQL API access

⇒ Configurable indexes

What should you recommend?

- A. Azure Files
- B. Azure Blob storage
- C. Azure Table storage
- D. Azure Cosmos DB

**Correct Answer: D**

Azure Cosmos DB comes with native Core (SQL) API support.

In Azure Cosmos DB, data is indexed following indexing policies that are defined for each container. The default indexing policy for newly created containers enforces range indexes for any string or number. This policy can be overridden with your own custom indexing policy.

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/sql/how-to-manage-indexing-policy>

*Community vote distribution*

D (100%)

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:

## Answer Area

Statements	Yes	No
Azure Table storage within a single Azure Storage account supports multiple concurrent reads in different Azure regions.	<input type="radio"/>	<input type="radio"/>
Azure Table storage within a single Azure Storage account supports multiple concurrent writes in different Azure regions.	<input type="radio"/>	<input type="radio"/>
An Azure Cosmos DB account that uses the Table API supports multiple concurrent reads in different Azure regions.	<input type="radio"/>	<input type="radio"/>
An Azure Cosmos DB account that uses the Table API supports multiple concurrent writes in different Azure regions.	<input type="radio"/>	<input type="radio"/>

Correct Answer:

## Answer Area

Statements	Yes	No
Azure Table storage within a single Azure Storage account supports multiple concurrent reads in different Azure regions.	<input checked="" type="radio"/>	<input type="radio"/>
Azure Table storage within a single Azure Storage account supports multiple concurrent writes in different Azure regions.	<input type="radio"/>	<input checked="" type="radio"/>
An Azure Cosmos DB account that uses the Table API supports multiple concurrent reads in different Azure regions.	<input checked="" type="radio"/>	<input type="radio"/>
An Azure Cosmos DB account that uses the Table API supports multiple concurrent writes in different Azure regions.	<input checked="" type="radio"/>	<input type="radio"/>

Box 1: Yes -

For read access to the secondary region, configure your storage account to use read-access geo-redundant storage (RA-GRS) or read-access geo-zone-redundant storage (RA-GZRS).

Box 2: No -

Box 3: Yes -

Box 4: Yes -

Azure Cosmos DB supports multi-region writes.

Reference:

<https://docs.microsoft.com/en-us/azure/storage/common/storage-redundancy> <https://manojchoudhari.wordpress.com/2019/12/16/azure-cosmos-db-enable-multi-region-writes>

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

### Answer Area

To configure an Azure Storage account to support access control lists

that have object-level permissions,

enable the hierarchical namespace.
set Account kind to BlobStorage.
set Performance to Premium.
set Replication to Read-access geo-redundant storage (RA-GRS).

Correct Answer:

### Answer Area

To configure an Azure Storage account to support access control lists

that have object-level permissions,

enable the hierarchical namespace.
set Account kind to BlobStorage.
set Performance to Premium.
set Replication to Read-access geo-redundant storage (RA-GRS).

A key mechanism that allows Azure Data Lake Storage Gen2 to provide file system performance at object storage scale and prices is the addition of a hierarchical namespace. This allows the collection of objects/files within an account to be organized into a hierarchy of directories and nested subdirectories in the same way that the file system on your computer is organized. With a hierarchical namespace enabled, a storage account becomes capable of providing the scalability and cost-effectiveness of object storage, with file system semantics that are familiar to analytics engines and frameworks.

Reference:

<https://docs.microsoft.com/en-us/azure/storage/blobs/data-lake-storage-namespace>

Your company needs to design a database that illustrates the relationships between utilization levels of individual network devices across a local area network.

Which type of data store should you use?

- A. graph
- B. key/value
- C. document
- D. columnar

**Correct Answer: A**

Data as it appears in the real world is naturally connected. Traditional data modeling focuses on defining entities separately and computing their relationships at runtime. While this model has its advantages, highly connected data can be challenging to manage under its constraints.

A graph database approach relies on persisting relationships in the storage layer instead, which leads to highly efficient graph retrieval operations. Azure Cosmos DB's Gremlin API supports the property graph model.

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/graph-introduction#introduction-to-graph-databases>

*Community vote distribution*

A (100%)

You manage an application that stores data in a shared folder on a Windows server.

You need to move the shared folder to Azure Storage.

Which type of Azure Storage should you use?

- A. queue
- B. blob
- C. file
- D. table

**Correct Answer: C**

Azure file shares can be mounted concurrently by cloud or on-premises deployments of Windows, Linux, and macOS. Azure file shares can also be cached on

Windows Servers with Azure File Sync for fast access near where the data is being used.

Reference:

<https://azure.microsoft.com/en-us/services/storage/files/>

*Community vote distribution*

C (100%)

Your company is designing a database that will contain session data for a website. The data will include notifications, personalization attributes, and products that are added to a shopping cart.

Which type of data store will provide the lowest latency to retrieve the data?

- A. key/value
- B. graph
- C. columnar
- D. document

**Correct Answer:** C

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/data-guide/technology-choices/analytical-data-stores>

*Community vote distribution*

C (53%) A (47%)

You have an application that runs on Windows and requires access to a mapped drive.

Which Azure service should you use?

- A. Azure Files
- B. Azure Blob storage
- C. Azure Cosmos DB
- D. Azure Table storage

**Correct Answer:** A

Azure Files is Microsoft's easy-to-use cloud file system. Azure file shares can be seamlessly used in Windows and Windows Server.

To use an Azure file share with Windows, you must either mount it, which means assigning it a drive letter or mount point path, or access it via its UNC path.

Reference:

<https://docs.microsoft.com/en-us/azure/storage/files/storage-how-to-use-files-windows>

*Community vote distribution*

A (100%)

**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:

**Answer Area**

Statements	Yes	No
The Azure Cosmos DB API is configured separately for each database in an Azure Cosmos DB account.	<input type="radio"/>	<input type="radio"/>
Partition keys are used in Azure Cosmos DB to optimize queries.	<input type="radio"/>	<input type="radio"/>
Items contained in the same Azure Cosmos DB logical partition can have different partition keys.	<input type="radio"/>	<input type="radio"/>

Correct Answer:

**Answer Area**

Statements	Yes	No
The Azure Cosmos DB API is configured separately for each database in an Azure Cosmos DB account.	<input type="radio"/>	<input checked="" type="radio"/>
Partition keys are used in Azure Cosmos DB to optimize queries.	<input checked="" type="radio"/>	<input type="radio"/>
Items contained in the same Azure Cosmos DB logical partition can have different partition keys.	<input type="radio"/>	<input checked="" type="radio"/>

Box 1: No -

The API determines the type of account to create. Azure Cosmos DB provides five APIs: Core (SQL) and MongoDB for document data, Gremlin for graph data,

Azure Table, and Cassandra. Currently, you must create a separate account for each API.

Box 2: Yes -

Azure Cosmos DB uses partitioning to scale individual containers in a database to meet the performance needs of your application. In partitioning, the items in a container are divided into distinct subsets called logical partitions. Logical partitions are formed based on the value of a partition key that is associated with each item in a container.

Box 3: No -

Logical partitions are formed based on the value of a partition key that is associated with each item in a container.

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/partitioning-overview>

Your company is designing an application that will write a high volume of JSON data and will have an application-defined schema. Which type of data store should you use?

- A. columnar
- B. key/value
- C. document
- D. graph

**Correct Answer: B**

A key/value store associates each data value with a unique key.

An application can store arbitrary data as a set of values. Any schema information must be provided by the application. The key/value store simply retrieves or stores the value by key.

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/guide/technology-choices/data-store-overview>

*Community vote distribution*

C (78%)      B (22%)

You need to recommend a non-relational data store that is optimized for storing and retrieving text files, videos, audio streams, and virtual disk images. The data store must store data, some metadata, and a unique ID for each file.

Which type of data store should you recommend?

- A. key/value
- B. columnar
- C. object
- D. document

**Correct Answer: C**

Object storage is optimized for storing and retrieving large binary objects (images, files, video and audio streams, large application data objects and documents, virtual machine disk images). Large data files are also popularly used in this model, for example, delimiter file (CSV), parquet, and ORC. Object stores can manage extremely large amounts of unstructured data.

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/guide/technology-choices/data-store-overview>

*Community vote distribution*

C (100%)

Your company is designing a data store for internet-connected temperature sensors.

The collected data will be used to analyze temperature trends.

Which type of data store should you use?

- A. relational
- B. time series
- C. graph
- D. columnar

**Correct Answer: B**

Time series data is a set of values organized by time. Time series databases typically collect large amounts of data in real time from a large number of sources.

Updates are rare, and deletes are often done as bulk operations. Although the records written to a time-series database are generally small, there are often a large number of records, and total data size can grow rapidly.

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/guide/technology-choices/data-store-overview>

*Community vote distribution*

B (100%)

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:

**Answer Area**

Statements	Yes	No
------------	-----	----

Copying data to Azure Data Lake Storage from another Azure region results in extra cost.



You can use blob, table, and file storage in the same Azure Storage account.



You implement Azure Data Lake Storage by creating an Azure Storage account.



**Answer Area**

Statements	Yes	No
------------	-----	----

**Correct Answer:** Copying data to Azure Data Lake Storage from another Azure region results in extra cost.



You can use blob, table, and file storage in the same Azure Storage account.



You implement Azure Data Lake Storage by creating an Azure Storage account.



Reference:

<https://docs.microsoft.com/en-us/azure/data-lake-store/data-lake-store-get-started-portal> <https://docs.microsoft.com/en-us/azure/storage/common/storage-account-overview> <https://azure.microsoft.com/en-us/pricing/details/bandwidth/>

**HOTSPOT -**

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

**Answer Area**

When using the Azure Cosmos DB Gremlin API, the container resource type is projected as a

graph.
table.
partition key.
document.

**Answer Area**

**Correct Answer:**

When using the Azure Cosmos DB Gremlin API, the container resource type is projected as a

graph.
table.
partition key.
document.

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/create-graph-gremlin-console>

At which two levels can you set the throughput for an Azure Cosmos DB account? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. database
- B. item
- C. container
- D. partition

**Correct Answer: AC**

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/set-throughput>

*Community vote distribution*

AC (100%)

**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:

**Answer Area**

Statements	Yes	No
Azure Table storage supports multiple read replicas.	<input type="radio"/>	<input type="radio"/>
Azure Table storage supports multiple write regions.	<input type="radio"/>	<input type="radio"/>
The Azure Cosmos DB Table API supports multiple read replicas.	<input type="radio"/>	<input type="radio"/>
The Azure Cosmos DB Table API supports multiple write regions.	<input type="radio"/>	<input type="radio"/>

**Answer Area**

Statements	Yes	No
Azure Table storage supports multiple read replicas.	<input checked="" type="radio"/>	<input type="radio"/>
Azure Table storage supports multiple write regions.	<input type="radio"/>	<input checked="" type="radio"/>
The Azure Cosmos DB Table API supports multiple read replicas.	<input checked="" type="radio"/>	<input type="radio"/>
The Azure Cosmos DB Table API supports multiple write regions.	<input checked="" type="radio"/>	<input type="radio"/>

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/high-availability>

What is a characteristic of non-relational data?

- A. no indexes
- B. self-describing entities
- C. a well-defined schema
- D. no unique key values

**Correct Answer: D**

A relational database works by linking information from multiple tables through the use of keys.

The non-relational database, or NoSQL database, stores data. However, unlike the relational database, there are no tables, rows, primary keys or foreign keys.

Instead, the non-relational database uses a storage model optimized for specific requirements of the type of data being stored.

Reference:

<https://www.pluralsight.com/blog/software-development/relational-vs-non-relational-databases>

*Community vote distribution*

B (67%)

D (33%)

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

### Answer Area

▼
A hierarchical namespace
Azure Synapse Link
PolyBase
The Data Movement Service (DMS)

is an Azure Synapse Analytics feature that retrieves data from Azure Blob storage by using Transact-SQL queries.

Correct Answer:

### Answer Area

▼
A hierarchical namespace
Azure Synapse Link
PolyBase
The Data Movement Service (DMS)

is an Azure Synapse Analytics feature that retrieves data from Azure Blob storage by using Transact-SQL queries.

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/polybase/polybase-guide?view=sql-server-ver15>

You need to gather real-time telemetry data from a mobile application.

Which type of workload describes this scenario?

- A. Online Transaction Processing (OLTP)
- B. batch
- C. massively parallel processing (MPP)
- D. streaming

Correct Answer: D

Reference:

<https://docs.microsoft.com/en-in/azure/azure-monitor/overview>

*Community vote distribution*

D (100%)

You have a dedicated SQL pool in Azure Synapse Analytics that is only used actively every night for eight hours. You need to minimize the cost of the dedicated SQL pool as much as possible during idle times. The solution must ensure that the data remains intact.

What should you do on the dedicated SQL pool?

- A. Scale down the data warehouse units (DWUs).
- B. Pause the pool.
- C. Create a user-defined restore point.
- D. Delete the pool

**Correct Answer:** B

Reference:

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

*Community vote distribution*

B (100%)

Which Azure Data Factory component initiates the execution of a pipeline?

- A. a control flow
- B. a trigger
- C. a parameter
- D. an activity

**Correct Answer:** B

Reference:

<https://docs.microsoft.com/en-us/azure/data-factory/concepts-pipeline-execution-triggers#trigger-execution>

*Community vote distribution*

B (100%)

Your company has a reporting solution that has paginated reports. The reports query a dimensional model in a data warehouse. Which type of processing does the reporting solution use?

- A. stream processing
- B. batch processing
- C. Online Analytical Processing (OLAP)
- D. Online Transaction Processing (OLTP)

**Correct Answer:** C

Reference:

<https://datawarehouseinfo.com/how-does-oltp-differ-from-olap-database/>

**DRAG DROP -**

Match the types of activities to the appropriate Azure Data Factory activities.

To answer, drag the appropriate activity type from the column on the left to its Data Factory activity on the right. Each activity type may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

**Activity Types      Answer Area****Control****Copy****Data movement****Mapping data flow****Data transformation****Lookup**

<b>Activity Types</b>	<b>Answer Area</b>
Correct Answer: <b>Control</b>	<b>Data movement</b> <b>Copy</b>
<b>Data movement</b>	<b>Data transformation</b> <b>Mapping data flow</b>
<b>Data transformation</b>	<b>Control</b> <b>Lookup</b>

Box 1: Data movement -

Box 2: Data transformation -  
A pipeline could contain a set of activities that ingest and clean log data, and then kick off a mapping data flow to analyze the log data.

Box 3: Control -  
Lookup Activity is a control flow activity.  
Lookup Activity can be used to read or look up a record/ table name/ value from any external source. This output can further be referenced by succeeding activities.

Reference:  
<https://docs.microsoft.com/en-us/azure/data-factory/concepts-pipelines-activities#data-transformation-activities>

What are three characteristics of an Online Transaction Processing (OLTP) workload? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. denormalized data
- B. heavy writes and moderate reads
- C. light writes and heavy reads
- D. schema on write
- E. schema on read
- F. normalized data

**Correct Answer:** *BDF*

B: Transactional data tends to be heavy writes, moderate reads.

D: Typical traits of transactional data include: schema on write, strongly enforced

F: Transactional data tends to be highly normalized.

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/data-guide/relational-data/online-transaction-processing>

*Community vote distribution*

BDF (88%)	12%
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Which two activities can be performed entirely by using the Microsoft Power BI service without relying on Power BI Desktop? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. report and dashboard creation
- B. report sharing and distribution
- C. data modeling
- D. data acquisition and preparation

**Correct Answer:** *AD*

*Community vote distribution*

AB (100%)
-----------

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

### Answer Area

In Azure Data Factory, you can use

▼	
a control flow	
a dataset	
a linked service	
an integration runtime	

to orchestrate pipeline

activities that depend on the output of other pipeline activities.

Correct Answer:

### Answer Area

In Azure Data Factory, you can use

▼	
a control flow	
a dataset	
a linked service	
an integration runtime	

to orchestrate pipeline

activities that depend on the output of other pipeline activities.

Reference:

<https://docs.microsoft.com/en-us/azure/data-factory/frequently-asked-questions>

You need to develop a solution to provide data to executives. The solution must provide an interactive graphical interface, depict various key performance indicators, and support data exploration by using drill down.

What should you use in Microsoft Power BI?

- A. a view
- B. a report
- C. a dataflow
- D. Microsoft Power Apps

Correct Answer: B

Reference:

<https://docs.microsoft.com/en-us/power-bi/consumer/end-user-dashboards> <https://docs.microsoft.com/en-us/power-bi/visuals/power-bi-visualization-kpi> <https://docs.microsoft.com/en-us/power-bi/consumer/end-user-drill>

Which two Azure services can be used to provision Apache Spark clusters? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. Azure Time Series Insights
- B. Azure HDInsight
- C. Azure Databricks
- D. Azure Log Analytics

**Correct Answer: BC**

Reference:

<https://www.sqlshack.com/a-beginners-guide-to-azure-databricks/>

*Community vote distribution*

BC (100%)

You have a quality assurance application that reads data from a data warehouse.

Which type of processing does the application use?

- A. Online Transaction Processing (OLTP)
- B. batch processing
- C. Online Analytical Processing (OLAP)
- D. stream processing

**Correct Answer: A**

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/data-guide/relational-data/online-transaction-processing>

*Community vote distribution*

C (100%)

Which three objects can be added to a Microsoft Power BI dashboard? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. a report page
- B. a Microsoft PowerPoint slide
- C. a visualization from a report
- D. a dataflow
- E. a text box

**Correct Answer:** ACE

Reference:

<https://docs.microsoft.com/en-us/power-bi/consumer/end-user-dashboards> <https://docs.microsoft.com/en-us/power-bi/create-reports/service-dashboard-add-widget>

*Community vote distribution*

ACE (100%)

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:

**Answer Area**

Statements	Yes	No
------------	-----	----

A Microsoft Power BI dashboard is associated with a single workspace.

A Microsoft Power BI dashboard can only display visualizations from a single dataset.

A Microsoft Power BI dashboard can display visualizations from a Microsoft Excel workbook.

**Answer Area**

Statements	Yes	No
------------	-----	----

**Correct Answer:**

A Microsoft Power BI dashboard is associated with a single workspace.

A Microsoft Power BI dashboard can only display visualizations from a single dataset.

A Microsoft Power BI dashboard can display visualizations from a Microsoft Excel workbook.

Reference:

<https://docs.microsoft.com/en-us/power-bi/connect-data/service-datasets-across-workspaces> <https://docs.microsoft.com/en-us/power-bi/consumer/end-user-dashboards> <https://powerbi.microsoft.com/en-us/excel-and-power-bi/>

Which Azure Data Factory component provides the compute environment for activities?

- A. SSIS packages
- B. an integration runtime
- C. a control flow
- D. a pipeline

**Correct Answer: B**

The Integration Runtime (IR) is the compute infrastructure used by Azure Data Factory to provide the following data integration capabilities across different network environments:

- ⇒ Data Flow
- ⇒ Data movement
- ⇒ Activity dispatch
- ⇒ SSIS package execution

Reference:

<https://docs.microsoft.com/en-us/azure/data-factory/concepts-integration-runtime>

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

**Answer Area**

A Microsoft Power BI

▼
dashboard
interactive report
<b>paginated report</b>
subscription

enables users to create highly formatted,

fixed-layout documents optimized for printing and archiving.

**Correct Answer:**

**Answer Area**

A Microsoft Power BI

▼
dashboard
interactive report
<b>paginated report</b>
subscription

enables users to create highly formatted,

fixed-layout documents optimized for printing and archiving.

Paginated Reports in Power BI now allows users to generate these fixed-layout documents optimized for printing and archiving, such as PDF and Word files.

These document-style reports with visualizations that provide additional control, like which tables expand horizontally and vertically to display all their data and continue from page to page as needed.

Reference:

<https://powerbi.microsoft.com/en-us/blog/announcing-paginated-reports-in-power-bi-general-availability/>

What are two uses of data visualization? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. Represent trends and patterns over time
- B. Implement machine learning to predict future values
- C. Communicate the significance of data
- D. Enforce business logic across reports

**Correct Answer:** AC

Data visualization is a key component in being able to gain insight into your data. It helps make big and small data easier for humans to understand. It also makes it easier to detect patterns, trends, and outliers in groups of data.

Data visualization brings data to help you find key business insights quickly and effectively.

Reference:

<https://docs.microsoft.com/en-us/azure/synapse-analytics/spark/apache-spark-data-visualization>

You need to use Transact-SQL to query files in Azure Data Lake Storage Gen 2 from an Azure Synapse Analytics data warehouse.

What should you use to query the files?

- A. Azure Functions
- B. Microsoft SQL Server Integration Services (SSIS)
- C. PolyBase
- D. Azure Data Factory

**Correct Answer:** C

Reference:

<https://docs.databricks.com/data/data-sources/azure/synapse-analytics.html>

**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:

**Answer Area**

Statements	Yes	No
You can copy a dashboard between Microsoft Power BI workspaces.	<input type="radio"/>	<input type="radio"/>
A Microsoft Power BI dashboard can only display visualizations from a single dataset.	<input type="radio"/>	<input type="radio"/>
A Microsoft Power BI dashboard can display visualizations from a Microsoft Excel workbook.	<input type="radio"/>	<input type="radio"/>

**Correct Answer:****Answer Area**

Statements	Yes	No
You can copy a dashboard between Microsoft Power BI workspaces.	<input type="radio"/>	<input checked="" type="radio"/>
A Microsoft Power BI dashboard can only display visualizations from a single dataset.	<input type="radio"/>	<input checked="" type="radio"/>
A Microsoft Power BI dashboard can display visualizations from a Microsoft Excel workbook.	<input checked="" type="radio"/>	<input type="radio"/>

Box 1: No -

You can duplicate a dashboard. The duplicate ends up in the same Power BI workspace.

There is no current functionality that allows you to move reports from one workspace to another.

Box 2: No -

Box 3: Yes -

Reference:

<https://docs.microsoft.com/en-us/power-bi/connect-data/service-datasets-across-workspaces> <https://docs.microsoft.com/en-us/power-bi/consumer/end-user-dashboards> <https://powerbi.microsoft.com/en-us/excel-and-power-bi/>

What are three characteristics of an Online Transaction Processing (OLTP) workload? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. denormalized data
- B. heavy writes and moderate reads
- C. light writes and heavy reads
- D. schema defined in a database
- E. schema defined when reading unstructured data from a database
- F. normalized data

**Correct Answer:** BDF

B: Transactional data tends to be heavy writes, moderate reads.

D: Typical traits of transactional data include: schema on write, strongly enforced. The schema is defined in a database.

F: Transactional data tends to be highly normalized.

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/data-guide/relational-data/online-transaction-processing>

*Community vote distribution*

BDF (100%)

What is the primary purpose of a data warehouse?

- A. to provide answers to complex queries that rely on data from multiple sources
- B. to provide transformation services between source and target data stores
- C. to provide read-only storage of relational and non-relational historical data
- D. to provide storage for transactional line-of-business (LOB) applications

**Correct Answer:** C

Consider using a data warehouse when you need to keep historical data separate from the source transaction systems for performance reasons. Data warehouses make it easy to access historical data from multiple locations, by providing a centralized location using common formats, keys, and data models.

Query both relational and nonrelational data.

Incorrect Answers:

D: Data warehouses don't need to follow the same terse data structure you may be using in your OLTP databases.

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/data-guide/relational-data/data-warehousing>

*Community vote distribution*

A (80%)

C (20%)

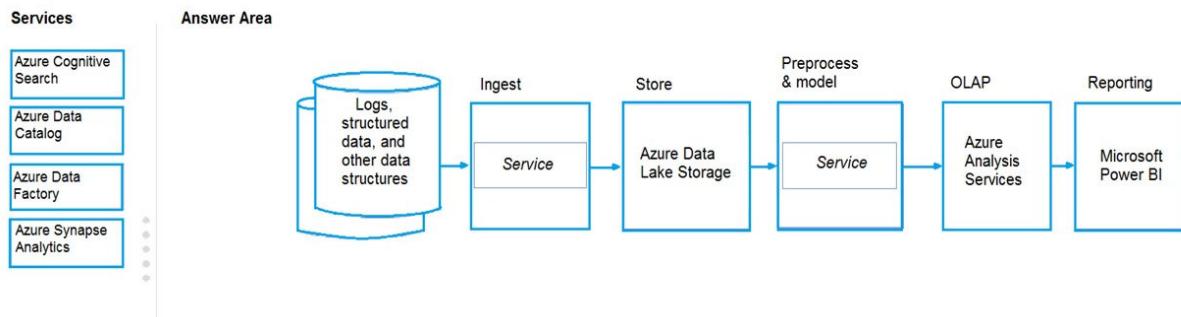
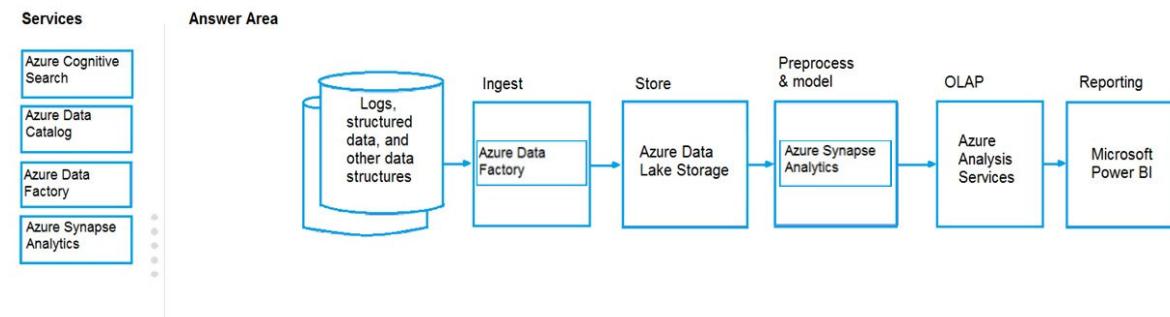
**DRAG DROP -**

Match the Azure services to the appropriate locations in the architecture.

To answer, drag the appropriate service from the column on the left to its location on the right. Each service may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

**Correct Answer:**

Box Ingest: Azure Data Factory -

You can build a data ingestion pipeline with Azure Data Factory (ADF).

Box Preprocess & model: Azure Synapse Analytics

Use Azure Synapse Analytics to preprocess data and deploy machine learning models.

Reference:

<https://docs.microsoft.com/en-us/azure/machine-learning/how-to-data-ingest-adf> <https://docs.microsoft.com/en-us/azure/machine-learning/team-data-science-process/sqldw-walkthrough>

**DRAG DROP -**

Match the types of workloads to the appropriate scenarios.

To answer, drag the appropriate workload type from the column on the left to its scenario on the right. Each workload type may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

Workload Types	Answer Area
Batch	Workload type Analyzing historical data containing web traffic collected during the previous year.
Streaming	Workload type Classifying images that were uploaded last month.
	Workload type Tracking in real time how many people are currently using a website.

**Correct Answer:**

Workload Types	Answer Area
Batch	Batch Analyzing historical data containing web traffic collected during the previous year.
Streaming	Batch Classifying images that were uploaded last month.
	Streaming Tracking in real time how many people are currently using a website.

**Box 1: Batch -**

The batch processing model requires a set of data that is collected over time while the stream processing model requires data to be fed into an analytics tool, often in micro-batches, and in real-time.

The batch Processing model handles a large batch of data while the Stream processing model handles individual records or micro-batches of few records.

In Batch Processing, it processes over all or most of the data but in Stream Processing, it processes over data on a rolling window or most recent record.

**Box 2: Batch -****Box 3: Streaming -**

Reference:

<https://k21academy.com/microsoft-azure/dp-200/batch-processing-vs-stream-processing>

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

### Answer Area

In a data warehousing workload, data

from a single source is distributed to multiple locations
from multiple sources is combined in a single location
is added to a queue for multiple systems to process
is used to train machine learning models

Correct Answer:

### Answer Area

In a data warehousing workload, data

from a single source is distributed to multiple locations
from multiple sources is combined in a single location
is added to a queue for multiple systems to process
is used to train machine learning models

Note: The data warehouse workload encompasses:

- ⇒ The entire process of loading data into the warehouse
- ⇒ Performing data warehouse analysis and reporting
- ⇒ Managing data in the data warehouse
- ⇒ Exporting data from the data warehouse

Reference:

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

**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:

**Answer Area**

Statements	Yes	No
A pipeline is a representation of a data structure within Azure Data Factory	<input type="radio"/>	<input type="radio"/>
Azure Data Factory pipelines can execute other pipelines	<input type="radio"/>	<input type="radio"/>
A processing step within an Azure Data Factory pipeline is an activity	<input type="radio"/>	<input type="radio"/>

Correct Answer:

**Answer Area**

Statements	Yes	No
A pipeline is a representation of a data structure within Azure Data Factory	<input type="radio"/>	<input checked="" type="radio"/>
Azure Data Factory pipelines can execute other pipelines	<input checked="" type="radio"/>	<input type="radio"/>
A processing step within an Azure Data Factory pipeline is an activity	<input checked="" type="radio"/>	<input type="radio"/>

Box 1: No -

A pipeline is a logical grouping of activities that together perform a task.

Box 2: Yes -

You can construct pipeline hierarchies with data factory.

Box 3: Yes -

A pipeline is a logical grouping of activities that together perform a task.

Reference:

<https://mrpaulandrew.com/2019/09/25/azure-data-factory-pipeline-hierarchies-generation-control/>

**DRAG DROP -**

Match the Azure services to the appropriate requirements.

To answer, drag the appropriate service from the column on the left to its requirement on the right. Each service may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

Services	Answer Area	
Azure Data Lake Storage	Service	Output data to Parquet format
Azure SQL Database	Service	Store data that is in Parquet format
Azure Synapse Analytics	Service	Persist a tabular representation of data that is stored in Parquet format

**Correct Answer:**

Services	Answer Area	
Azure Data Lake Storage	Azure SQL Database	Output data to Parquet format
Azure SQL Database	Azure Data Lake Storage	Store data that is in Parquet format
Azure Synapse Analytics	Azure Synapse Analytics	Persist a tabular representation of data that is stored in Parquet format

Box 1: Azure Data Factory -

Box 2: Azure Data Lake Storage -

Azure Data Lake Storage (ADLA) now natively supports Parquet files. ADLA adds a public preview of the native extractor and outputter for the popular Parquet file format

Box 3: Azure Synapse Analytics -

Use Azure Synapse Analytics Workspaces.

Reference:

<https://docs.microsoft.com/en-us/azure/data-factory/supported-file-formats-and-compression-codecs>

**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:

**Answer Area**

Statements	Yes	No
Azure Synapse Analytics scales storage and compute independently	<input type="radio"/>	<input type="radio"/>
Azure Synapse Analytics can be paused to reduce compute costs	<input type="radio"/>	<input type="radio"/>
An Azure Synapse Analytics data warehouse has a fixed storage capacity	<input type="radio"/>	<input type="radio"/>

Correct Answer:

**Answer Area**

Statements	Yes	No
Azure Synapse Analytics scales storage and compute independently	<input checked="" type="radio"/>	<input type="radio"/>
Azure Synapse Analytics can be paused to reduce compute costs	<input checked="" type="radio"/>	<input type="radio"/>
An Azure Synapse Analytics data warehouse has a fixed storage capacity	<input type="radio"/>	<input checked="" type="radio"/>

Box 1: Yes -

Compute is separate from storage, which enables you to scale compute independently of the data in your system.

Box 2: Yes -

You can use the Azure portal to pause and resume the dedicated SQL pool compute resources.

Pausing the data warehouse pauses compute. If your data warehouse was paused for the entire hour, you will not be charged compute during that hour.

Box 3: No -

Storage is sold in 1 TB allocations. If you grow beyond 1 TB of storage, your storage account will automatically grow to 2 TBs.

Reference:

<https://azure.microsoft.com/en-us/pricing/details/synapse-analytics/>

What should you use to build a Microsoft Power BI paginated report?

- A. Charticulator
- B. Power BI Desktop
- C. the Power BI service
- D. Power BI Report Builder

**Correct Answer:** D

Power BI Report Builder is the standalone tool for authoring paginated reports for the Power BI service.

Reference:

<https://docs.microsoft.com/en-us/power-bi/paginated-reports/paginated-reports-report-builder-power-bi>

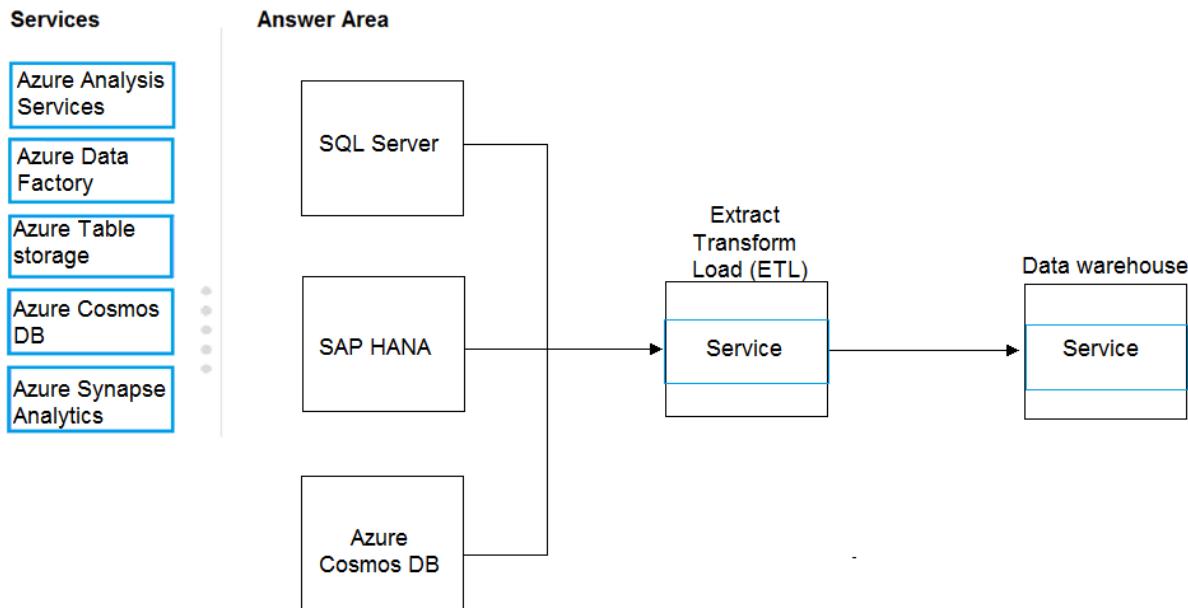
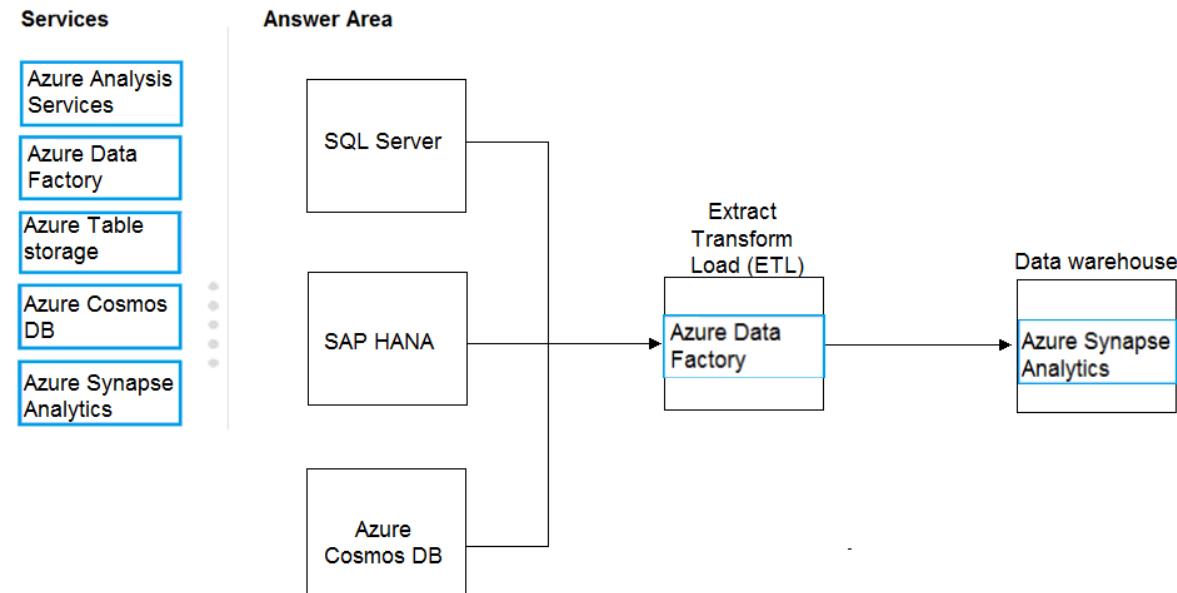
**DRAG DROP -**

Match the Azure services to the appropriate locations in the architecture.

To answer, drag the appropriate service from the column on the left to its location on the right. Each service may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

**Correct Answer:****Box 1: Azure Data factory -**

Relevant Azure service for the three ETL phases are Azure Data Factory and SQL Server Integration Services (SSIS).

**Box 2: Azure Synapse Analytics -**

You can copy and transform data in Azure Synapse Analytics by using Azure Data Factory

Note: Azure Synapse Analytics connector is supported for the following activities:

- ⇒ Copy activity with supported source/sink matrix table
- ⇒ Mapping data flow

⇒ Lookup activity  
⇒ GetMetadata activity

Reference:  
<https://docs.microsoft.com/en-us/azure/architecture/data-guide/relational-data/etl> <https://docs.microsoft.com/en-us/azure/data-factory/connector-azure-sql-data-warehouse>

Question #169

Topic 1

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:

### Answer Area

Statements	Yes	No
Azure Databricks is an Apache Spark-based analytics platform.	<input type="radio"/>	<input type="radio"/>
Azure Analysis Services is used for transactional workloads.	<input type="radio"/>	<input type="radio"/>
Azure Data Factory orchestrates data integration workflows.	<input type="radio"/>	<input type="radio"/>

### Answer Area

Statements	Yes	No
Correct Answer: Azure Databricks is an Apache Spark-based analytics platform.	<input checked="" type="radio"/>	<input type="radio"/>
Azure Analysis Services is used for transactional workloads.	<input type="radio"/>	<input checked="" type="radio"/>
Azure Data Factory orchestrates data integration workflows.	<input checked="" type="radio"/>	<input type="radio"/>

Reference:

<https://docs.microsoft.com/en-us/azure/databricks/scenarios/what-is-azure-databricks> <https://docs.microsoft.com/en-us/azure/analysis-services/analysis-services-overview> <https://docs.microsoft.com/en-us/azure/data-factory/introduction>

Question #170

Topic 1

Which scenario is an example of a streaming workload?

- A. sending transactions that are older than a month to an archive
- B. sending transactions daily from point of sale (POS) devices
- C. sending telemetry data from edge devices
- D. sending cloud infrastructure metadata every 30 minutes

Correct Answer: C

Community vote distribution

C (100%)

**HOTSPOT -**

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

**Answer Area**

Batch workloads

- |   |
|---|
| process data in memory, row-by-row.                             |
| collect and process data at most once a day.                    |
| process data as new data is received in near real-time.         |
| collect data and then process the data when a condition is met. |

**Answer Area**

Batch workloads

**Correct Answer:**

- |  |
|--|
| process data in memory, row-by-row.                                    |
| collect and process data at most once a day.                           |
| process data as new data is received in near real-time.                |
| <b>collect data and then process the data when a condition is met.</b> |

**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:

**Answer Area****Statements****Yes****No**

Processing salary payments once a month is an example of a batch workload.

A wind turbine that sends 50 sensor readings per second is an example of a streaming workload.

A home electricity meter that sends readings once a day to an energy provider is an example of a streaming workload.

 
**Answer Area****Statements****Yes****No**

**Correct Answer:** Processing salary payments once a month is an example of a batch workload.

A wind turbine that sends 50 sensor readings per second is an example of a streaming workload.

A home electricity meter that sends readings once a day to an energy provider is an example of a streaming workload.

A bar chart showing year-to-date sales by region is an example of which type of analytics?

- A. predictive
- B. prescriptive
- C. descriptive
- D. diagnostic

**Correct Answer:** D

*Community vote distribution*

C (100%)

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:

### Answer Area

Statements	Yes	No
Stream processing has access to the most recent data received or data within a rolling time window.	<input type="radio"/>	<input type="radio"/>
Batch processing must occur immediately and have latency in the order of seconds or milliseconds.	<input type="radio"/>	<input type="radio"/>
Stream processing is used for simple response functions, aggregates, or calculations such as rolling averages.	<input type="radio"/>	<input type="radio"/>

### Answer Area

Statements	Yes	No
Correct Answer: Stream processing has access to the most recent data received or data within a rolling time window.	<input checked="" type="radio"/>	<input type="radio"/>
Batch processing must occur immediately and have latency in the order of seconds or milliseconds.	<input type="radio"/>	<input checked="" type="radio"/>
Stream processing is used for simple response functions, aggregates, or calculations such as rolling averages.	<input type="radio"/>	<input checked="" type="radio"/>

Reference:

<https://www.precisely.com/blog/big-data/big-data-101-batch-stream-processing>

You need to perform hybrid transactional and analytical processing (HTAP) queries against Azure Cosmos DB data sources by using Azure Synapse Analytics.

What should you use?

- A. Synapse pipelines
- B. a Synapse SQL pool
- C. Synapse Link
- D. Synapse Studio

**Correct Answer:** C

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/synapse-link>

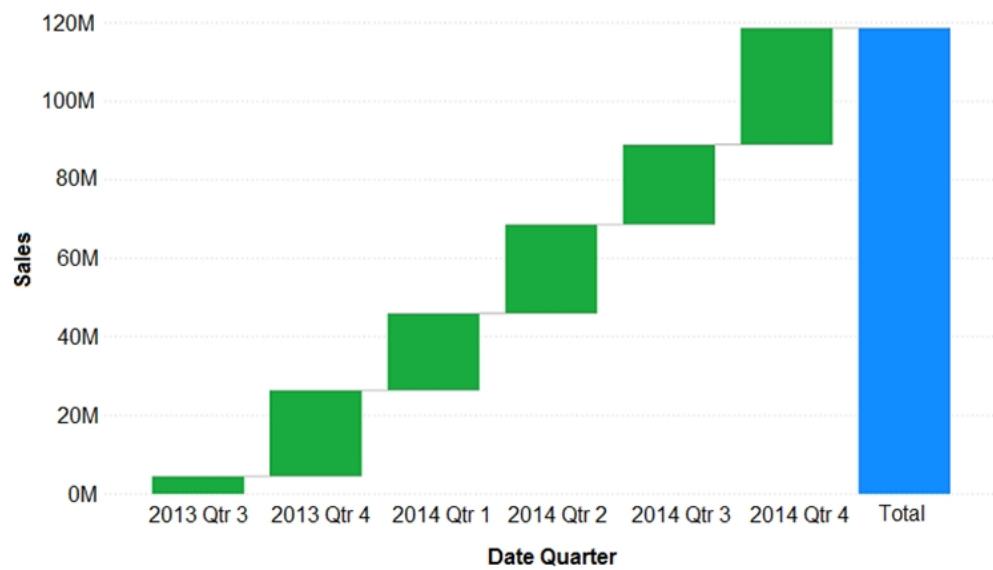
*Community vote distribution*

C (100%)

You need to create a visualization of running sales totals per quarter as shown in the following exhibit.

**Sales by Year and Quarter**

- Increase
- Decrease
- Total



What should you create in Power BI Desktop?

- A. a waterfall chart
- B. a ribbon chart
- C. a bar chart
- D. a decomposition tree

**Correct Answer:** A

Reference:

<https://docs.microsoft.com/en-us/power-bi/visuals/power-bi-visualization-types-for-reports-and-q-and-a>

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

**Answer Area**

When using the Azure Cosmos DB Gremlin API, the container resource type is projected as a

graph
table
partition key
document

Correct Answer:

**Answer Area**

When using the Azure Cosmos DB Gremlin API, the container resource type is projected as a

graph
table
partition key
document

You have the following two tables of customer data.

CustomerID	NameStyle	Title	FirstName	MiddleName	LastName
29486	0	Ms.	Kim	NULL	Abercrombie
29489	0	Ms.	Frances	B.	Adams
29490	0	Ms.	Margaret	J.	Smith
29492	0	Mr.	Jay	NULL	Adams

CustomerID	AddressID	AddressType	ModifiedDate
29486	621	Main Office	9/1/05 0:00
29489	1069	Main Office	7/1/05 0:00
29490	887	Main Office	9/1/06 0:00
29492	618	Main Office	12/1/06 0:00
29494	537	Main Office	9/1/05 0:00

Which type of data do the tables contain?

- A. structured
- B. non-relational
- C. semi-structured
- D. unstructured

**Correct Answer:** D

*Community vote distribution*

A (100%)

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

**Answer Area**

You can query a graph database in Azure Cosmos DB

- |  |
|--|
| as nodes and edges by using the Gremlin language                   |
| as partitioned row store by using Cassandra Query Language (CQL)   |
| as partitioned row store by using Language-Integrated Query (LINQ) |

**Correct Answer:**

**Answer Area**

You can query a graph database in Azure Cosmos DB

- |  |
|--|
| as nodes and edges by using the Gremlin language                   |
| as partitioned row store by using Cassandra Query Language (CQL)   |
| as partitioned row store by using Language-Integrated Query (LINQ) |

Which Azure Blob Storage feature enables you to sync a Blob Storage account to an external cache?

- A. the Hot access tier
- B. change feed
- C. snapshots
- D. versioning

**Correct Answer: A**

*Community vote distribution*

B (77%)

D (23%)

You have an on-premises Microsoft SQL Server database.

You need to migrate the database to the cloud. The solution must meet the following requirements:

- \* Minimize maintenance effort.
- \* Support the Database Mail and Service Broker features.

What should you include in the solution?

- A. Azure SQL Database single database
- B. an Azure SQL Database elastic pool
- C. Azure SQL Managed instance
- D. SQL Server on Azure virtual machines

**Correct Answer: C**

*Community vote distribution*

C (100%)

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

**Answer Area**

An extract, transform, and load (ETL) process requires

- a matching schema in the data source and the data target
- a target data store powerful enough to transform data
- data that is fully processed before being loaded to the target data store
- that the data target be a relational database

Correct Answer:

**Answer Area**

An extract, transform, and load (ETL) process requires

- a matching schema in the data source and the data target
- a target data store powerful enough to transform data
- data that is fully processed before being loaded to the target data store
- that the data target be a relational database

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

**Answer Area**

Batch workloads

- always process data in memory, row-by-row
- collect and process data at most once a day
- process data as new data is received in near real-time
- collect data and then process the data when a condition is met

Correct Answer:

**Answer Area**

Batch workloads

- always process data in memory, row-by-row
- collect and process data at most once a day
- process data as new data is received in near real-time
- collect data and then process the data when a condition is met

**DRAG DROP -**

Your company plans to load data from a customer relationship management (CRM) system to a data warehouse by using an extract, load, and transform (ELT) process.

Where does data processing occur for each stage of the ELT process? To answer, drag the appropriate locations to the correct stages. Each location may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.

Select and Place:

**Locations**

A standalone data analysis tool

The CRM system

The data warehouse

**Answer Area**

Extract:

Location

Load:

Location

Transform:

Location

Correct Answer:

**Locations**

A standalone data analysis tool

The CRM system

The data warehouse

**Answer Area**

Extract:

The CRM system

Load:

The data warehouse

Transform:

A standalone data analysis tool

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

**Answer Area**

Descriptive analytics tells you

what is most likely to occur in the future
what occurred in the past
which actions you can perform to affect outcomes
why something occurred in the past

**Correct Answer:**

**Answer Area**

Descriptive analytics tells you

what is most likely to occur in the future
what occurred in the past
which actions you can perform to affect outcomes
why something occurred in the past

What is a function of a modern data warehouse?

- A. supports batch processing only
- B. supports real-time and batch processing
- C. provides built-in or native online analytical processing
- D. stores raw data only

**Correct Answer: C**

A data warehouse is a centralized repository of integrated data from one or more disparate sources. Data warehouses store current and historical data and are used for reporting and analysis of the data.

The purpose of the analytical data store layer is to satisfy queries issued by analytics and reporting tools against the data warehouse.

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/data-guide/relational-data/data-warehousing>

*Community vote distribution*

B (75%)

C (25%)

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

### Answer Area

An Azure Storage account must have   enabled to support Azure Data Lake Storage.

Blob soft delete
Hierarchical namespace
Large file shares
Versioning

### Answer Area

**Correct Answer:** An Azure Storage account must have   enabled to support Azure Data Lake Storage.

Blob soft delete
Hierarchical namespace
Large file shares
Versioning

What can be used with native notebook support to query and visualize data by using a web-based interface?

- A. Azure Databricks
- B. pgAdmin
- C. Microsoft Power BI

**Correct Answer: A**

*Community vote distribution*

A (100%)

You have data saved in the following format.

```
{  
    "firstname": "John",  
    "lastName": "Doe",  
    "age": "23",  
    "hobbies": [  
        { "type": "Sports", "value": "Golf" },  
        { "type": "Leisure", "value": "Reading" },  
        { "type": "Leisure", "value": "Guitar" }  
    ]  
}
```

Which format was used?

- A. XML
- B. HTML
- C. YAML
- D. JSON

**Correct Answer: D**

*Community vote distribution*

D (100%)

You have data saved in the following format.

```
<Person Age= "23">  
    <FirstName>John</FirstName>  
    <LastName>Smith</LastName>  
    <Hobbies>  
        <Hobby Type= "Sports">Golf</Hobby>  
        <Hobby Type= "Leisure">Reading</Hobby>  
        <Hobby Type= "Leisure">Guitar</Hobby>  
    </Hobbies>  
</Person>
```

Which format was used?

- A. JSON
- B. YAML
- C. HTML
- D. XML

**Correct Answer: D**

*Community vote distribution*

D (100%)

Which database transaction property ensures that transactional changes to a database are preserved during unexpected operating system restarts?

- A. consistency
- B. atomicity
- C. durability
- D. isolation

**Correct Answer:** C

*Community vote distribution*

C (100%)

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

### Answer Area

A relational database must be used when

a dynamic schema is required.
data will be stored as key/value pairs.
storing large images and videos.
strong consistency guarantees are required.

**Correct Answer:**

### Answer Area

A relational database must be used when

a dynamic schema is required.
data will be stored as key/value pairs.
storing large images and videos.
strong consistency guarantees are required.

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

### Answer Area

Relational data is stored in

a file system as unstructured data.
a hierachal folder structure.
a tabular form of rows and columns.
comma-separated value (CSV) files.

### Answer Area

Correct Answer: Relational data is stored in

a file system as unstructured data.
a hierachal folder structure.
a tabular form of rows and columns.
comma-separated value (CSV) files.

Which database transaction property ensures that individual transactions are executed only once and either succeed in their entirety or roll back?

- A. atomicity
- B. durability
- C. isolation
- D. consistency

Correct Answer: A

*Community vote distribution*

A (100%)

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

### Answer Area

A clustered index	▼
A FileTable	
A foreign key	
A stored procedure	

is an object associated with a table  
that sorts on their key values.

Correct Answer:

A clustered index	▼
A FileTable	
A foreign key	
A stored procedure	

is an object associated with a table  
that sorts on their key values.

Which Azure Storage service implements the key/value model?

- A. Azure Queue
- B. Azure Files
- C. Azure Table
- D. Azure Blob

Correct Answer: C

*Community vote distribution*

C (100%)

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

## Answer Area

Social media users and followers in a graph database  
is an example of

semi-structured data.
structured data.
unstructured data.

Correct Answer:

## Answer Area

Social media users and followers in a graph database  
is an example of

semi-structured data.
structured data.
unstructured data.

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

## Answer Area

In a data warehousing workload, data

from a single source is distributed to multiple locations.
from multiple sources is combined in a single location.
is added to a queue for multiple systems to process.
is used to train machine learning models.

Correct Answer:

## Answer Area

In a data warehousing workload, data

from a single source is distributed to multiple locations.
from multiple sources is combined in a single location.
is added to a queue for multiple systems to process.
is used to train machine learning models.

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

## Answer Area

In batch processing,

- data is always inserted one row at a time.
- data is processed in real-time
- delay in delivering data processing results is acceptable.
- processing can only execute serially.

Correct Answer:

## Answer Area

In batch processing,

- data is always inserted one row at a time.
- data is processed in real-time
- delay in delivering data processing results is acceptable.
- processing can only execute serially.

You plan to deploy an app. The app requires a nonrelational data service that will provide latency guarantees of less than 10-ms for reads and writes.

What should you include in the solution?

- A. Azure Blob storage
- B. Azure Files
- C. Azure Table storage
- D. Azure Cosmos DB

Correct Answer: D

*Community vote distribution*

D (100%)

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

## Answer Area

A non-relational database

imposes a fixed schema on data
store entities without a unique key value
stores data in relational tables
stores data without a fixed schema

## Answer Area

Correct Answer: A non-relational database

imposes a fixed schema on data
store entities without a unique key value
stores data in relational tables
stores data without a fixed schema

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:

## Answer Area

Statements	Yes	No
In a transactional database that guarantees atomicity, all statements in a transaction must complete successfully or the transaction must roll back.	<input type="radio"/>	<input type="radio"/>
In a transactional database that guarantees consistency, all data changes will be logged and accounted for.	<input type="radio"/>	<input type="radio"/>
In a transactional database that guarantees isolation, processes can see only data in a consistent state.	<input type="radio"/>	<input type="radio"/>

Correct Answer:

## Answer Area

Statements	Yes	No
In a transactional database that guarantees atomicity, all statements in a transaction must complete successfully or the transaction must roll back.	<input type="radio"/>	<input checked="" type="radio"/>
In a transactional database that guarantees consistency, all data changes will be logged and accounted for.	<input type="radio"/>	<input checked="" type="radio"/>
In a transactional database that guarantees isolation, processes can see only data in a consistent state.	<input checked="" type="radio"/>	<input type="radio"/>

You have data saved in the following format.

```
FirstName, LastName, Age, LeisureHobby, SportsHobby
John, Smith, 23, Reading, Backteball
Ben, Smith, 21, Guitar Curling
```

Which format was used?

- A. YAML
- B. CSV
- C. JSON
- D. HTML

Correct Answer: A

*Community vote distribution*

B (100%)

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

### Answer Area

	▼
is responsible for managing the security of the data in a database.	
A data analyst	
A data engineer	
A data scientist	
A database administrator	

is responsible for managing the security of the data in a database.

Correct Answer:

### Answer Area

	▼
is responsible for managing the security of the data in a database.	
A data analyst	
A data engineer	
A data scientist	
A database administrator	

is responsible for managing the security of the data in a database.

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

### Answer Area

Backing up and restoring data are the responsibilities of a

	▼
data analyst	
data engineer	
data scientist	
database administrator	

Correct Answer:

### Answer Area

Backing up and restoring data are the responsibilities of a

	▼
data analyst	
data engineer	
data scientist	
database administrator	

What is required to provision Azure Data Lake Storage in an Azure Storage account?

- A. Versioning must be disabled.
- B. Hierarchical namespace must be disabled.
- C. Versioning must be enabled.
- D. Hierarchical namespace must be enabled.

**Correct Answer:** D

*Community vote distribution*

D (100%)

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

### Answer Area

Microsoft SQL Server database tables store

▼
non-relational data.
relational data.
semi-structured data.

### Answer Area

Correct Answer: Microsoft SQL Server database tables store

▼
non-relational data.
relational data.
semi-structured data.

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

### Answer Area

An Azure SQL Database elastic pool
An instance of SQL Server on Azure Virtual Machines
A single database in Azure SQL Database

can be used as part of a lift-and-shift solution for migrating an on-premises application to the cloud with minimal changes.

Correct Answer:

### Answer Area

An Azure SQL Database elastic pool
An instance of SQL Server on Azure Virtual Machines
A single database in Azure SQL Database

can be used as part of a lift-and-shift solution for migrating an on-premises application to the cloud with minimal changes.

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

### Answer Area

In Microsoft Power BI, a 

▼
---

 is a collection of visualizations that appear together on one or more pages.

▼
dashboard
dataset
report
tile

### Answer Area

Correct Answer: In Microsoft Power BI, a 

▼
---

 is a collection of visualizations that appear together on one or more pages.

▼
dashboard
dataset
report
tile

A Power BI dashboard is a single page, often called a canvas, that tells a story through visualizations. Because it's limited to one page, a well-designed dashboard contains only the highlights of that story. Readers can view related reports for the details.

Reference:

<https://docs.microsoft.com/en-us/power-bi/create-reports/service-dashboards>

**DRAG DROP -**

Match the processes to the appropriate scenarios.

To answer, drag the appropriate process from the column on the left to its scenario on the right. Each process may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

**Processes**

Data ingestion

Extract, load, and transform (ELT) processing

Extract, transform, and load (ETL) processing

**Answer Area**

Data is retrieved and processed before being saved to a target system

Data is saved to a target system, and then processed

Data is extracted from a source system, and then saved to a target system

**Correct Answer:****Processes**

Data ingestion

Extract, load, and transform (ELT) processing

Extract, transform, and load (ETL) processing

**Answer Area**

Data is retrieved and processed before being saved to a target system

Data is saved to a target system, and then processed

Data is extracted from a source system, and then saved to a target system

What is used to define a query in a stream processing jobs in Azure Stream Analytics?

- A. YAML
- B. KQL
- C. SQL
- D. XML

**Correct Answer: C**

*Community vote distribution*

C (100%)

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

▼	
An Azure SQL server	
An elastic pool	
The Data Migration Assistant (DMA)	
A virtual network	

enables multiple Azure SQL databases to share resources such as memory, data storage space, and processing power.

**Correct Answer:**

▼	
An Azure SQL server	
An elastic pool	
The Data Migration Assistant (DMA)	
A virtual network	

enables multiple Azure SQL databases to share resources such as memory, data storage space, and processing power.

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

XML-formatted files are examples of

▼	
relational data.	
semi-structured data.	
unstructured data.	

**Correct Answer:**

XML-formatted files are examples of

▼	
relational data.	
semi-structured data.	
unstructured data.	

In a fully normalized database, how is data read and written for a single entity?

- A. Data is read from multiple tables and written to multiple tables.
- B. Data is read from a single table and written to a single table.
- C. Data is read from a single table and written to multiple tables.
- D. Data is read from multiple tables and written to a single table.

**Correct Answer: B**

*Community vote distribution*

D (56%)

A (44%)

What is a primary characteristic of a relational database?

- A. a flexible data structure
- B. data is queried and manipulated by using a variant of the SQL language
- C. a lack of dependencies between tables
- D. a large amount of duplicate data

**Correct Answer:** D

*Community vote distribution*

B (100%)

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

**Answer Area**

The

ALTER
JOIN
SET
WHERE

clause can be used in Data Manipulation Language (DML) statements to specify the criteria that rows must match.

**Correct Answer:**

**Answer Area**

The

ALTER
JOIN
SET
WHERE

clause can be used in Data Manipulation Language (DML) statements to specify the criteria that rows must match.

Which statement is an example of Data Manipulation Language (DML)?

- A. GRANT
- B. INSERT
- C. REVOKE
- D. DROP

**Correct Answer:** B

*Community vote distribution*

B (100%)

What is a characteristic of a non-relational database?

- A. full support for Transact-SQL
- B. a fixed schema
- C. self-describing entities

**Correct Answer:** C

*Community vote distribution*

C (100%)

What should you use to automatically delete blobs from Azure Blob Storage?

- A. archive storage
- B. the change feed
- C. soft delete
- D. a lifecycle management policy

**Correct Answer:** D

*Community vote distribution*

D (100%)

In Azure Table storage, each row in a table must be uniquely identified by which two components? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A. a partition key
- B. a range
- C. a row key
- D. a timestamp

**Correct Answer:** AC

*Community vote distribution*

AC (100%)

HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

**Answer Area**

<input type="text"/>
A data analyst
A data engineer
A data scientist
A database administrator

is responsible for creating visuals and charts that help a company make informed decisions.

**Correct Answer:**

**Answer Area**

<input type="text"/>
A data analyst
A data engineer
A data scientist
A database administrator

is responsible for creating visuals and charts that help a company make informed decisions.

You need to store event log data that is semi-structured and received as the logs occur.

What should you use?

- A. Azure Table storage
- B. Azure Queue storage
- C. Azure Files

**Correct Answer: A**

*Community vote distribution*

A (46%)

B (27%)

C (27%)

Which Azure Cosmos DB API should you use for a graph database?

- A. Table
- B. Cassandra
- C. Core (SQL)
- D. Gremlin

**Correct Answer: D**

*Community vote distribution*

D (100%)

**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:

**Answer Area**

Statements	Yes	No
Azure Data Lake storage can be used as a staging area for ingested data before the data is converted into a format suitable for performing analytics.	<input type="radio"/>	<input type="radio"/>
Azure Data Factory is an analytics engine that uses a massively parallel processing (MPP) architecture.	<input type="radio"/>	<input type="radio"/>
Azure HDInsight enables you to build tabular models from multiple data sources to support online analytical processing (OLAP) queries.	<input type="radio"/>	<input type="radio"/>

**Correct Answer:****Answer Area**

Statements	Yes	No
Azure Data Lake storage can be used as a staging area for ingested data before the data is converted into a format suitable for performing analytics.	<input type="radio"/>	<input checked="" type="radio"/>
Azure Data Factory is an analytics engine that uses a massively parallel processing (MPP) architecture.	<input type="radio"/>	<input checked="" type="radio"/>
Azure HDInsight enables you to build tabular models from multiple data sources to support online analytical processing (OLAP) queries.	<input type="radio"/>	<input checked="" type="radio"/>

**HOTSPOT -**

Select the answer that correctly completes the sentence.

Hot Area:

**Answer Area**

	enables multiple Azure SQL databases to share resources such as memory, data storage space, and processing power.
An Azure SQL server	
An elastic pool	
The Data Migration Assistant (DMA)	
A virtual network	

**Correct Answer:****Answer Area**

	enables multiple Azure SQL databases to share resources such as memory, data storage space, and processing power.
An Azure SQL server	
An elastic pool	
The Data Migration Assistant (DMA)	
A virtual network	

A bank has a system that manages financial transactions.

When transferring money between accounts, the system must never retrieve a value for the source account that reflects the balance before the transfer and a value for the destination account that reflects the balance after the transfer.

Of which ACID semantic is this an example?

- A. atomicity
- B. durability
- C. consistency
- D. isolation

**Correct Answer: A**

*Community vote distribution*

D (100%)

**DRAG DROP**

Match the terms to the appropriate descriptions.

To answer, drag the appropriate term from the column on the left to its description on the right. Each term may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Term	Answer Area
Data warehouses	<input type="text"/>
Dimension tables	<input type="text"/>
Extract, transform, and load (ETL)	<input type="text"/>
Fact tables	<input type="text"/>
Online analytical processing (OLAP)	<input type="text"/>

<input type="checkbox"/> Extract, transform, and load (ETL)
<input type="checkbox"/> Fact tables
<input type="checkbox"/> Data warehouses

**Correct Answer:**

HOTSPOT

Select the answer that correctly completes the sentence.

**Answer Area**

When provisioning an Azure Cosmos DB  , you need to specify which type of API you will use.

account  
container  
database  
item

**Correct Answer:**



A data engineer is responsible for which task?

- A. Explore data to identify trends.
- B. Implement policies, tools, and processes for backup and recovery plans.
- C. Design and build analytical models.
- D. Design and implement data stores for analytical workloads.

**Correct Answer: B**

*Community vote distribution*

D (100%)

HOTSPOT

Select the answer that correctly completes the sentence.

**Answer Area**

The massively parallel processing (MPP) engine

of Azure Synapse Analytics

- distributes processing across compute nodes.
- distributes processing across control nodes.
- redirects client connections across compute nodes.
- redirects client connections across control nodes.

**Correct Answer:**

The massively parallel processing (MPP) engine  
of Azure Synapse Analytics       distributes processing across compute nodes.

HOTSPOT

Select the answer that correctly completes the sentence.

**Answer Area**

Data in a data warehouse can be aggregated and loaded into an online analytical processing (OLAP) model,  
which is also known as a

- cube.
- data lake.
- dimension.
- measure.

**Correct Answer:** is also known as a

cube.

HOTSPOT

Select the answer that correctly completes the sentence.

**Answer Area**

Bar charts  
Pie charts  
Scatter charts  
Tables

are used to compare two numeric measures and identify a relationship or correlation between them.

**Correct Answer:**

Scatter charts are used to

HOTSPOT

Select the answer that correctly completes the sentence.

**Answer Area**

A block of code that runs in a database is called

a stored procedure.  
a table.  
a view.  
an index.

**Correct Answer:**

a stored procedure.

Which file format has defined names and data types for each column and uses compressed columnar storage?

- A. HTML
- B. CSV
- C. Apache Parquet
- D. JSON

**Correct Answer:** C

**HOTSPOT**

Select the answer that correctly completes the sentence.

**Answer Area**

A relational database is appropriate for scenarios that involve a high volume of

changes to relationships between entities.  
 geographically distributed writes.  
 transactional writes.  
 writes that have varying data structures.

**Correct Answer:**

transactional writes.

**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.

**Answer Area****Statements****Yes****No**

Data stored in the Hot access tier of Azure Blob storage is stored on high-performance media.

The Cool access tier in Azure Blob storage incurs higher storage costs compared to the Hot access tier.

The Archive access tier in Azure Blob storage has the highest latency of the three available tiers.

**Correct Answer:****Statements****Yes****No**

Data stored in the Hot access tier of Azure Blob storage is stored on high-performance media.

The Cool access tier in Azure Blob storage incurs higher storage costs compared to the Hot access tier.

The Archive access tier in Azure Blob storage has the highest latency of the three available tiers.

**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.

**Answer Area**

Statements	Yes	No
Online transaction processing (OLTP) relies on a database system where data storage is optimized for both read and write operations.	<input type="radio"/>	<input type="radio"/>
Online analytical processing (OLAP) relies on a database system where data storage is optimized for both read and write operations.	<input type="radio"/>	<input type="radio"/>
Data warehouses are optimized for read operations.	<input type="radio"/>	<input type="radio"/>

**Answer Area**

Statements	Yes	No
Correct Answer: Online transaction processing (OLTP) relies on a database system where data storage is optimized for both read and write operations.	<input type="radio"/>	<input checked="" type="radio"/>
Online analytical processing (OLAP) relies on a database system where data storage is optimized for both read and write operations.	<input type="radio"/>	<input checked="" type="radio"/>
Data warehouses are optimized for read operations.	<input checked="" type="radio"/>	<input type="radio"/>

A retail point of sale (POS) system is an example of which type of solution?

- A. a data warehouse
- B. online analytical processing (OLAP)
- C. extract, transform, and load (ETL)
- D. online transaction processing (OLTP)

**Correct Answer: A**

*Community vote distribution*

D (100%)

HOTSPOT

Select the answer that correctly completes the sentence.

### Answer Area

In a graph database, edges specify relationships between

column families
facts
vertexes
tables

### Answer Area

**Correct Answer:** In a graph database, edges specify relationships between

column families
facts
vertexes
tables

You have structured data in tabular format.

What represents an individual instance of a data entity?

- A. a column
- B. a table
- C. a cell
- D. a row

**Correct Answer:** D

*Community vote distribution*

D (92%)

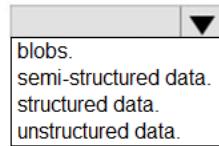
8%

**HOTSPOT**

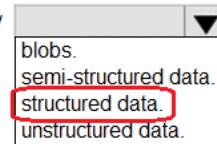
Select the answer that correctly completes the sentence.

**Answer Area**

Relational databases are commonly used to store and query

**Answer Area**

**Correct Answer:** Relational databases are commonly used to store and query



Which Azure SQL offering provides near-100 percent compatibility with on-premises Microsoft SQL Server instances, while providing automated updates, backups, and maintenance tasks?

- A. Azure SQL Managed Instance
- B. SQL Server on Azure Virtual Machines
- C. Azure SQL Database
- D. Azure SQL Edge

**Correct Answer: A**

*Community vote distribution*

A (100%)

HOTSPOT

Select the answer that correctly completes the sentence.

### Answer Area

Relational data uses  to enforce relationships between different tables.

- collections
- rows
- keys
- partitions

### Answer Area

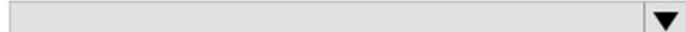
**Correct Answer:** Relational data uses  to enforce relationships between different tables.

- collections
- rows
- keys
- partitions

HOTSPOT

Select the answer that correctly completes the sentence.

### Answer Area

An extract load, and transform (ELT) process requires 

- a data pipeline that includes a transformation engine.
- a separate transformation engine.
- a target data store powerful enough to transform data.
- data that is fully processed before being loaded to the target data store

### Answer Area

**Correct Answer:** An extract load, and transform (ELT) process requires 

- a data pipeline that includes a transformation engine.
- a separate transformation engine.
- a target data store powerful enough to transform data.
- data that is fully processed before being loaded to the target data store

**HOTSPOT**

Select the answer that correctly completes the sentence.

**Answer Area**

In an analytical model designed as a star schema, the entities by which you aggregate or slice measures are called

cubes.
dimensions.
facts.
schemas.

**Answer Area**

**Correct Answer:** In an analytical model designed as a star schema, the entities by which you aggregate or slice measures are called

cubes.
dimensions.
facts.
schemas.

**DRAG DROP**

Match the data storage options to the appropriate types of data.

To answer, drag the appropriate data storage option from the column on the left to its data type on the right. Each data storage option may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

**Data storage options**

Azure Blob Storage

Azure Cosmos DB for NoSQL

Azure Data Factory

Azure SQL Database

**Answer Area**

Audio files

JSON documents

Tabular datasets

**Answer Area****Correct Answer:**

Azure Blob Storage      Audio files

Azure Cosmos DB for NoSQL      JSON documents

Azure Data Factory      Tabular datasets

**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.

**Answer Area**

Statements	Yes	No
The Cool access tier is the default tier of an Azure Storage account.	<input type="radio"/>	<input type="radio"/>
Append blobs are optimized for random read and write operations.	<input type="radio"/>	<input type="radio"/>
Retrieving data from the Archive access tier takes hours to complete.	<input type="radio"/>	<input type="radio"/>

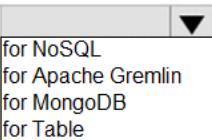
**Answer Area**

Statements	Yes	No
<b>Correct Answer:</b> The Cool access tier is the default tier of an Azure Storage account.	<input type="radio"/>	<input checked="" type="radio"/>
Append blobs are optimized for random read and write operations.	<input type="radio"/>	<input checked="" type="radio"/>
Retrieving data from the Archive access tier takes hours to complete.	<input checked="" type="radio"/>	<input type="radio"/>

**HOTSPOT**

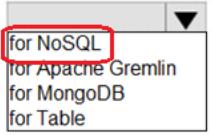
Select the answer that correctly completes the sentence.

**Answer Area**

The Azure Cosmos DB  API enables the use of **SELECT** statements to retrieve documents from Azure Cosmos DB.

for NoSQL  
for Apache Gremlin  
for MongoDB  
for Table

**Answer Area**

**Correct Answer:** The Azure Cosmos DB  API enables the use of **SELECT** statements to retrieve documents from Azure Cosmos DB.

for NoSQL  
for Apache Gremlin  
for MongoDB  
for Table

**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.

**Answer Area**

Statements	Yes	No
You create Azure File Storage in a storage account.	<input type="radio"/>	<input type="radio"/>
The Premium tier of Azure File Storage uses HDD-based hardware in a datacenter.	<input type="radio"/>	<input type="radio"/>
The Standard tier of Azure File Storage uses SSDs.	<input type="radio"/>	<input type="radio"/>

**Answer Area**

Statements	Yes	No
<b>Correct Answer:</b> You create Azure File Storage in a storage account.	<input checked="" type="checkbox"/>	<input type="radio"/>
The Premium tier of Azure File Storage uses HDD-based hardware in a datacenter.	<input type="radio"/>	<input checked="" type="checkbox"/>
The Standard tier of Azure File Storage uses SSDs.	<input type="radio"/>	<input checked="" type="checkbox"/>

**HOTSPOT**

Select the answer that correctly completes the sentence.

**Answer Area**

<input type="button" value="▼"/>	provides a full range of Power BI data modeling and report editing features.
Microsoft Power BI Desktop	
The Microsoft Power BI service	
The Microsoft Power BI phone app	

**Answer Area**

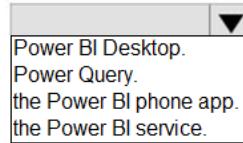
<b>Correct Answer:</b>	<input type="button" value="▼"/>	provides a full range of Power BI data modeling and report editing features.
	<input checked="" type="checkbox"/>	Microsoft Power BI Desktop
	<input type="checkbox"/>	The Microsoft Power BI service
	<input type="checkbox"/>	The Microsoft Power BI phone app

HOTSPOT

Select the answer that correctly completes the sentence.

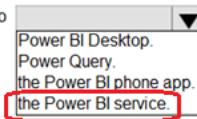
### Answer Area

After you create Microsoft Power BI data models and reports, you can publish them to



### Answer Area

**Correct Answer:** After you create Microsoft Power BI data models and reports, you can publish them to



Which type of Azure resource supports the serverless configuration of an Azure SQL database?

- A. SQL Server on Azure Virtual Machines
- B. an Azure SQL Database elastic pool
- C. a single database in Azure SQL Database
- D. Azure SQL Managed Instance

**Correct Answer:** C

*Community vote distribution*

C (100%)

**HOTSPOT**

Select the answer that correctly completes the sentence.

**Answer Area**

Online analytical processing (OAP) systems are particularly suitable for analytical workloads because data is

▼  
limited in size.  
optimized for transactions.  
pre-aggregated.  
read-only.

**Answer Area**

**Correct Answer:** Online analytical processing (OAP) systems are particularly suitable for analytical workloads because data is

▼  
limited in size.  
optimized for transactions.  
**pre-aggregated.**  
read-only.

**DRAG DROP**

Match the data processing languages to the appropriate real-time analytics services.

To answer, drag the appropriate language from the column on the left to its service on the right. Each language may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

**Language****Answer Area**

JavaScript	[ ]	Azure Data Explorer
KQL	[ ]	Azure Stream Analytics
Python	[ ]	Azure Synapse Analytics
SQL	[ ]	

**Answer Area**

**Correct Answer:**

KQL	Azure Data Explorer
SQL	Azure Stream Analytics
Python	Azure Synapse Analytics

Which Azure Cosmos DB API should you use for a graph database?

- A. Table
- B. Cassandra
- C. NoSQL
- D. Gremlin

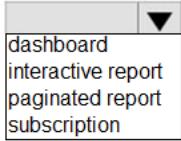
**Correct Answer: D**

HOTSPOT

Select the answer that correctly completes the sentence.

**Answer Area**

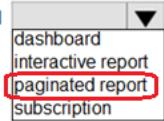
A Microsoft Power BI



enables users to create highly formatted,  
fixed-layout documents optimized for printing and archiving.

**Answer Area**

**Correct Answer:** A Microsoft Power BI



enables users to create highly formatted,  
fixed-layout documents optimized for printing and archiving.