1. \*\*Introduction to Azure Databricks:\*\*

- What is Azure Databricks, and how does it differ from Apache Spark?

- How does Azure Databricks facilitate big data processing and analytics?

- What are the key features and benefits of using Azure Databricks?

2. \*\*Data Processing with Azure Databricks:\*\*

- How does Azure Databricks handle distributed data processing?

- What are the different data sources supported in Azure Databricks?

- How can you load, process, and transform data using Spark in Azure Databricks?

3. \*\*Notebook Development:\*\*

- What are notebooks, and how are they used in Azure Databricks?

- What programming languages can be used in Azure Databricks notebooks?

- How can you collaborate and share notebooks with others?

4. \*\*Data Visualization and Analytics:\*\*

- How can you create visualizations in Azure Databricks using libraries like Matplotlib and Seaborn?

- What are the various options for visualizing data in Azure Databricks?

- How can you perform exploratory data analysis and gain insights from data?

5. \*\*Machine Learning with Azure Databricks:\*\*

- What are the machine learning capabilities of Azure Databricks?

- How can you build and train machine learning models using Spark MLlib?

- How does Azure Databricks integrate with Azure Machine Learning services?

6. \*\*Streaming and Real-Time Data:\*\*

- How can you process real-time data streams in Azure Databricks?

- What are the integration options with streaming platforms like Kafka and Azure Event Hubs?

7. \*\*Data Security and Access Control:\*\*

- How does Azure Databricks handle data security and encryption?

- What are the best practices for managing access control and permissions in Azure Databricks?

8. \*\*Optimization and Performance Tuning:\*\*

- How can you optimize Spark jobs for better performance in Azure Databricks?

- What are some common performance tuning techniques for Spark applications?

9. \*\*Integration with Azure Services:\*\*

- How does Azure Databricks integrate with other Azure services like Azure Synapse Analytics, Azure Data Lake Storage, and Azure Data Factory?

10. \*\*Monitoring and Diagnostics:\*\*

- What tools and techniques are available for monitoring and debugging Spark jobs in Azure Databricks?

- How can you optimize resource usage and manage costs effectively in Azure Databricks?

* Introduction to Azure Databricks: https://www.youtube.com/watch?v=2otrn2mvlSQ
* What is Azure Databricks, and how does it differ from Apache Spark?: https://www.youtube.com/watch?v=hS3UvDtRqc8
* How does Azure Databricks facilitate big data processing and analytics?: https://www.youtube.com/watch?v=7No67EvipwE
* What are the key features and benefits of using Azure Databricks?: https://www.youtube.com/watch?v=cxyUy1bZ9mk
* Data Processing with Azure Databricks:
  + How does Azure Databricks handle distributed data processing?: https://www.youtube.com/watch?v=7No67EvipwE
  + What are the different data sources supported in Azure Databricks?: https://www.youtube.com/watch?v=u8cRrEgKSmw
  + How can you load, process, and transform data using Spark in Azure Databricks?: https://learn.microsoft.com/en-us/azure/databricks/scenarios/databricks-extract-load-sql-data-warehouse
* Notebook Development:
  + What are notebooks, and how are they used in Azure Databricks?: https://www.youtube.com/watch?v=zPNnyt1I-2Q
  + What programming languages can be used in Azure Databricks notebooks?: https://intellipaat.com/community/55367/what-are-the-different-languages-azure-databricks-support
  + How can you collaborate and share notebooks with others?: https://learn.microsoft.com/en-us/azure/databricks/notebooks/notebooks-collaborate
* Data Visualization and Analytics:
  + How can you create visualizations in Azure Databricks using libraries like Matplotlib and Seaborn?: https://www.sqlshack.com/visualizing-data-with-dashboards-in-azure-databricks/
  + What are the various options for visualizing data in Azure Databricks?: https://learn.microsoft.com/en-us/azure/databricks/visualizations/
  + How can you perform exploratory data analysis and gain insights from data?: https://learn.microsoft.com/en-us/azure/databricks/exploratory-data-analysis/
* Machine Learning with Azure Databricks:
  + What are the machine learning capabilities of Azure Databricks?: https://learn.microsoft.com/en-us/azure/databricks/machine-learning/
  + How can you build and train machine learning models using Spark MLlib?: https://learn.microsoft.com/en-us/azure/databricks/machine-learning/train-model/
  + How does Azure Databricks integrate with Azure Machine Learning services?: https://www.youtube.com/watch?v=lKKE-pJY6Js
* Streaming and Real-Time Data:
  + How can you process real-time data streams in Azure Databricks?: https://learn.microsoft.com/en-us/azure/architecture/reference-architectures/data/stream-processing-databricks
  + What are the integration options with streaming platforms like Kafka and Azure Event Hubs?: https://learn.microsoft.com/en-us/azure/databricks/structured-streaming/streaming-event-hubs
* Data Security and Access Control:
  + How does Azure Databricks handle data security and encryption?: https://learn.microsoft.com/en-us/azure/databricks/security/keys/
  + What are the best practices for managing access control and permissions in Azure Databricks?: https://learn.microsoft.com/en-us/azure/databricks/security/auth-authz/access-control/
* Optimization and Performance Tuning:
  + How can you optimize Spark jobs for better performance in Azure Databricks?: https://key2consulting.com/boost-query-performance-databricks-spark/
  + What are some common performance tuning techniques for Spark applications?: https://www.youtube.com/watch?v=0aT\_Q7Xnui0
* Integration with Azure Services:
  + How does Azure Databricks integrate with other Azure services like Azure Synapse Analytics, Azure Data Lake Storage, and Azure Data Factory?: https://learn.microsoft.com/en-us/azure/databricks/scenarios/databricks-connect-to-data-sources
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  + How can you optimize resource usage and manage costs effectively in Azure Databricks?: https://learn.microsoft.com/en-us/azure/databricks/lakehouse-architecture/cost-optimization/best-practices