**MICROSOFT AZURE**

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Azure Services:

Introduction to various Azure tools such as Azure Data Factory, Data Lake Storage, and Synapse for data management and processing.

Azure Databricks Essentials:

Understanding Azure Databricks components like clusters, notebooks, and functionalities for data ingestion, transformation, Delta Lake usage, and ML Flow for machine learning.

Spark Fundamentals:

Exploring Apache Spark's architecture, its capabilities in handling large-scale data processing using Spark Core, SQL, Streaming, ML, and RDDs.

Audience:

Target Audience: University students, IT Developers, Data Architects, and Cloud Data Engineers looking to leverage Azure services for data analytics and processing.

Structured Learning:

1. Exploring workspace, clusters, and basic configurations.
2. Delta Lake Usage: Managing big data, handling incremental loads, and integrating with other analytics tools.
3. Orchestration and Access Control: Managing data lake access and securing workflows using Azure Databricks.
4. Databricks Cluster Configuration: Creating and managing clusters, configurations, types, and runtime options.

Azure Databricks Pricing:

Explanation of factors affecting Azure Databricks costs, considering workload types, pricing tiers, VM types, and purchase plans.

Estimating costs for running Databricks clusters during usage based on Databricks Units (DBUs) and VM node costs.

Estimated Usage Costs:

* Providing an estimated cost range (past student experience) for using Azure Databricks clusters during activities, with an hourly rate of $0.76 for a small single-node cluster on the premium tier.
* Providing an estimated cost for using Azure Databricks clusters during the course, indicating a range of $15 to $25 for past Pay As You Go students, with an hourly cost of $0.76 for a small single-node cluster on the premium tier.

INSTALLING AZURE LAB

1. Access Credentials:This includes details on login credentials (username, password) or authentication methods (such as Azure Active Directory, Single Sign-On).
2. Lab Environment Overview: Azure Lab environment, including the purpose of the lab, available resources, tools, and services that users can utilize.
3. Access Permissions: Highlight any restrictions or limitations on certain resources or functionalities.
4. Accessing Azure Portal: Step-by-step guidance on how users can access the Azure Portal, which serves as the central interface for managing Azure resources. =
5. Resource Usage Guidelines: Provide guidelines on responsible resource usage within the lab to prevent unnecessary expenses. Emphasize the importance of resource cleanup and cost management practices.
6. Lab-specific Tools and Services: Explain how users can access and utilize specific tools or services available in the Azure Lab. This might include Azure Data Factory, Databricks, Azure Storage, Virtual Machines, etc.
7. Support and Assistance: Offer guidance on where users can seek help or support in case of issues or queries.
8. Lab Termination and Cleanup: Know how to properly terminate their lab sessions, log out, and clean up any resources they have used to avoid unnecessary costs or resource wastage.
9. Additional Resources and References: Include links or references to supplementary resources, tutorials, or documentation that can help users further explore and learn about Azure services and functionalities.