Journey Presentation Harsh Thakur Harsh.Thakur@shell.com

Day-1 Data Fundamentals

- o What Is Data?
- o Types Of Data
- o What Is Database?
- O What Does Data Engineer Do?
- Normalization And Denormalization
- Normalization Forms (1NF,2NF,3NF,BCNF)
- O Dependencies (Partial, Transitive, Functional)
- Attribute Keys (Candidate, Primary, Foreign, Super)
- Anomalies- Insert, Update, Delete

- Data Modelling And ER Diagram
 - Activity- To Make An ER Diagram For Ordering A Book
 From Online Store, Perform Normalization
- Dimensional Modelling
- Fact Table And Dimension Table
- Star Schema & Snowflake Schema
 - Activity- Implement The Concepts Of Star And
 Snowflake Schema By Drawing Respective Diagrams
- SCD (Slowly Changing Dimension)

Day-2 and 3 Big Data

- oBig Data
- o Extract, Load, Transform(ETL) Pipelines
- o How To Process Big Data?
- o Hadoop
- o PySpark
- oParallel Processing And Distributive Computing
- o Hadoop Used For Batch Processing & PySpark Used For Stream Processing

- Types Of Data Structure
 - Structured Data
 - Semi-structured Data
 - Unstructured Data
- O Data Warehouse -
 - Save Data As Object
 - Tables
 - Views
 - Structured Data (Fixed Schema-data Allocated Even If Value Is Null)
 - Dimension Modelling
 - ACID Property In DBMS -
 - Atomicity
 - Consistency
 - Isolation
 - Durability

- O Data Lakehouse
 - Combination Of Data Warehouse And Datalake.
 - Took Advantages Of Both Data Warehouse And Datalake.
- Creating A VM Using Microsoft Azure.
- OWhat Is Cloud Computing.
- o Types Of Cloud -
 - Public Cloud
 - Private Cloud
 - Hybrid Cloud
- O Cloud Benefits -
- High Availability
- Scalability
- Agility
- o Fault Tolerance
- Elasticity
- Security
- o Disaster Recovery
- Customer Latency Capabilities

- o Compare Capex(capital Expenditure) Vs OpEx(operational Expenditure) -
 - Cloud Is OpEx.
- o Infrastructure As A Service(IAAS)
- o Platform As A Service(PAAS)
- o Software As A Service(SAAS)
- o Shared Responsibility Model
- o Serverless Computing
- o Azure Architecture
- o Regions
- o Region Pairs
- o Availability Zones
- o Azure Resources
- o Azure Subscriptions -
- o Billing Boundary
- o Access Control Boundary
- o Azure Resource Manager
- o Resource Groups
- o Subscriptions -> Resource Groups

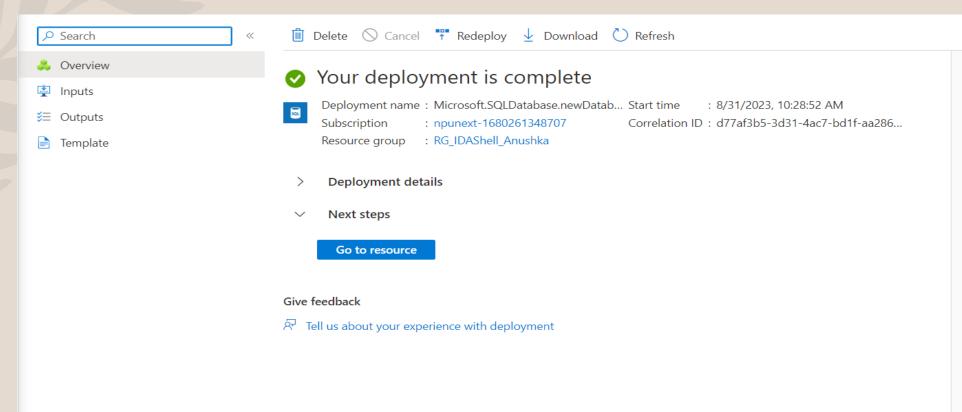
Day-3 Azure SQL

- oSetting Up Azure SQL Services By Logging In On Azure Portal.
- oSQL Deployment Options For Azure SQL:
 - SQL Database
 - SQL Managed Instances
 - SQL Virtual Machines
- oSelect SQL Database -> Single Database -> Create Database.
- oIntroduction To SQL
- o Database Created On Microsoft Azure SQL.
- oRunning Query Editor On Our Server.

- o DDL (Data Definition Language): create, Alter, Drop, Truncate
- o DML(data Manipulation Language): Select, Insert, Update, Delete
- o DCL(data Control Language):grant, REVOKE
- o Constraints
- o View: View Is A Virtual Table Based On The Result-set Of An SQL Statement.
- o Schema In Sql
- o Difference Between DELETE, DROP, TRUNCATE.
- o Activity: Create Tables For Online Book Store
- o Group By Clause
- o Having Clause: For Filtration
- o Where Clause
- o GRANT: Grant Select Permission On <Table_name> To <User>
- o Revoke

Note

oSince we were getting connection issues on some of the laptops, UNext asked us to share the laptops and run the queries on a single laptop





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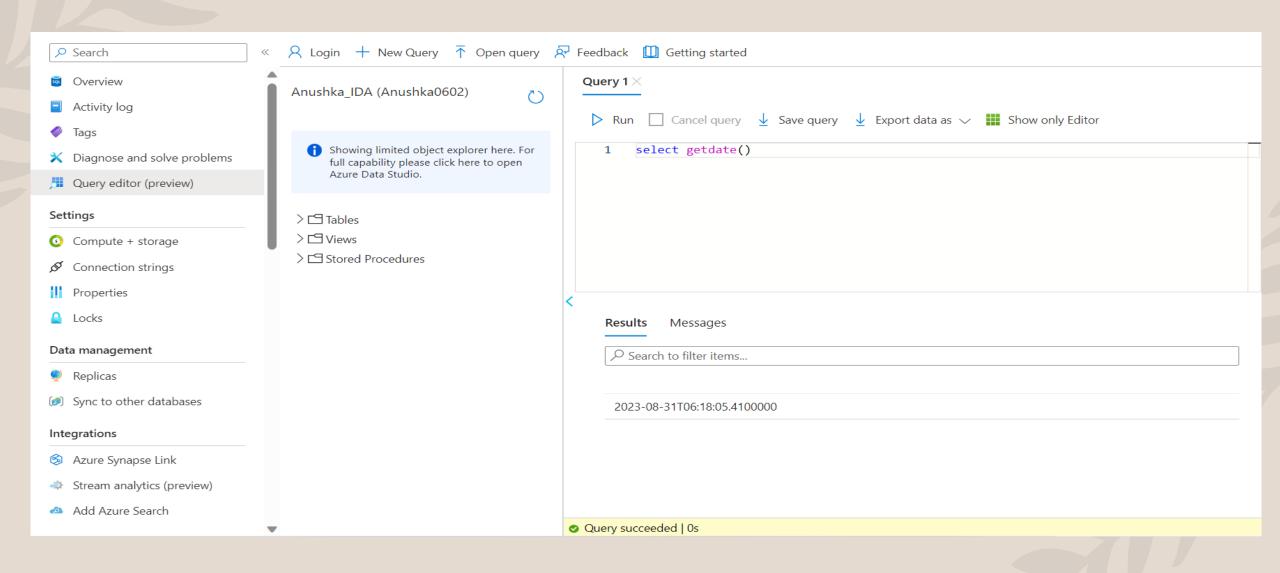
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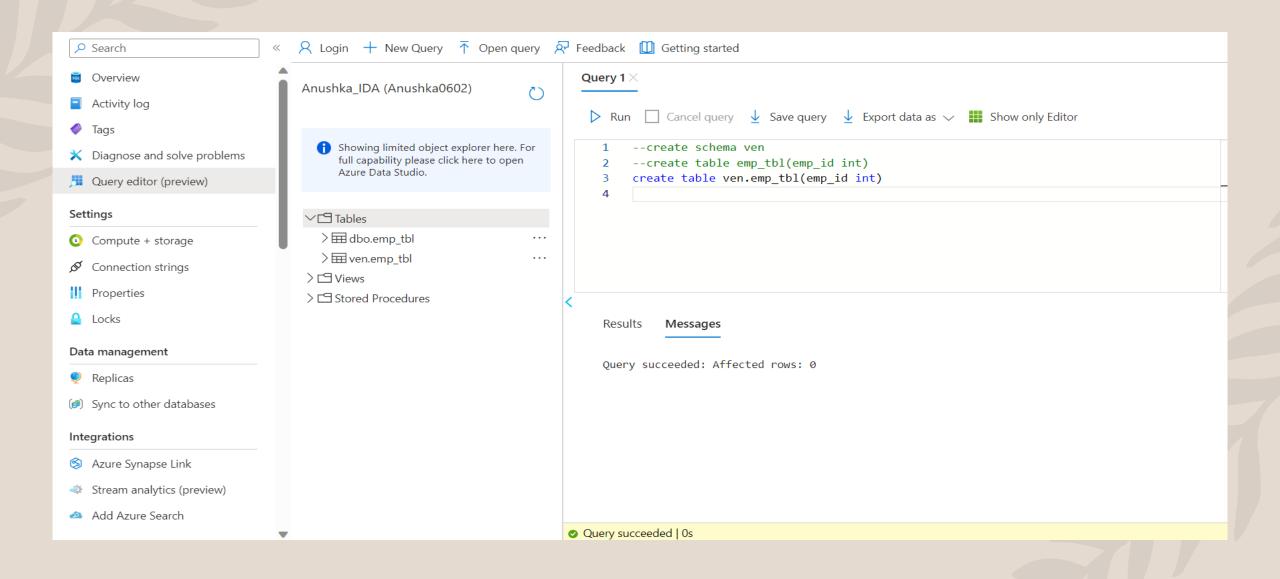
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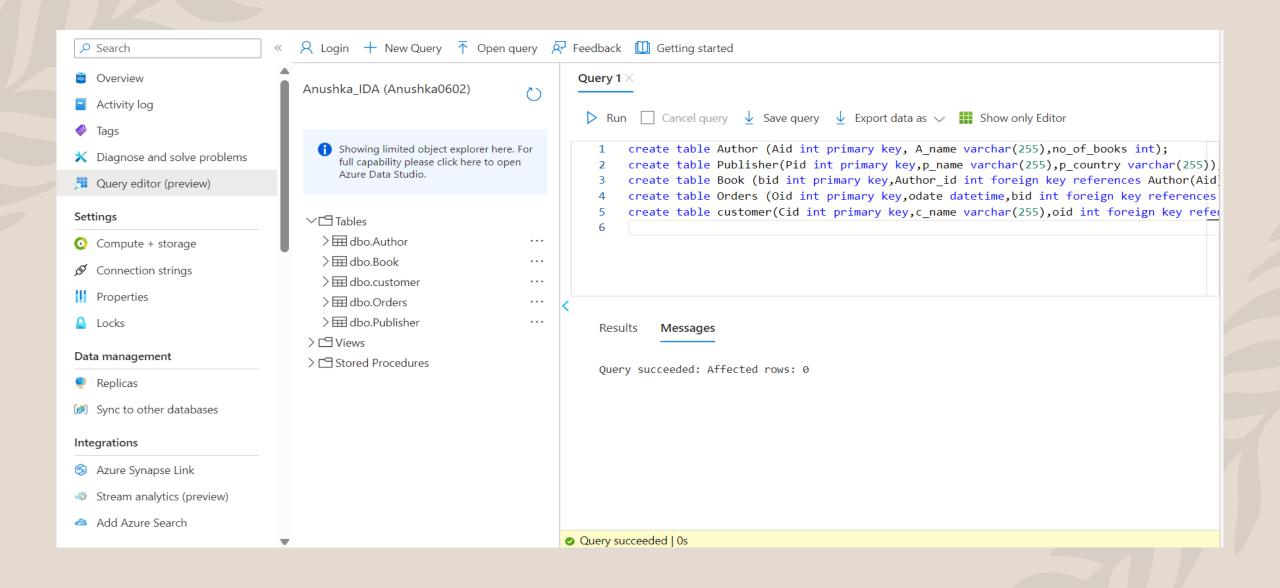
Work with an expert

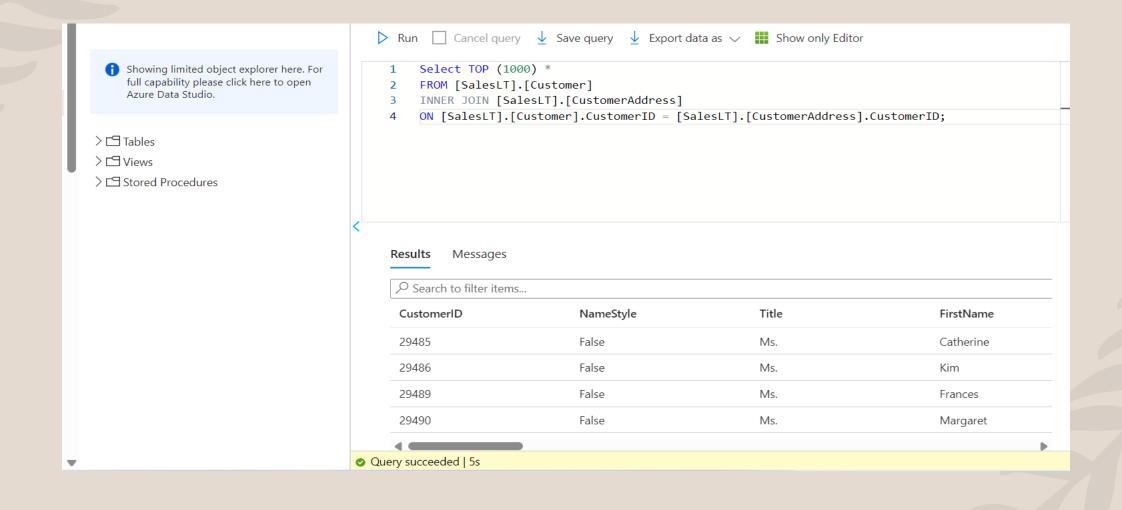
Azure experts are service provider partners who can help manage your assets on Azure and be your first line of support.

Find an Azure expert >









DAY-4

Azure SQL

- o Create A Database And Elastic Pool.
- o Joins:
 - Inner Join
 - Left Join
 - Right Join
 - Self Join
 - Outer Join
 - Cross Join
- o Stored Procedure
- o Views
- Functions
 - Scaler
 - Table Valued
- Complex Codes -> Stored Procedures
- o Simple Code -> Views
- o Temporary Table: # Before Table Name Creates A Temporary Table (i.e., No Physical Table Created). It Drops Automatically.
- Sub-queries
- O UNION AND UNION ALL
- Intersection
- o Index
 - Clustered Index
 - Non-Clustered Index
 - Column Stored Index



