**DATABASE**

1. **What is Column**

Column is a set of data values of a particular simple type, one for each row of the table. The columns provide the structure according to which the rows are composed.

1. **What is Database**

A database is an organized collection of data. It is the collection of schemas, tables, queries, reports, views, and other objects.

1. **What is Row**

In the context of a relational database, a row also called a record or tuple which represents a single, implicitly structured data item in a table.

1. **What is Table**

Database table can be thought of as consisting of rows and columns or fields.

1. **Example for Foreign Key**

CREATE TABLE Persons  
(  
P\_Id int NOT NULL,  
LastName varchar(255) NOT NULL,  
FirstName varchar(255),  
PRIMARY KEY(P\_Id)  
)

CREATE TABLE Orders  
(  
O\_Id int NOT NULL PRIMARY KEY,  
OrderNo int NOT NULL,  
P\_Id int PRIMARY KEY REFERENCES Persons(P\_Id)  
)

1. **Example for Group by**

SELECT SKU\_Description, COUNT(\*) AS NameCount

FROMSKU\_DATA

GROUP BY SKU\_Description;

1. **Example for Having**

SELECT e.LastName, COUNT(o.OrderID) AS OrderCount FROM (Orders o INNER JOIN Employees e ON o.EmployeeID=e.EmployeeID) GROUP BY LastName HAVING COUNT(o.OrderID) > 10;

1. **Example for Inner Join**

SELECT c.CustomerName, o.OrderID FROM Customers c INNER JOIN Orders o ON c.CustomerID=o.CustomerID ORDER BY c.CustomerName;

1. **Example for Left Outer**

SELECT c.CustomerName, o.OrderID FROM Customers c LEFT JOIN Orders o ON c.CustomerID=o.CustomerID ORDER BY c.CustomerName;

1. **Example for Max, Sum, Avg**

SELECT MAX(Price) AS HighestPrice FROM Products;

SELECT SUM(Quantity) AS TotalItemsOrdered FROM OrderDetails;

SELECT AVG(Price) AS PriceAverage FROM Products;

1. **Example for Primary Key**

CREATE TABLE Persons  
(  
P\_Id int NOT NULL,  
LastName varchar(255) NOT NULL,  
FirstName varchar(255),  
PRIMARY KEY (P\_Id)  
)

1. **Example for Right outer**

SELECT o.OrderID,e.FirstName FROM Orders o RIGHT JOIN Employees e ON o.EmployeeID=e.EmployeeID ORDER BY o.OrderID;

1. **Example for where condition**

SELECT \* FROM Customers WHERE Country LIKE 's%';

1. **Finding second highest salary from row table**

SELECT MAX (Salary) as 'Salary' from Employees where Salary NOT IN (SELECT TOP 1 (Salary) from Employees ORDER BY Salary Desc);