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| **Instructor:**   * Mr. Nazeef Ul Haq (Lab) |  |

**Learning Objectives:**

* Understanding of JOINS in SQL Server.

**Helping Material:**

1. **JOINS In SQL Server:**

A JOIN clause is used to combine rows from two or more tables, based on a related column between them

SQL server provides the following joins:

* Cross Join
* Natural Join
* Equi Join
* Inner Join
* Left Outer Join
* Right Outer Join
* Full Outer Join

1. **JOINS SYNTAX:**

SELECT ColumnName(s)

FROM Table\_1,Table\_2

OR

SELECT ColumnName(s)

FROM Table\_1 CROSS JOIN Table\_2

SELECT column\_name(s)

FROM table1 INNER JOIN/ CROSS JOIN/ NATURAL JOIN/ LEFT JOIN/ RIGHT JOIN/ FULL OUTER JOIN table2

ON table1.column\_name = table2.column\_name;

**Lab Tasks + Home Tasks:**

* Perform all JOIN queries on any table using Northwind Schema.
* Perform self-cross join and see if there is any difference between cross join and self cross join.
* SELECT Customers.custid, Customers.companyname, Orders.orderid, Orders.orderdate

FROM Sales.Customers AS C

INNER JOIN Sales.Orders AS O

ON Customers.custid = Orders.custid;

Advanced Tasks:

* Return customers and their orders, including customers who placed no orders (CustomerID, OrderID, OrderDate)
* Report only those customer IDs who never placed any order. (CustomerID, OrderID, OrderDate)
* Report those customers who placed orders on July,1997. (CustomerID, OrderID, OrderDate)
* Report the total orders of each customer. (customerID, totalorders)
* Write a query to generate a five copies of each employee. (EmployeeID, FirstName, LastName)
* Write a query that returns a row for each employee and day in the range 04-07-1996 through 04-08-1997. (EmployeeID, Date)
* Return US customers, and for each customer return the total number of orders and total quantities. (CustomerID, Totalorders, totalquantity)
* Write a query that returns all customers in the output, but matches them with their respective orders only if they were placed on July 04,1997. (CustomerID, CompanyName, OrderID, Orderdate)
* Are there any employees who are older than their managers?
* List that names of those employees and their ages. (EmployeeName, Age, Manager Age)
* List the names of products which were ordered on 8th August 1997. (ProductName, OrderDate)
* List the addresses, cities, countries of all orders which were serviced by Anne and were shipped late. (Address, City, Country)
* List all countries to which beverages have been shipped. (Country)

**HackerRank Tasks:**

All remaining queries of easy module.

**What to Submit:**

You are required to submit the following files.

* 2021-CS-X.sql (You will replace the value of “X” with you roll number to keep name of file)
* Pdf report.