INNER JOIN

In this lesson, we will study the INNER JOIN in SQL.

WE'LL COVER THE FOLLOWING

INNER JOIN

The **INNER JOIN** keyword selects records that have matching values in both tables.

Syntax

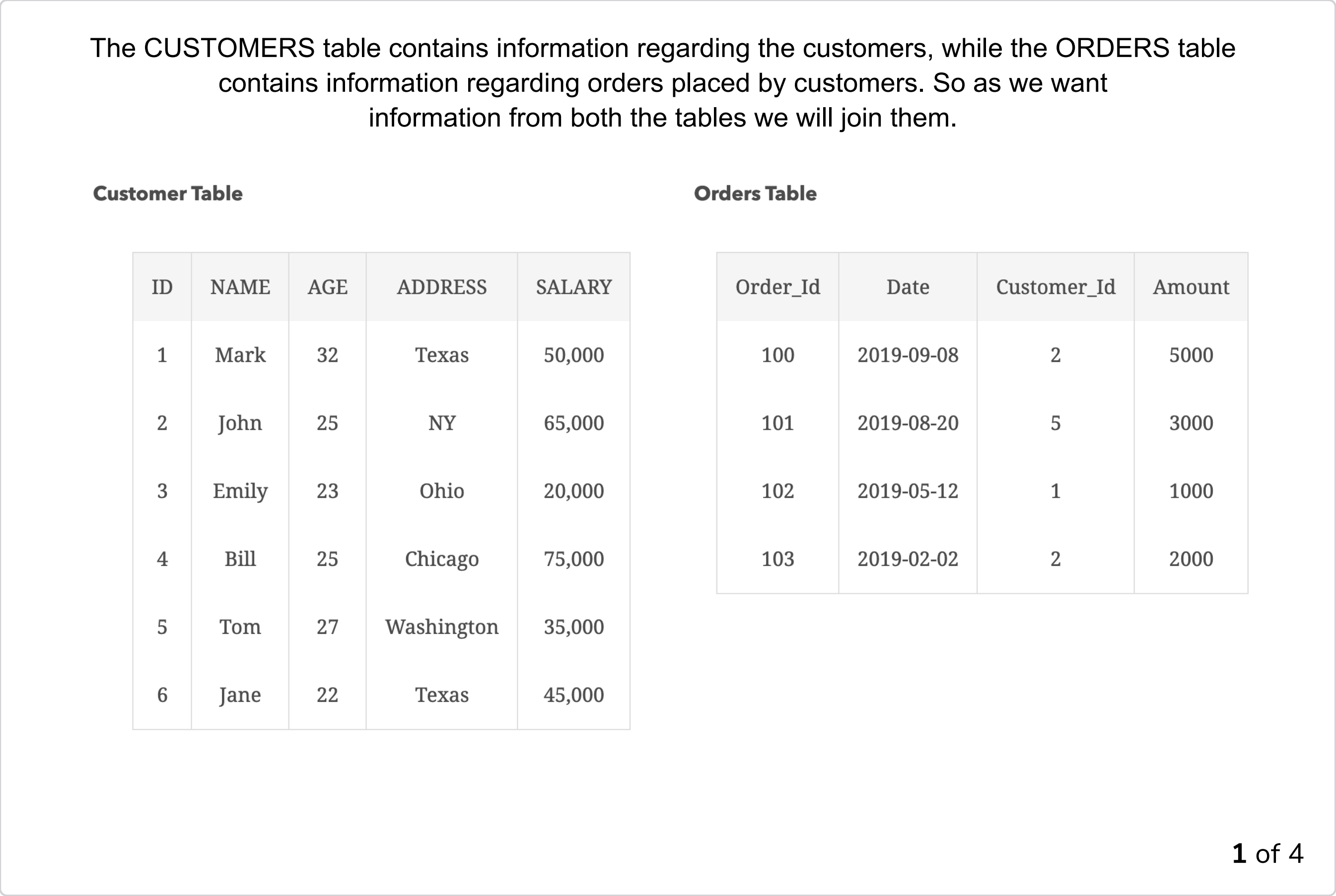
The basic syntax of the `INNER JOIN` is as follows:

```
SELECT table1.column1, table2.column2 ...

FROM table1

INNER JOIN table2

ON table1.common_field = table2.common_field;
```

Example

We will be using the CUSTOMERS and ORDERS tables as defined in the previous lesson.

Let's say we want to retrieve the information of only those customers that have placed an order. This can be done by joining the two tables:



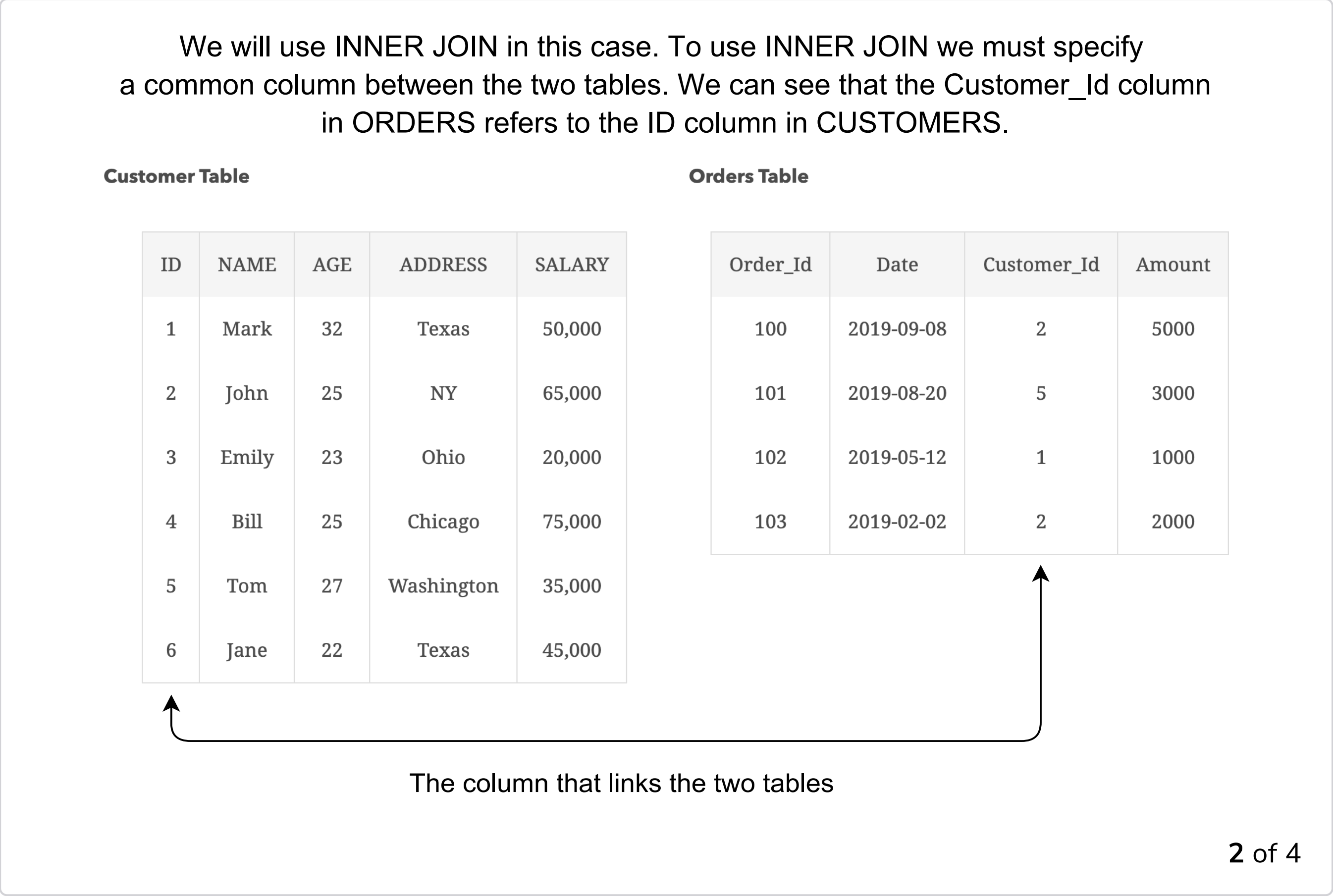
The CUSTOMERS table contains information regarding the customers, while the ORDERS table contains information regarding orders placed by customers. So as we want information from both the tables we will join them.

Customer Table

ID	NAME	AGE	ADDRESS	SALARY
1	Mark	32	Texas	50,000
2	John	25	NY	65,000
3	Emily	23	Ohio	20,000
4	Bill	25	Chicago	75,000
5	Tom	27	Washington	35,000
6	Jane	22	Texas	45,000

Orders Table

Order_Id	Date	Customer_Id	Amount
100	2019-09-08	2	5000
101	2019-08-20	5	3000
102	2019-05-12	1	1000
103	2019-02-02	2	2000



We will use INNER JOIN in this case. To use INNER JOIN we must specify a common column between the two tables. We can see that the Customer_Id column in ORDERS refers to the ID column in CUSTOMERS.

Customer Table

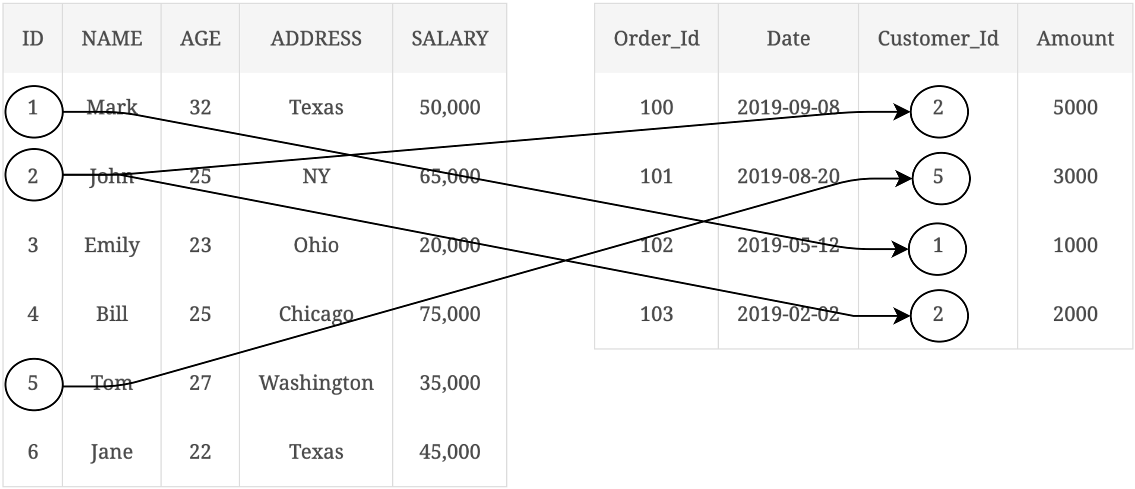
ID	NAME	AGE	ADDRESS	SALARY
1	Mark	32	Texas	50,000
2	John	25	NY	65,000
3	Emily	23	Ohio	20,000
4	Bill	25	Chicago	75,000
5	Tom	27	Washington	35,000
6	Jane	22	Texas	45,000

Orders Table

Order_Id	Date	Customer_Id	Amount
100	2019-09-08	2	5000
101	2019-08-20	5	3000
102	2019-05-12	1	1000
103	2019-02-02	2	2000

The column that links the two tables

We use INNER JOIN because we want the information of only those customers who have placed an order, thus INNER JOIN will be used to retrieve only the matching records in both tables.



Customer Table

ID	NAME	AGE	ADDRESS	SALARY
1	Mark	32	Texas	50,000
2	John	25	NY	65,000
3	Emily	23	Ohio	20,000
4	Bill	25	Chicago	75,000
5	Tom	27	Washington	35,000
6	Jane	22	Texas	45,000

Orders Table

Order_Id	Date	Customer_Id	Amount
100	2019-09-08	2	5000
101	2019-08-20	5	3000
102	2019-05-12	1	1000
103	2019-02-02	2	2000

As we can see the INNER JOIN will return those records where the customer IDs match in both the tables.

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After the INNER JOIN returns the matching records, we can use the SELECT statement to dislay the required columns only. Let's say we want the ID, NAME, AMOUNT and DATE columns only.The final resulant table is shown below:

ID	NAME	AMOUNT	DATE
2	John	5000	2019-09-08
5	Tom	3000	2019-08-20
1	Mark	1000	2019-05-12
2	John	2000	2019-02-02

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The following code will show you how to join the two tables:

```
/* This is the same table we created in the previous lessons.*/
CREATE TABLE CUSTOMERS(
  ID   INT              NOT NULL,
  NAME VARCHAR (20)     NOT NULL,
  AGE  INT              NOT NULL,
  ADDRESS  CHAR (25) ,
  SALARY   DECIMAL (18, 2),  /* The (18,2) simply means that we can have 18 digits with 2 of
  PRIMARY KEY (ID)
);

INSERT INTO CUSTOMERS (ID, NAME, AGE, ADDRESS, SALARY)
VALUES (1, 'Mark', 32, 'Texas', 50000.00 );

INSERT INTO CUSTOMERS (ID, NAME, AGE, ADDRESS, SALARY)
VALUES (2, 'John', 25, 'NY', 65000.00 );

INSERT INTO CUSTOMERS (ID, NAME, AGE, ADDRESS, SALARY)
VALUES (3, 'Emily', 23, 'Ohio', 20000.00 );

INSERT INTO CUSTOMERS (ID, NAME, AGE, ADDRESS, SALARY)
VALUES (4, 'Bill', 25, 'Chicago', 75000.00 );

INSERT INTO CUSTOMERS (ID, NAME, AGE, ADDRESS, SALARY)
VALUES (5, 'Tom', 27, 'Washington', 35000.00 );

INSERT INTO CUSTOMERS (ID, NAME, AGE, ADDRESS, SALARY)
VALUES (6, 'Jane', 22, 'Texas', 45000.00 );

/*This is the same ORDERS table we created in previous lectures.*/
CREATE TABLE ORDERS(
  ORDER_ID    INT       NOT NULL,
  DATE VARCHAR (20)     NOT NULL,
  CUSTOMER_ID  INT      NOT NULL,
  AMOUNT   INT,
  PRIMARY KEY (ORDER_ID),
  FOREIGN KEY (CUSTOMER_ID) REFERENCES CUSTOMERS(ID) /* We must specify the table to which th
);

INSERT INTO ORDERS (ORDER_ID, DATE, CUSTOMER_ID, AMOUNT)
VALUES (100, '2019-09-08', 2, 5000 );

INSERT INTO ORDERS (ORDER_ID, DATE, CUSTOMER_ID, AMOUNT)
VALUES (101, '2019-08-20', 5, 3000 );

INSERT INTO ORDERS (ORDER_ID, DATE, CUSTOMER_ID, AMOUNT)
VALUES (102, '2019-05-12', 1, 1000 );

INSERT INTO ORDERS (ORDER_ID, DATE, CUSTOMER_ID, AMOUNT)
VALUES (103, '2019-02-02', 2, 2000 );


SELECT  CUSTOMERS.ID, CUSTOMERS.NAME, ORDERS.AMOUNT, ORDERS.DATE
FROM CUSTOMERS
INNER JOIN ORDERS
ON CUSTOMERS.ID = ORDERS.CUSTOMER_ID;
```

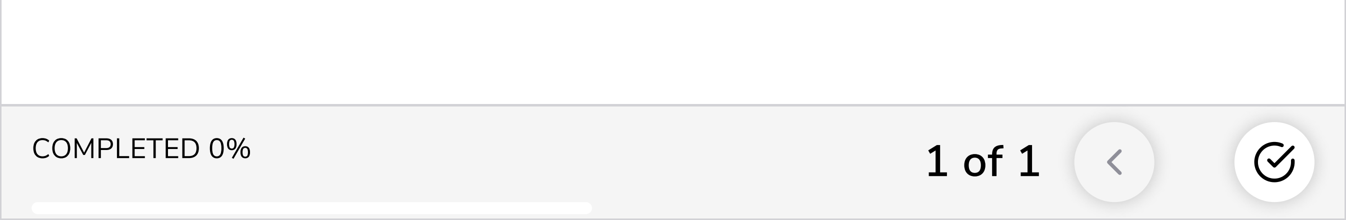
> Note: The INNER JOIN keyword selects all rows from both tables as long as there is a match between the columns. If there are records in the “Orders” table that do not have matches in “Customers”, these orders will not be shown.

That is why we don’t see Emily, Bill or Jane in the result-set; they have not placed any orders.

Quick quiz!

Q

Which of the following queries will return the NAME and AGE of a customer along with the DATE they placed an order?



In the next lesson, we will take a look at the LEFT JOIN keyword.