

# JOINS AND SET OPERATIONS

Data Analytics

Speaker - Mr. Eshan Tiwari



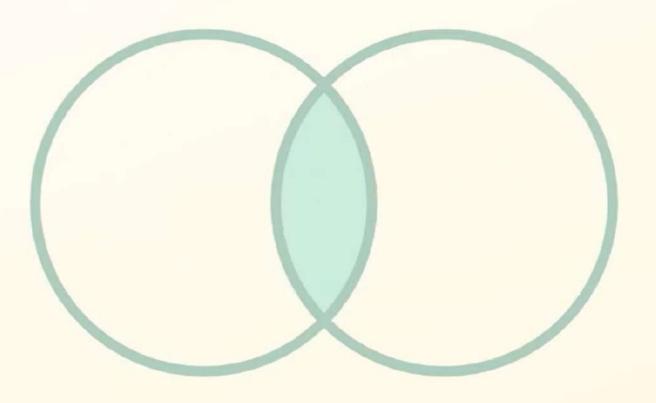
## Why do we need joins?

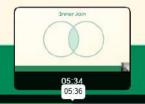


## **Inner Join**











## Inner Join

#### **CUSTOMERS** able

1	ID	NAME	AGE	ADDRESS	SALARY
	1	Ramesh	32	Ahmedabad	2000.00
1	2	Khilan	25	Delhi	1500.00
1	3	kaushik	23	Kota	2000.00
1	4	Chaitali	25	Mumbai	6500.00
1	5	Hardik	27	Bhopal	8500.00
1	6	Komal	22	MP	4500.00
1	7	Muffy	24	Indore	10000.00

#### **ORDERS Table**

OID	DATE		CUSTOMER_ID	AMOUNT	
102	2009-10-08	00:00:00	3	3000	
100	2009-10-08		3	1500	
101	2009-11-20		2 4	1560	

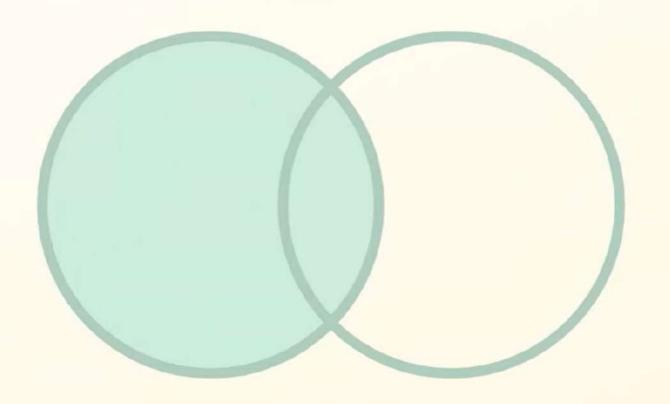
#### Query

SELECT ID, NAME, AMOUNT, DATE
FROM CUSTOMERS
INNER JOIN ORDERS
ON CUSTOMERS.ID = ORDERS.CUSTOMER\_ID;

	ID	1	NAME	AMOUNT	DATE
+-		+		+	
1	3	1	kaushik	3000	2009-10-08 00:00:00
1	3	1	kaushik	1500	2009-10-08 00:00:00
1	2	1	Khilan	1560	2009-11-20 00:00:00
1	4	1	Chaitali	2060	2008-05-20 00:00:00



## Left Join





## Left Join

#### **CUSTOMERS Table**

ID	NAME	AGE	ADDRESS	SALARY
1	Ramesh	32	Ahmedabad	2000.00
2	Khilan	25	Delhi	1500.00
3	kaushik	23	Kota	2000.00
4	Chaitali	25	Mumbai	6500.00
5	Hardik	27	Bhopal	8500.00
6	Komal	22	MP	4500.00
7	Muffy	24	Indore	10000.00

#### **ORDERS Table**

OID	DATE		CUSTOMER_ID	AMOUNT
102	2009-10-08	00:00:00	3	3000
100	2009-10-08	00:00:00	3	1500
101	2009-11-20	00:00:00	2	1560
103	2008-05-20	00:00:00		2060

### Query

SELECT ID, NAME, AMOUNT, DATE FROM CUSTOMERS LEFT JOIN ORDERS ON CUSTOMERS.ID = ORDERS.CUSTOMER\_ID;

	ID	1	NAME	1	AMOUNT	1	DATE
-	1	+	Ramesh	+	NULL	+	NULL
	2	i	Khilan	i	1560	i	2009-11-20 00:00:00
	3	í	kaushik	i	3000	i	2009-10-08 00:00:00
	3	1	kaushik	1	1500	T	2009-10-08 00:00:00
	4	1	Chaitali	1	2868	1	2008-05-20 00:00:00
	5	1	Hardik	1	NULL	1	NULL
	6	1	Komal	1	NULL	1	NULL
	7	1	Muffy	1	NULL	1	NULL

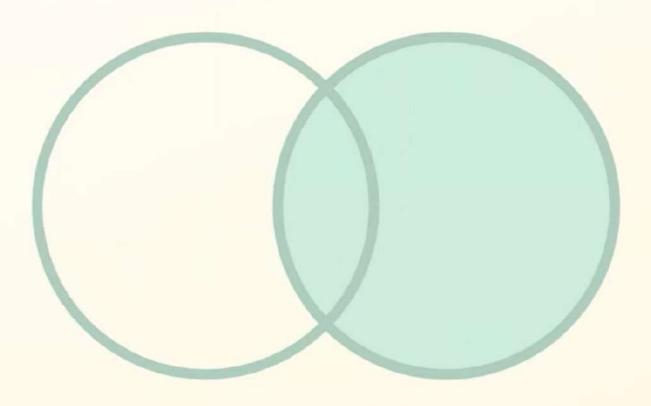
















## Right Join

#### **CUSTOMERS** Table

1	ID	NAME	AGE	ADDRESS	VSALARY
+		· · · · · · · · · · · · · · · · · · ·			<b>+</b>
1	1	Ramesh	32	Ahmedabad	2000.00
1	2	Khilan	25	Delhi	1500.00
1	3	kaushik	23	Kota	2000.00
1	4	Chaitali	25	Mumbai	6500.00
1	5	Hardik	27	Bhopal	8500.00
1	6	Komal	22	MP	4500.00
1	7	Muffy	24	Indore	10000.00

#### **ORDERS Table**

OID	DATE		CUSTOMER_ID	AMOUNT
102	2009-10-08	00:00:00	3	3000
100	2009-10-08	00:00:00	3	1500
101	2009-11-20	00:00:00	2	1560
103	2008-05-20	00:00:00	4	2060

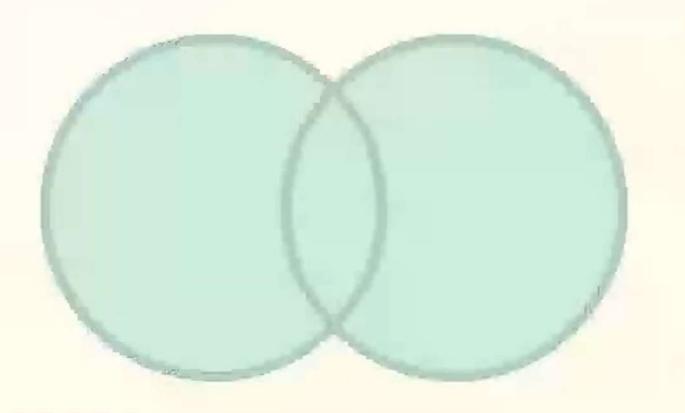
#### Query

SELECT ID, NAME, AMOUNT, DATE
FROM CUSTOMERS
RIGHT JOIN ORDERS
ON CUSTOMERS.ID = ORDERS.CUSTOMER\_ID;

	ID	1	NAME	1	AMOUNT		DATE	
+-		+		+		+-		
	3	1	kaushik	1	3000	I	2009-10-08	00:00:00
ĺ	3	1	kaushik	1	1500	ı	2009-10-08	00:00:00
	2	1	Khilan	1	1560	ı	2009-11-20	00:00:00
ı	4	1	Chaitali	1	2060	1	2008-05-20	00:00:00



## Full Join







## Full Join

#### **CUSTOMERS Table**

l	ID	1	NAME	1	AGE	1	ADDRESS	SALARY
	1	1	Ramesh	1	32	1	Ahmedabad	2000.00
1	2	1	Khilan	1	25	1	Delhi	1500.00
1	3	1	kaushik	1	23	1	Kota	2000.00
1	4	1	Chaitali	1	25	1	Mumbai	6500.00
1	5	1	Hardik	1	27	1	Bhopal	8500.00
1	6	1	Komal	1	22	1	MP	4500.00
1	7	1	Muffy	1	24	1	Indore	10000.00

## **ORDERS Table**

OID	DATE		CUSTOMER_ID	AMOUNT
102	2009-10-08	99:99:99	3	3000
100	2009-10-08		3	1500
101	2009-11-20	00:00:00	2	1560
103	2008-05-20	00:00:00	4	2060

#### Query

SELECT ID, NAME, AMOUNT, DATE
FROM CUSTOMERS
FULL JOIN ORDERS
ON CUSTOMERS.ID = ORDERS.CUSTOMER\_ID;

1	D	1	NAME	1	AMOUNT	1	DATE	I
+		+		+		+-		+
1	1	1	Ramesh	1	NULL	1	NULL	I
1	2	1	Khilan	1	1560	1	2009-11-20 00:00:00	1
1	3	1	kaushik	1	3000	1	2009-10-08 00:00:00	I
1	3	1	kaushik	I	1500	1	2009-10-08 00:00:00	ĺ
1	4	1	Chaitali	ì	2060	1	2008-05-20 00:00:00	I
1	5	1	Hardik	1	NULL	1	NULL	1
1	6	1	Komal	1	NULL	1	NULL	I
1	7	1	Muffy	1	NULL	1	NULL	I
1	3	1	kaushik	1	3000	1	2009-10-08 00:00:00	I
1	3	1	kaushik	1	1500	1	2009-10-08 00:00:00	I
1	2	1	Khilan	1	1560	1	2009-11-20 00:00:00	I
1	4	1	Chaitali	1	2060	1	2008-05-20 00:00:00	I



## UNION

#### **CUSTOMERS Table**

1	ID	NAME	AGE	1	ADDRESS	1	SALARY
-	1	Ramesh	32	+	Ahmedabad	+	2000.00
i	2	Khilan	25	Î	Delhi	i	1500.00
1	3	kaushik	23	1	Kota	1	2000.00
1	4	Chaitali	25	1	Mumbai	Ì	6500.00
1	5	Hardik	27	1	Bhopal	1	8500.00
1	6	Komal	22	1	MP	1	4500.00
1	7	Muffy	24	1	Indore	I	10000.00

#### **ORDERS Table**

OID	DATE		CUSTOMER_ID	AMOUNT
102	2009-10-08	00:00:00	3	3000
100	2009-10-08	00:00:00	3	1500
101	2009-11-20	00:00:00	2	1560
103	2008-05-20	00:00:00	4	2060

#### Query

SELECT ID, NAME, AMOUNT, DATE
FROM CUSTOMERS
LEFT JOIN ORDERS
ON CUSTOMERS.ID = ORDERS.CUSTOMER\_ID
UNION
SELECT ID, NAME, AMOUNT, DATE
FROM CUSTOMERS
RIGHT JOIN ORDERS
ON CUSTOMERS.ID = ORDERS.CUSTOMER\_ID;

I	D	1	NAME	1	AMOUNT	I	DATE
+		+		+		+	
1	1	1	Ranesh	ı	NULL	1	NULL.
1	2	1	Khilan	1	1560	1	2009-11-20 00:00:00
1	3	1	kaushik	I	3000	1	2009-10-08 00:00:00
	3	1	kaushik	ï	1500	1	2009-10-08 00:00:00
1	4	1	Chaitali	1	2060	1	2008-05-20 00:00:00
1	5	1	Hardik	Î	NULL	Ī	NULL
1	6	ĺ	Komal	ì	NULL	ì	NULL
1	7	i	Muffy	Î	NULL	ì	NULL

## **UNION ALL**

### Query

#### **CUSTOMERS Table**

ID	NAME	AGE	1	ADDRESS	SALARY
1	Ramesh	32	1	Ahmedabad	2000.00
1 2	Khilan	25	1	Delhi	1500.00
3	kaushik	23	1	Kota	2000.00
4	Chaitali	25	1	Mumbai	6500.00
5	Hardik	27	1	Bhopal	8500.00
6	Komal	22	1	MP	4500.00
1 7	Muffy	24	1	Indore	10000.00

#### **ORDERS Table**

OID	DATE		CUSTOMER_ID	AMOUNT
102	2009-10-08	00:00:00	3	3000
100	2009-10-08	00:00:00	3	1500
101	2009-11-20	00:00:00	2	1560
103	2008-05-20	00:00:00	4	2060

SELECT ID, NAME, AMOUNT, DATE
FROM CUSTOMERS
LEFT JOIN ORDERS
ON CUSTOMERS.ID = ORDERS.CUSTOMER\_ID
UNION ALL

SELECT ID, NAME, AMOUNT, DATE FROM CUSTOMERS RIGHT JOIN ORDERS ON CUSTOMERS.ID = ORDERS.CUSTOMER\_ID;

I	D	NAME	1	AMOUNT	DATE
	1	Ramesh	1	NULL	MULL
	2	Khilan	1	1560	2009-11-20 00:00:00
	3	kaushik	1	3000	2009-10-08 00:00:00
	3	kaushik	1	1500	2009-10-08 00:00:00
	4	Chaitali	1	2060	2008-05-20 00:00:00
	5	Hardik	1	NULL	NULL
	6	Komal	ï	NULL.	MULL
	7	Muffy	ï	NULL	NULL
	3	kaushik	1	3000	2009-10-08 00:00:00
	3	kaushik	1	1500	2009-10-08 00:00:00
	2	Khilan	1	1560	2009-11-20 00:00:00
	4	Chaitali	1	206e	2008-05-20 00:00:00

