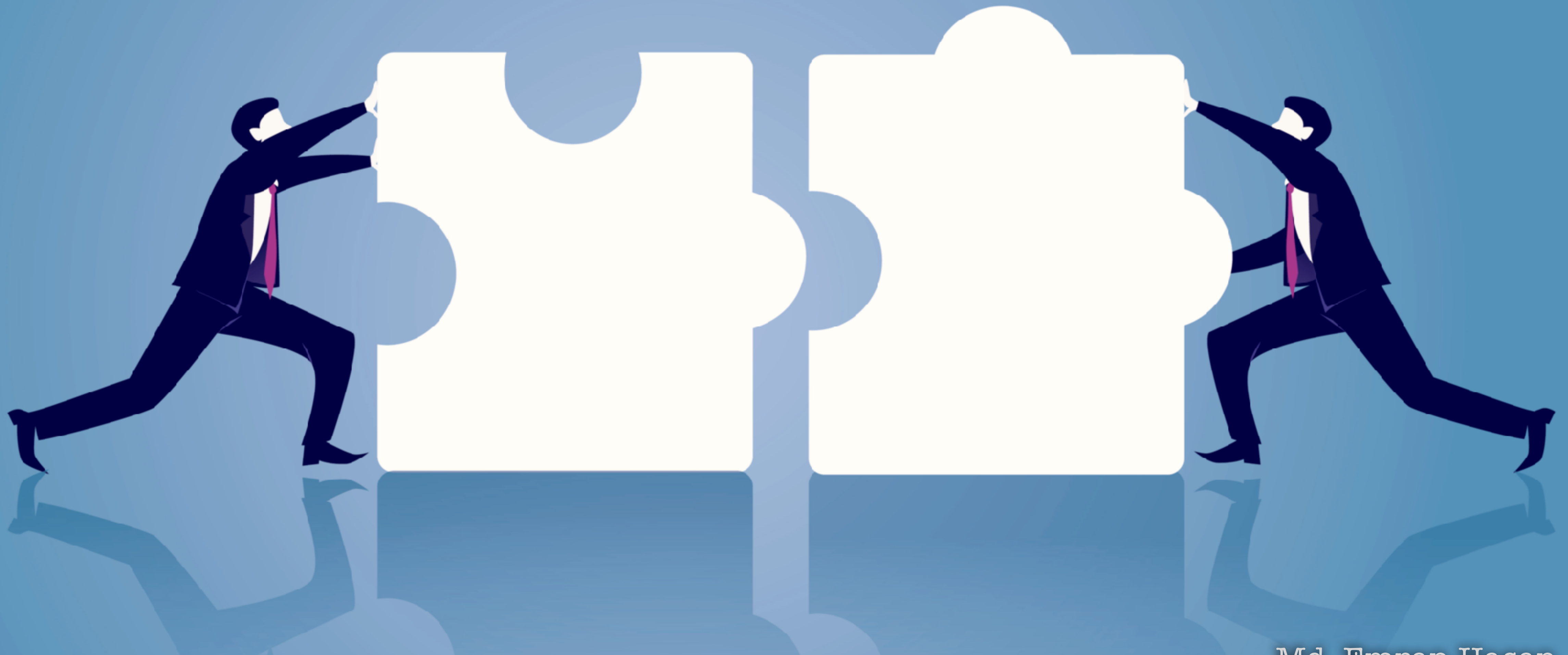


# JOIN (Basics)

The magic of RDBMS



Why?

Why?

Walmart

All

Search

Gift Cards

Registry

Lists

Weekly Ads

Store Finder

Track Order

Credit Card

Help

Hello, John

My Account

All Departments

Daily Savings Center

My Local Store

Pick it up TODAY

Tips & Ideas

FREE Walmart Grocery pickup

Thank you for your order #3911690705825

Continue Shopping

We'll send you an email with tracking information when your item ships.

Order placed

Value shipping

Arrives by **Tue, May 10**

Sold by Walmart.com

Order #3911690705825

Shipping address

John Newman

2125 Chestnut Street

San Francisco, CA 94123

test-order@baymard.com

Order placed

Processing

Shipped

Delivered

Crayola 83-Piece Bundle Set

Value shipping: Arrives by Tue, May 10

Quantity: 1

\$4.43

Check your [order status](#) on Walmart.com.

Order summary

Subtotal (1 item)

\$4.43

Value shipping

\$4.97

Est. tax

\$0.39

Total

\$9.79

Payment type

VISA

Ending in 8903

Billing address

John Newman

2125 Chestnut Street

San Francisco, CA 94123

test-order@baymard.com



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Why?

Data related to a single operation are distributed in several tables.

Gift Cards

Registry

Lists

Weekly Ads

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Credit Card

Help

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Total

\$9.79

Payment type

VISA

Ending in 8903

Billing address

John Newman

2125 Chestnut Street

San Francisco, CA 94123

test-order@baymard.com

# How JOIN Works?

```
SELECT id, tracking  
FROM orders  
WHERE id = 214;
```

id	tracking	customer_id	total_payable
213	123wuqfiii	34	260.00
214	456wuqfiii	145	12300.00
215	789wuqfiii	89	30.00



# How JOIN Works?

```
SELECT id, tracking, name  
FROM orders  
JOIN customers  
WHERE id = 214;
```

orders

id	tracking	customer_id	total_payable
213	123wuqfiii	34	260.00
214	456wuqfiii	145	12300.00
215	789wuqfiii	89	30.00

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orders			
id	tracking	customer_id	total_payable
213	123wuqfiii	34	260.00
214	456wuqfiii	145	12300.00
215	789wuqfiii	89	30.00

customers	
id	name
144	Md. Hasan
145	Abdul Hamid
146	Mohammad Ali



# How JOIN Works?

```
SELECT orders.id, orders.tracking, customers.name
FROM orders
JOIN customers
WHERE id = 214;
```

orders			
id	tracking	customer_id	total_payable
213	123wuqfiii	34	260.00
214	456wuqfiii	145	12300.00
215	789wuqfiii	89	30.00

customers	
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146	Mohammad Ali

# How JOIN Works?

```
SELECT o.id, o.tracking, c.name
FROM orders o
JOIN customers c
WHERE id = 214;
```

orders			
id	tracking	customer_id	total_payable
213	123wuqfiii	34	260.00
214	456wuqfiii	145	12300.00
215	789wuqfiii	89	30.00

customers	
id	name
144	Md. Hasan
145	Abdul Hamid
146	Mohammad Ali

# How JOIN Works?

```
SELECT o.id, o.tracking, c.name
FROM orders o
JOIN customers c ON o.customer_id = c.id
WHERE id = 214;
```

orders			
id	tracking	customer_id	total_payable
213	123wuqfiii	34	260.00
214	456wuqfiii	145	12300.00
215	789wuqfiii	89	30.00

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# How JOIN Works?

```
SELECT o.id, o.tracking, c.name
FROM orders o
JOIN customers c ON o.customer_id = c.id
WHERE id = 214;
```

orders		customers
id	tracking	name
213	123wuqfiii	Md. Hasan
214	456wuqfiii	Abdul Hamid
215	789wuqfiii	Mohammad Ali

# How JOIN Works?

```
SELECT o.id, o.tracking, c.name, oi.product_id, oi.quantity
FROM orders o
JOIN customers c ON o.customer_id = c.id
JOIN order_items oi ON oi.order_id = o.id
WHERE id = 214;
```

orders		customers
id	tracking	name
213	123wuqfiii	Md. Hasan
214	456wuqfiii	Abdul Hamid
215	789wuqfiii	Mohammad Ali

# How JOIN Works?

```
SELECT o.id, o.tracking, c.name, oi.product_id, oi.quantity
FROM orders o
JOIN customers c ON o.customer_id = c.id
JOIN order_items oi ON oi.order_id = o.id
WHERE id = 214;
```

orders		customers
id	tracking	name
213	123wuqfiii	Md. Hasan
214	456wuqfiii	Abdul Hamid
215	789wuqfiii	Mohammad Ali

order_items			
id	order_id	product_id	quantity
2034	213	2089	6
2035	214	232	1
2036	214	455	3
2037	215	298	1



# How JOIN Works?

```
SELECT o.id, o.tracking, c.name, oi.product_id, oi.quantity
FROM orders o
JOIN customers c ON o.customer_id = c.id
JOIN order_items oi ON oi.order_id = o.id
WHERE id = 214;
```

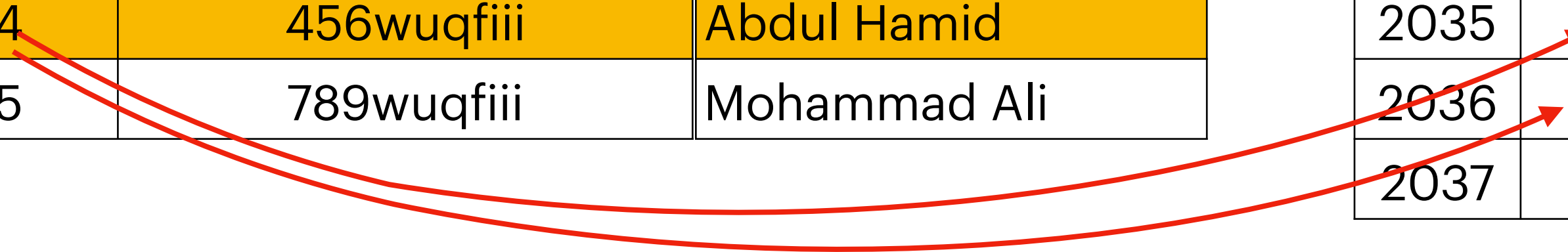
orders			customers				order_items			
id	tracking		name				id	order_id	product_id	quantity
213	123wuqfiii		Md. Hasan				2034	213	2089	6
214	456wuqfiii		Abdul Hamid				2035	214	232	1
215	789wuqfiii		Mohammad Ali				2036	214	455	3
							2037	215	298	1

# How JOIN Works?

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SELECT o.id, o.tracking, c.name, oi.product_id, oi.quantity
FROM orders o
JOIN customers c ON o.customer_id = c.id
JOIN order_items oi ON oi.order_id = o.id
WHERE id = 214;
```

orders		customers
id	tracking	name
213	123wuqfiii	Md. Hasan
214	456wuqfiii	Abdul Hamid
215	789wuqfiii	Mohammad Ali

order_items			
id	order_id	product_id	quantity
2034	213	2089	6
2035	214	232	1
2036	214	455	3
2037	215	298	1

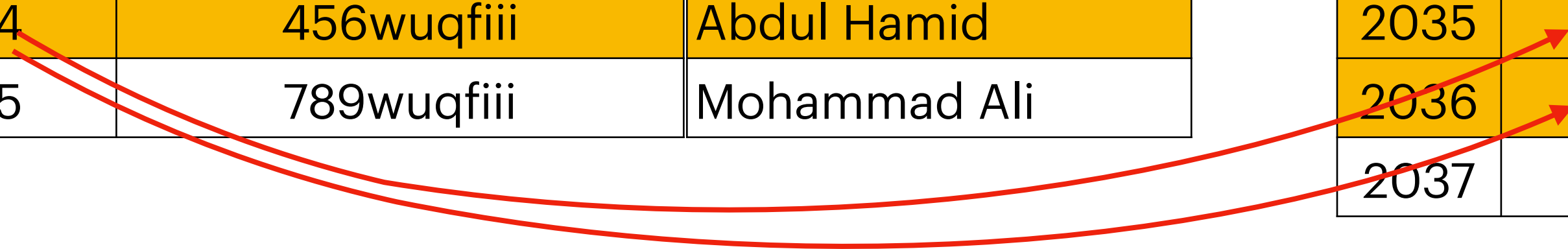


# How JOIN Works?

```
SELECT o.id, o.tracking, c.name, oi.product_id, oi.quantity
FROM orders o
JOIN customers c ON o.customer_id = c.id
JOIN order_items oi ON oi.order_id = o.id
WHERE id = 214;
```

orders		customers
id	tracking	name
213	123wuqfiii	Md. Hasan
214	456wuqfiii	Abdul Hamid
215	789wuqfiii	Mohammad Ali

order_items			
id	order_id	product_id	quantity
2034	213	2089	6
2035	214	232	1
2036	214	455	3
2037	215	298	1



# How JOIN Works?

```
SELECT o.id, o.tracking, c.name, oi.product_id, oi.quantity
FROM orders o
JOIN customers c ON o.customer_id = c.id
JOIN order_items oi ON oi.order_id = o.id
WHERE id = 214;
```

orders			customers				order_items			
id	tracking		name				id	order_id	product_id	quantity
213	123wuqfiii		Md. Hasan				2034	213	2089	6
214	456wuqfiii		Abdul Hamid				2035	214	232	1
214	456wuqfiii		Abdul Hamid				2036	214	455	3
215	789wuqfiii		Mohammad Ali				2037	215	298	1



# How JOIN Works?

```
SELECT o.id, o.tracking, c.name, oi.product_id, oi.quantity
FROM orders o
JOIN customers c ON o.customer_id = c.id
JOIN order_items oi ON oi.order_id = o.id
WHERE id = 214;
```

orders		customers	order_items	
id	tracking	name	product_id	quantity
213	123wuqfiii	Md. Hasan	2089	6
214	456wuqfiii	Abdul Hamid	232	1
214	456wuqfiii	Abdul Hamid	455	3
215	789wuqfiii	Mohammad Ali	298	1

# How JOIN Works?

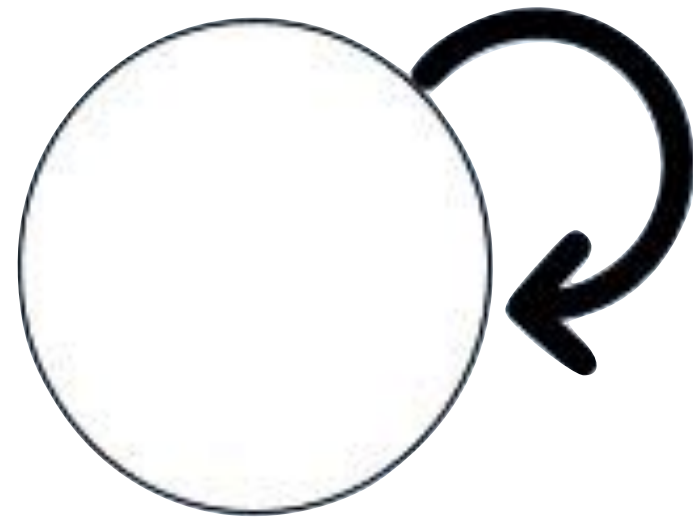
```
SELECT o.id, o.tracking, c.name, oi.product_id, oi.quantity, p.name, p.price
FROM orders o
JOIN customers c ON o.customer_id = c.id
JOIN order_items oi ON oi.order_id = o.id
JOIN products p ON oi.product_id = p.id
WHERE id = 214;
```

orders		customers	order_items		products	
id	tracking	name	product_id	quantity	name	price
213	123wuqfiii	Md. Hasan	2089	6	3AA battery	15.00
214	456wuqfiii	Abdul Hamid	232	1	Apple AirPods 2	30000.00
214	456wuqfiii	Abdul Hamid	455	3	Charging Cable	150.00
215	789wuqfiii	Mohammad Ali	298	1	Phone stand 37A	80.00

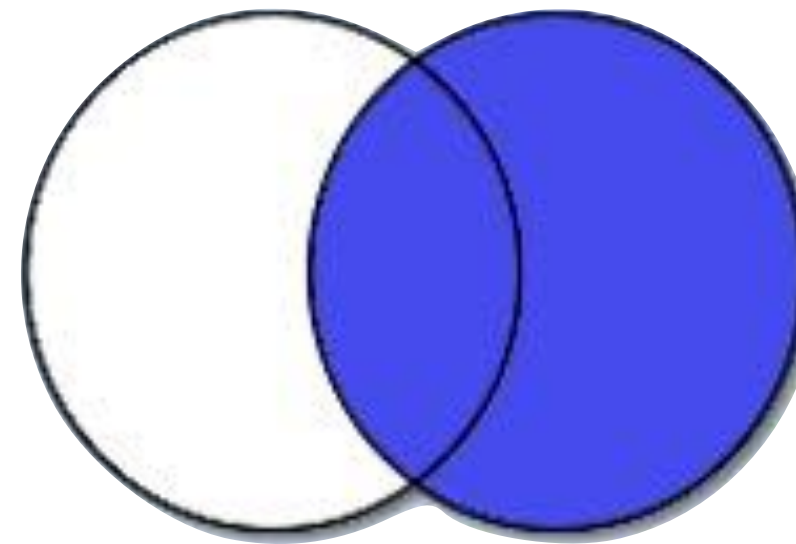
# Types Of Join

# Types Of Join

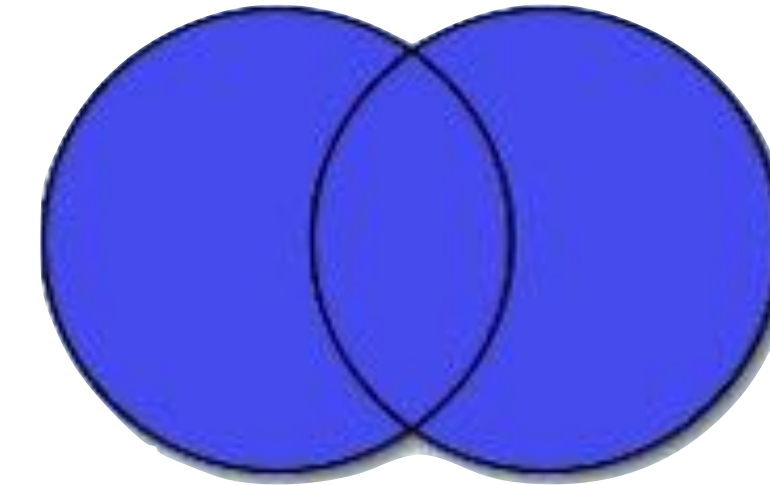
Self Join



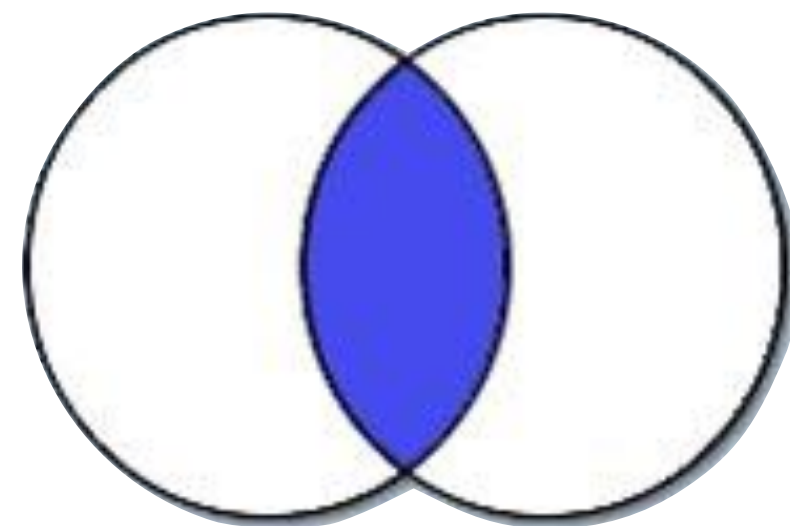
Right Join



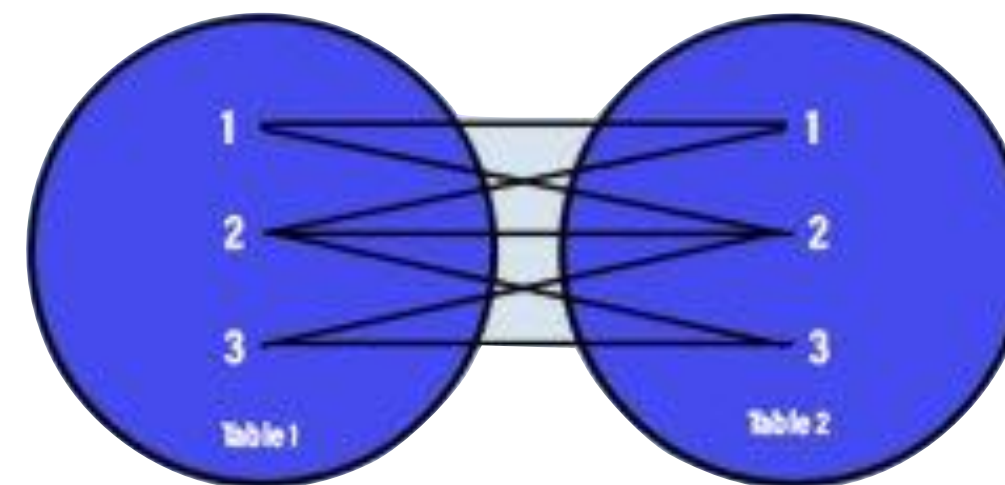
Full Join



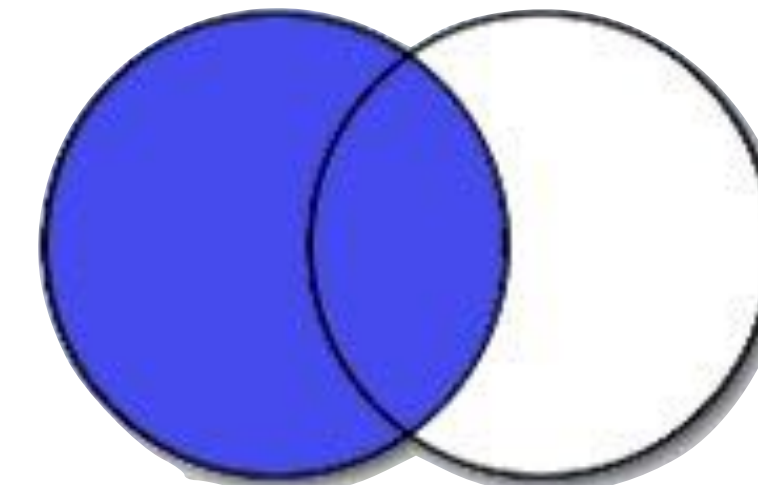
Inner Join



Cross Join



Left Join





# Left Join

```
SELECT e.name, e.designation, a.city, a.state
FROM employees e
JOIN addresses a ON a.employee_id = e.id;
```

employees

id	name	designation
1089	Abu Kashem	Officer
1090	Ahmed Fafiq	Officer
1091	Mahbubul Alaom	Manager
1092	Md. Tarek	Sr. Officer

Addresses

id	emp_id	line_1	line_2	city	state
2034	2049	Loren Ipsam	Loren Ipsam	Dhaka	Uttara
2035	1090	Loren Ipsam	Loren Ipsam	Dhaka	Motijhil
2036	1091	Loren Ipsam	Loren Ipsam	Barisal	B. Sadar
2037	1034	Loren Ipsam	Loren Ipsam	Dhaka	Gulshan

# Left Join

```
SELECT e.name, e.designation, a.city, a.state
FROM employees e
JOIN addresses a ON a.employee_id = e.id;
```

employees			Addresses	
id	name	designation	city	state
1090	Ahmed Fafiq	Officer	Dhaka	Motijhil
1091	Mahbubul Alaom	Manager	Barisal	B. Sadar

# Left Join

```
SELECT e.name, e.designation, a.city, a.state
FROM employees e
JOIN addresses a ON a.employee_id = e.id;
```

employees			Addresses	
id	name	designation	city	state
1090	Ahmed Fafiq	Officer	Dhaka	Motijhil
1091	Mahbubul Alaom	Manager	Barisal	B. Sadar

✗ Employees that have no address has been excluded!

# Left Join

```
SELECT e.name, e.designation, a.city, a.state
FROM employees e
LEFT JOIN addresses a ON a.employee_id = e.id;
```

employees

id	name	designation
1089	Abu Kashem	Officer
1090	Ahmed Fafiq	Officer
1091	Mahbubul Alaom	Manager
1092	Md. Tarek	Sr. Officer

Addresses

id	emp_id	line_1	line_2	city	state
2035	1090	Loren Ipsam	Loren Ipsam	Dhaka	Motijhil
2036	1091	Loren Ipsam	Loren Ipsam	Barisal	B. Sadar

# Left Join

```
SELECT e.name, e.designation, a.city, a.state
FROM employees e
LEFT JOIN addresses a ON a.employee_id = e.id;
```

employees			Addresses	
id	name	designation	city	state
1089	Abu Kashem	Officer	<i>NULL</i>	<i>NULL</i>
1090	Ahmed Fafiq	Officer	Dhaka	Motijhil
1091	Mahbubul Alaom	Manager	Barisal	B. Sadar
1092	Md. Tarek	Sr. Officer	<i>NULL</i>	<i>NULL</i>

# Left Join

```
SELECT e.name, e.designation, a.city, a.state
FROM employees e
LEFT JOIN addresses a ON a.employee_id = e.id;
```

🤗 Keeping ALL records from LEFT. And connecting matching records from right side.

employees			Addresses	
id	name	designation	city	state
1089	Abu Kashem	Officer	<i>NULL</i>	<i>NULL</i>
1090	Ahmed Fafiq	Officer	Dhaka	Motijhil
1091	Mahbubul Alaom	Manager	Barisal	B. Sadar
1092	Md. Tarek	Sr. Officer	<i>NULL</i>	<i>NULL</i>



# Self Join

```
SELECT c.id, c.name, c.parent_id, pc.name parent_name
FROM categories c
LEFT JOIN categories pc ON c.parent_id = pc.id;
```

categories (c)		
id	name	parent_id
1089	Warables	
1090	Nail Polish	35
1091	Mobile phone	34
1092	Shoes	

categories (pc)		
id	name	parent_id
34	Electronics	
35	Cosmetics	
36	Clothing	
37	Mans Clothing	36

# Self Join

```
SELECT c.id, c.name, c.parent_id, pc.name parent_name
FROM categories c
LEFT JOIN categories pc ON c.parent_id = pc.id;
```

categories (c)			categories (pc)		
id	name	parent_id	id	name	parent_id
1089	Warables		34	Electronics	
1090	Nail Polish	35	35	Cosmetics	
1091	Mobile phone	34	36	Clothing	
1092	Shoes		37	Mans Clothing	36

# Self Join

```
SELECT c.id, c.name, c.parent_id, pc.name parent_name
FROM categories c
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```

categories (c)		
id	name	parent_id
1089	Warables	
1090	Nail Polish	35
1091	Mobile phone	34
1092	Shoes	

categories (pc)		
parent_id	parent_name	parent_id
35	Cosmetics	
34	Electronics	

# Self Join

```
SELECT c.id, c.name, c.parent_id, pc.name parent_name
FROM categories c
LEFT JOIN categories pc ON c.parent_id = pc.id;
```

categories (c)			categories (pc)
id	name	parent_id	parent_name
1089	Warables		
1090	Nail Polish	35	Cosmetics
1091	Mobile phone	34	Electronics
1092	Shoes		

Questions?

