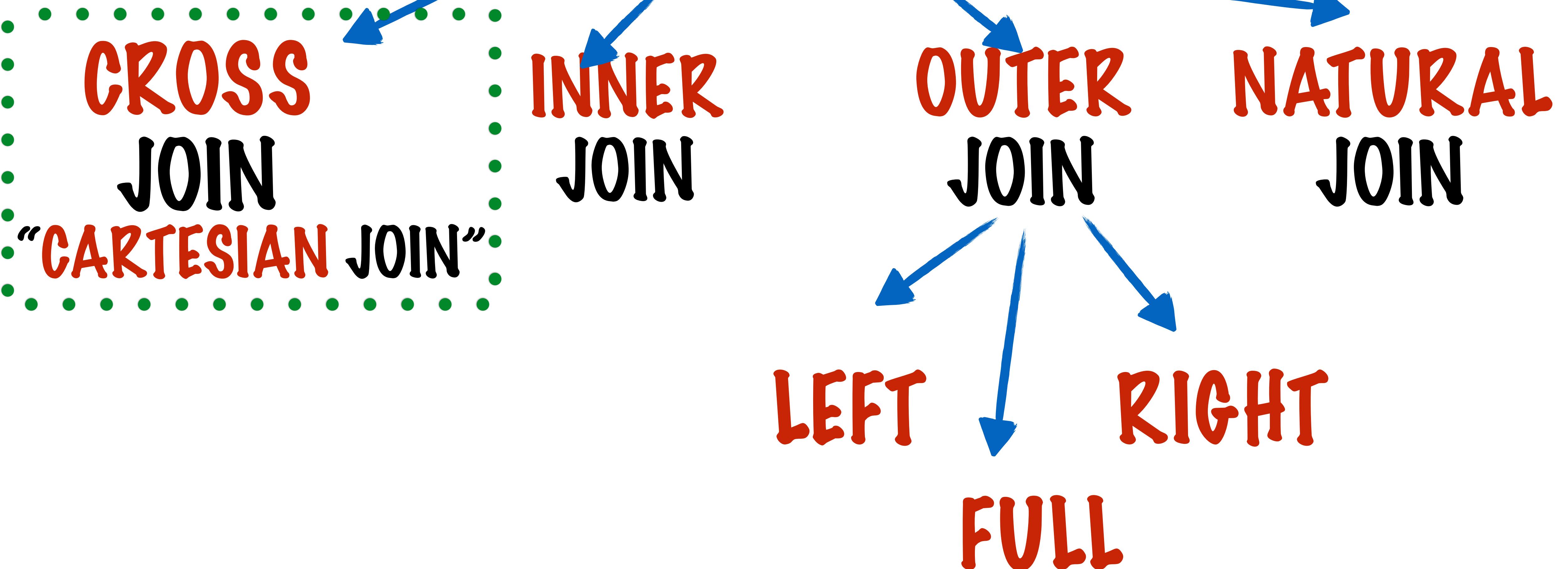


# JOINS



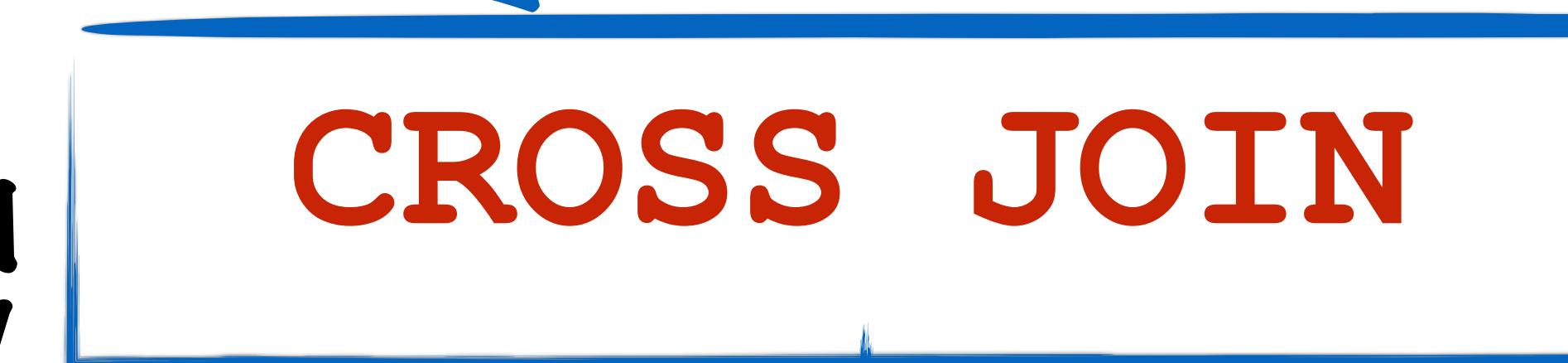
M COLUMNS, X ROWS

INPUT TABLE 1

N COLUMNS, Y ROWS

INPUT TABLE 2

GIVEN 2 TABLES AS INPUT,  
CROSS JOIN WILL CREATE AN  
OUTPUT TABLE WITH 1 ROW  
FOR EVERY COMBINATION OF  
THE INPUT ROWS



OUTPUT TABLE

M+N COLUMNS, X\*Y ROWS

# 'STORES'

StoreID	StoreLocation	City
1	Bellandur	Bangalore
2	Koramangala	Bangalore

# CROSS JOIN

# "CARTESIAN JOIN"

# 'PRODUCTS'

ProductID	ProductName
1	Bananas
2	Milk
3	Nutella
4	Peanut Butter

# 'SALES\_DATA'

StoreID	ProductID	Date	Revenue
1	1	January 18,2016	8,236.33
1	3	January 18,2016	7,455.67
1	4	January 18,2016	5,316.89
1	2	January 18,2016	2,433.76
2	1	January 18,2016	9,456.01
2	3	January 18,2016	3,644.33

**'STORES'**

StoreID	StoreLocation	City

**CROSS  
JOIN**

**'PRODUCTS'**

ProductID	ProductName

**"CARTESIAN JOIN"**

**SELECT**

**STORELOCATION ,  
PRODUCTNAME**

**FROM**

**STORES  
CROSS JOIN  
PRODUCTS ;**

# 'STORES'

StoreID	StoreLocation	City
1	Bellandur	Bangalore
2	Koramangala	Bangalore

# STORES

## CROSS JOIN

## PRODUCTS

## OPERATOR

# 'PRODUCTS'

ProductID	ProductName
1	Bananas
2	Milk
3	Nutella
4	Peanut Butter

Store	StoreLocation	City	ProductID	ProductName
1	Bellandur	Bangalore	1	Bananas
1	Bellandur	Bangalore	2	Milk
1	Bellandur	Bangalore	3	Nutella
1	Bellandur	Bangalore	4	Peanut Butter
2	Koramangala	Bangalore	1	Bananas
2	Koramangala	Bangalore	2	Milk
2	Koramangala	Bangalore	3	Nutella
2	Koramangala	Bangalore	4	Peanut Butter

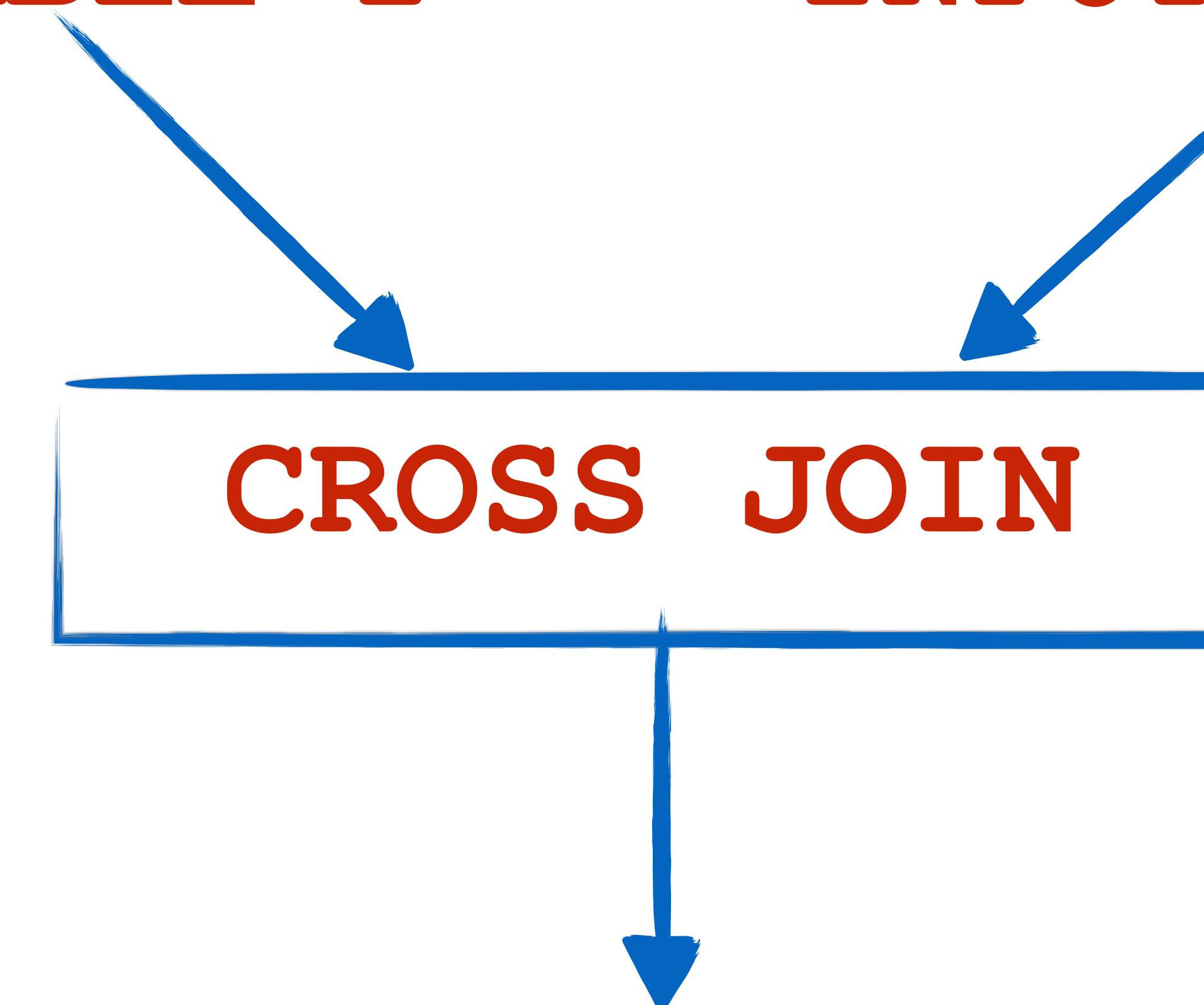
## OUTPUT

M COLUMNS, X ROWS

INPUT TABLE 1

N COLUMNS, Y ROWS

INPUT TABLE 2



OUTPUT TABLE

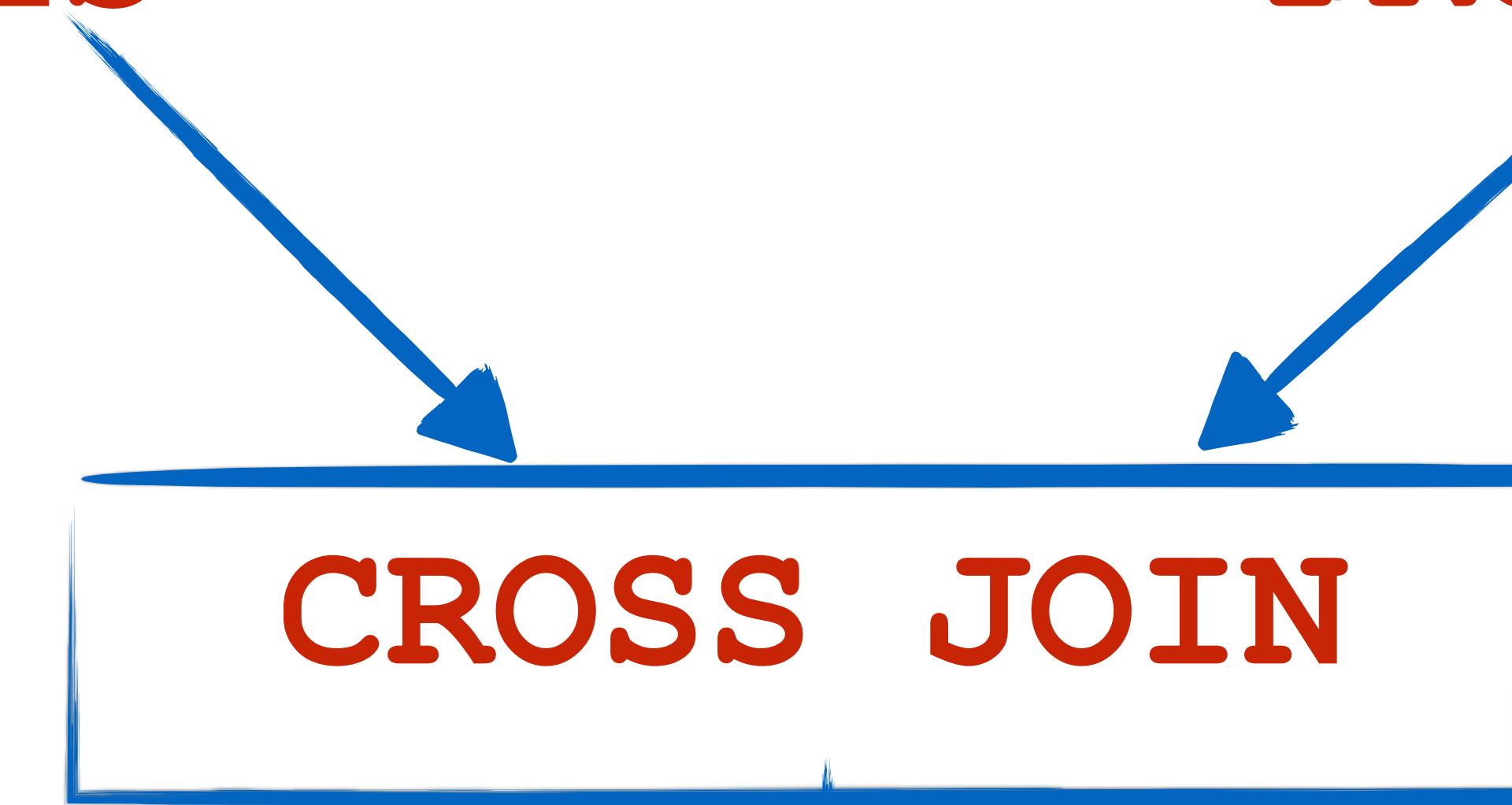
M+N COLUMNS, X\*Y ROWS

M COLUMNS, X ROWS

INPUT TABLE 1

N COLUMNS, Y ROWS

INPUT TABLE 2



STORES X \* Y PRODUCTS  
OUTPUT TABLE

M+N COLUMNS, X\*Y ROWS

StoreID	StoreLocation	City

**STORES**

ProductID	ProductName

**PRODUCTS**

**CROSS JOIN**

**STORES X PRODUCTS**

StoreID	StoreLocation	City	ProductID	ProductName

StoreID	StoreLocation	City

**STORES**

ProductID	ProductName

**PRODUCTS**

**CROSS JOIN**

**STORES X PRODUCTS**

StoreID	StoreLocation	City	ProductID	ProductName

StoreID	StoreLocation	City
1	Bellandur	Bangalore
2	Koramangala	Bangalore

**STORES**

**2 ROWS**

ProductID	ProductName
1	Bananas
2	Milk
3	Nutella
4	Peanut Butter

**PRODUCTS**

**4 ROWS**

**CROSS JOIN**

**STORES X PRODUCTS**

**$2 \times 4 = 8 \text{ ROWS}$**

StoreID	StoreLocation	City	ProductID	ProductName
1	Bellandur	Bangalore	1	Bananas
1	Bellandur	Bangalore	2	Milk
1	Bellandur	Bangalore	3	Nutella
1	Bellandur	Bangalore	4	Peanut Butter
2	Koramangala	Bangalore	1	Bananas
2	Koramangala	Bangalore	2	Milk
2	Koramangala	Bangalore	3	Nutella
2	Koramangala	Bangalore	4	Peanut Butter

StoreID	StoreLocation	City
1	Bellandur	Bangalore
2	Koramangala	Bangalore

**STORES**

ProductID	ProductName
1	Bananas
2	Milk
3	Nutella
4	Peanut Butter

**PRODUCTS**

**CROSS JOIN**

**STORES X PRODUCTS**

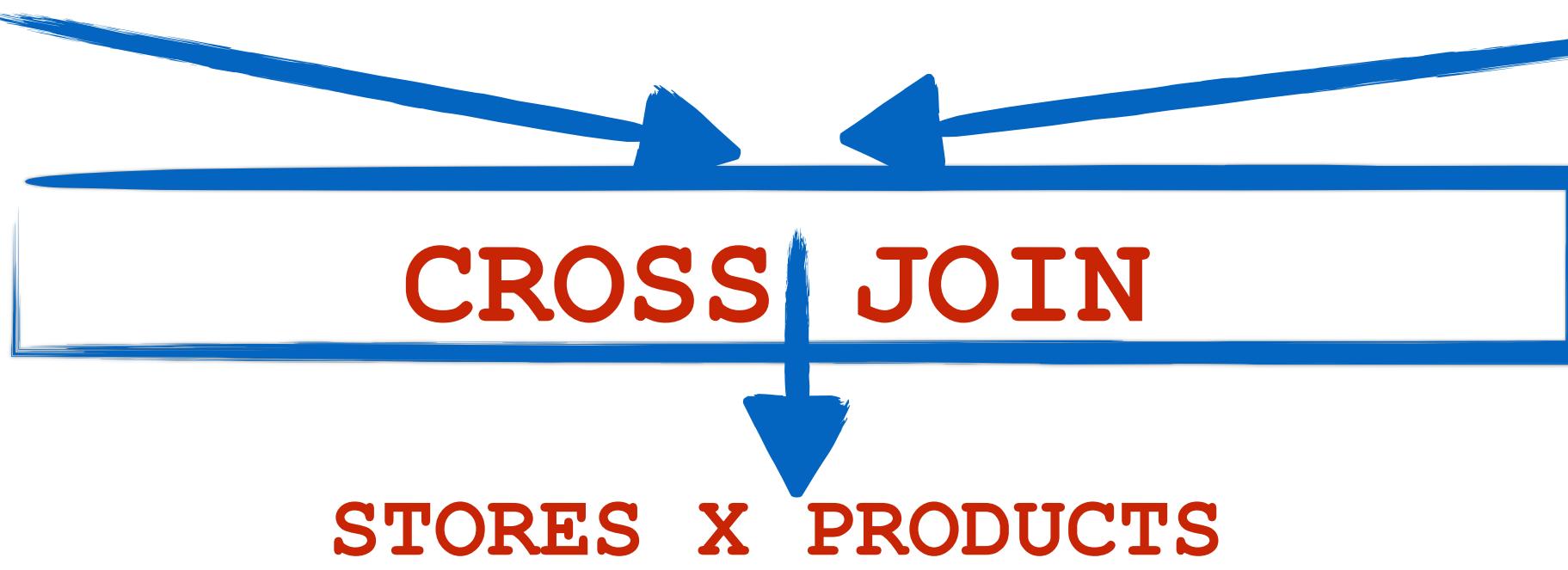
Store ID	StoreLocation	City	ProductID	ProductName

StoreID	StoreLocation	City
1	Bellandur	Bangalore
2	Koramangala	Bangalore

**STORES**

ProductID	ProductName
1	Bananas
2	Milk
3	Nutella
4	Peanut Butter

**PRODUCTS**



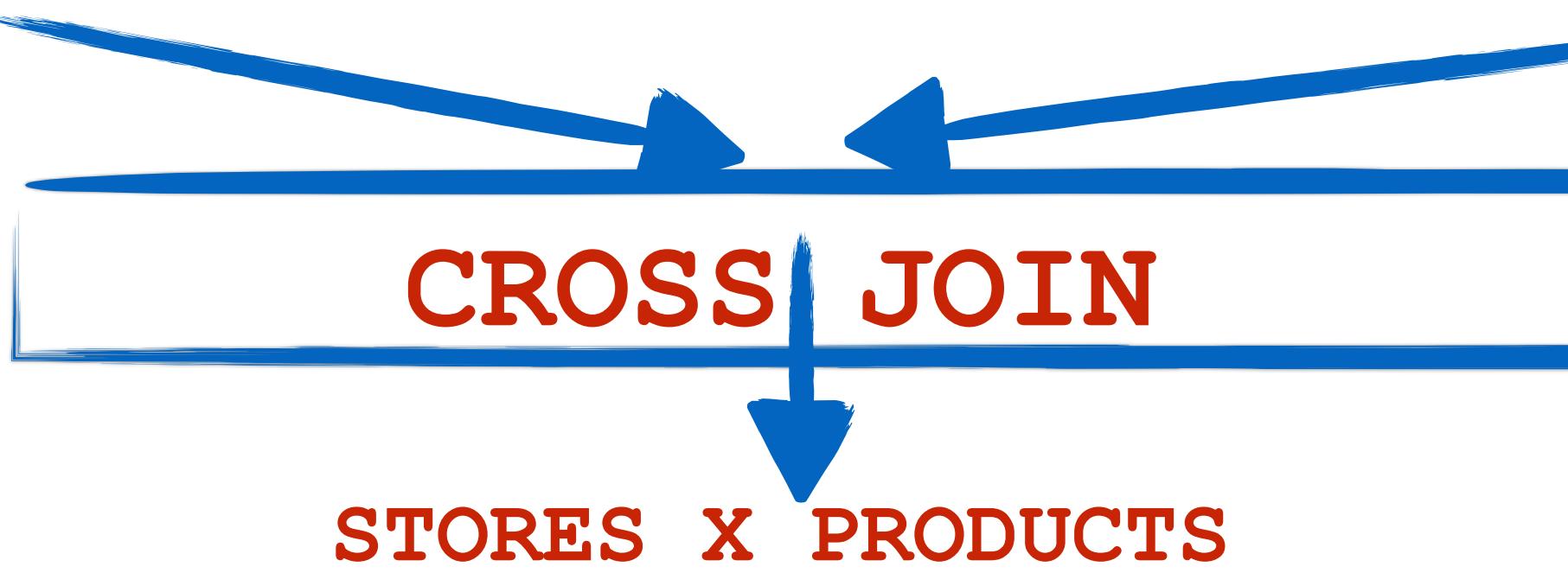
Store ID	StoreLocation	City	ProductID	ProductName

StoreID	StoreLocation	City
1	Bellandur	Bangalore
2	Koramangala	Bangalore

**STORES**

ProductID	ProductName
1	Bananas
2	Milk
3	Nutella
4	Peanut Butter

**PRODUCTS**



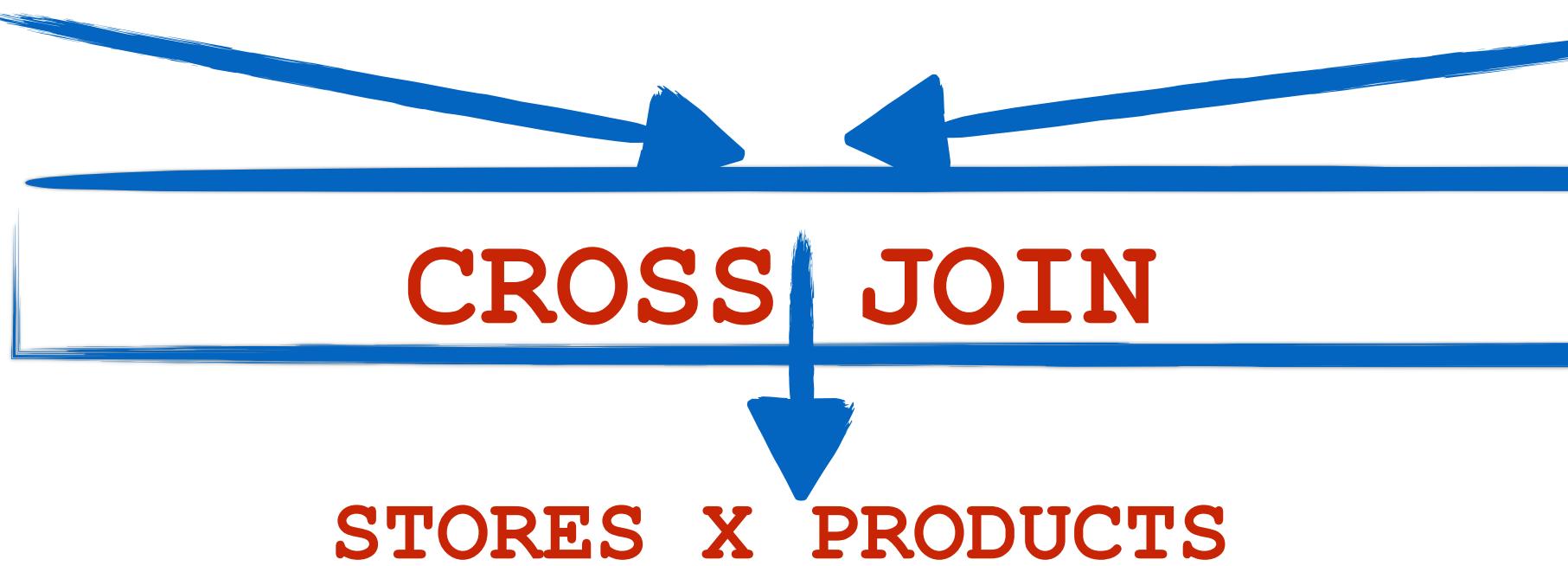
Store ID	StoreLocation	City	ProductID	ProductName
			1	Bananas
			2	Milk
			3	Nutella
			4	Peanut Butter

StoreID	StoreLocation	City
1	Bellandur	Bangalore
2	Koramangala	Bangalore

## STORES

ProductID	ProductName
1	Bananas
2	Milk
3	Nutella
4	Peanut Butter

## PRODUCTS



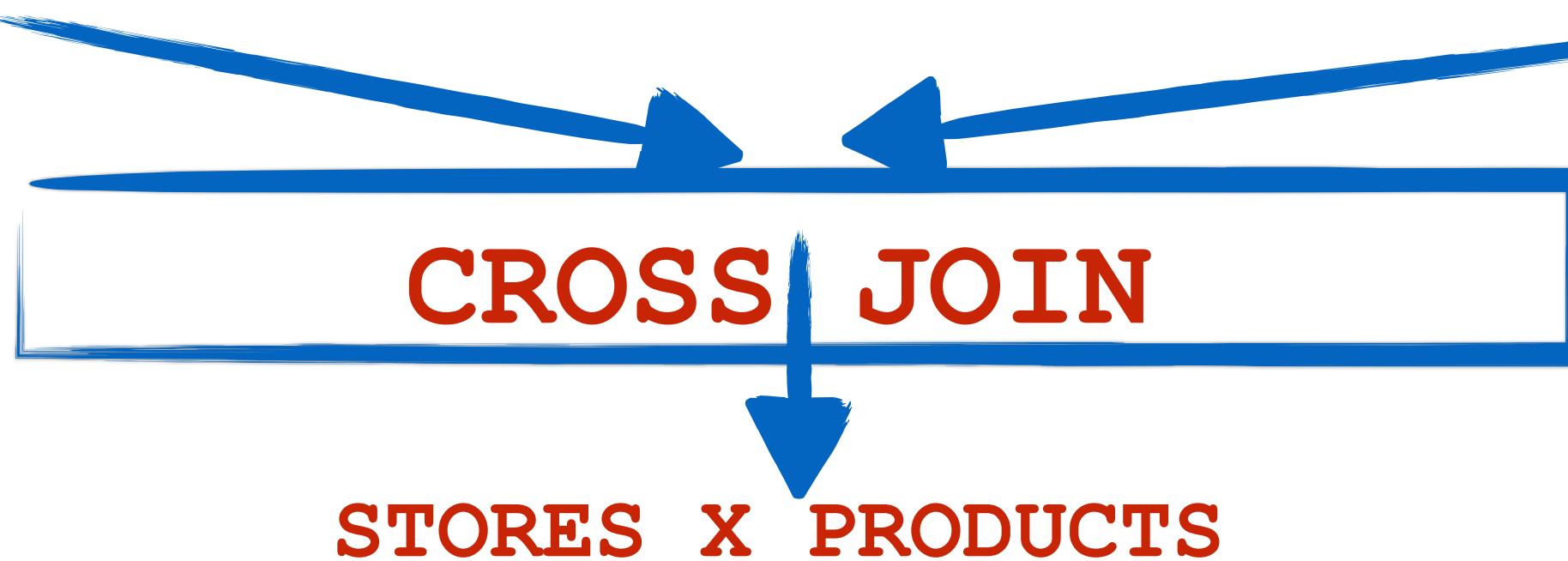
Store ID	StoreLocation	City	ProductID	ProductName
1	Bellandur	Bangalore	1	Bananas
1	Bellandur	Bangalore	2	Milk
1	Bellandur	Bangalore	3	Nutella
1	Bellandur	Bangalore	4	Peanut Butter

StoreID	StoreLocation	City
1	Bellandur	Bangalore
2	Koramangala	Bangalore

## STORES

ProductID	ProductName
1	Bananas
2	Milk
3	Nutella
4	Peanut Butter

## PRODUCTS



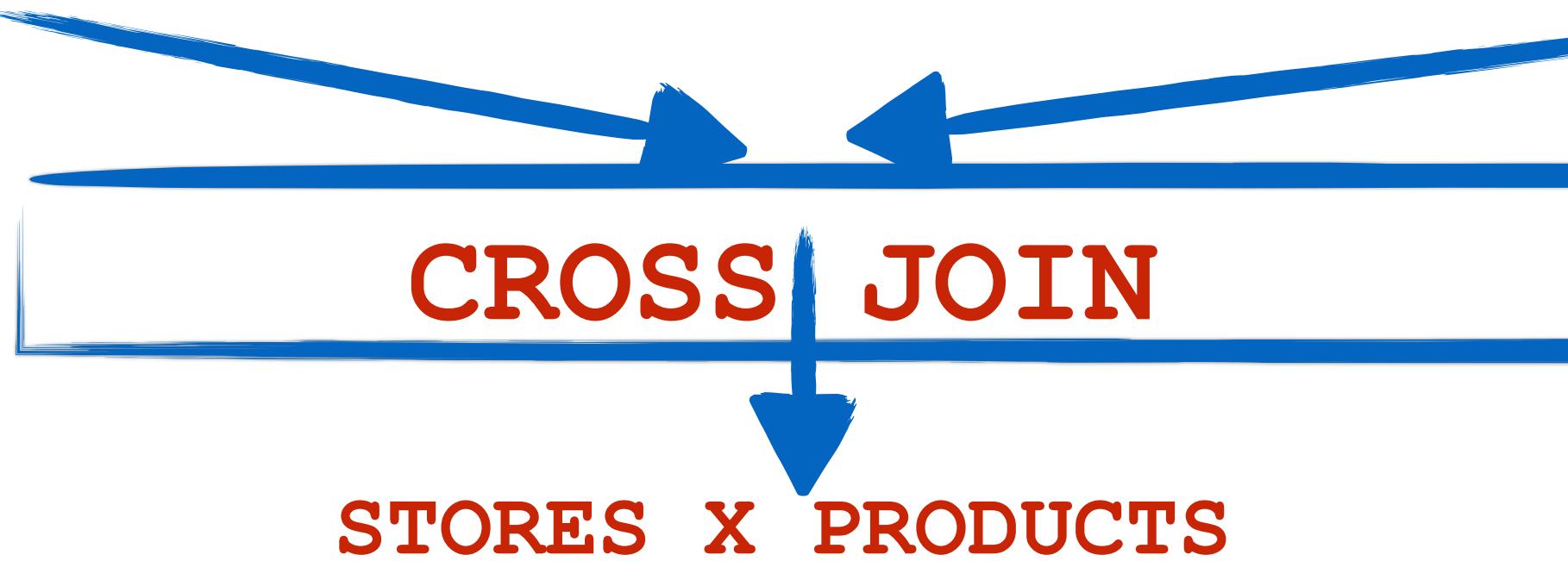
Store ID	StoreLocation	City	ProductID	ProductName
1	Bellandur	Bangalore	1	Bananas
1	Bellandur	Bangalore	2	Milk
1	Bellandur	Bangalore	3	Nutella
1	Bellandur	Bangalore	4	Peanut Butter

StoreID	StoreLocation	City
1	Bellandur	Bangalore
2	Koramangala	Bangalore

**STORES**

ProductID	ProductName
1	Bananas
2	Milk
3	Nutella
4	Peanut Butter

**PRODUCTS**



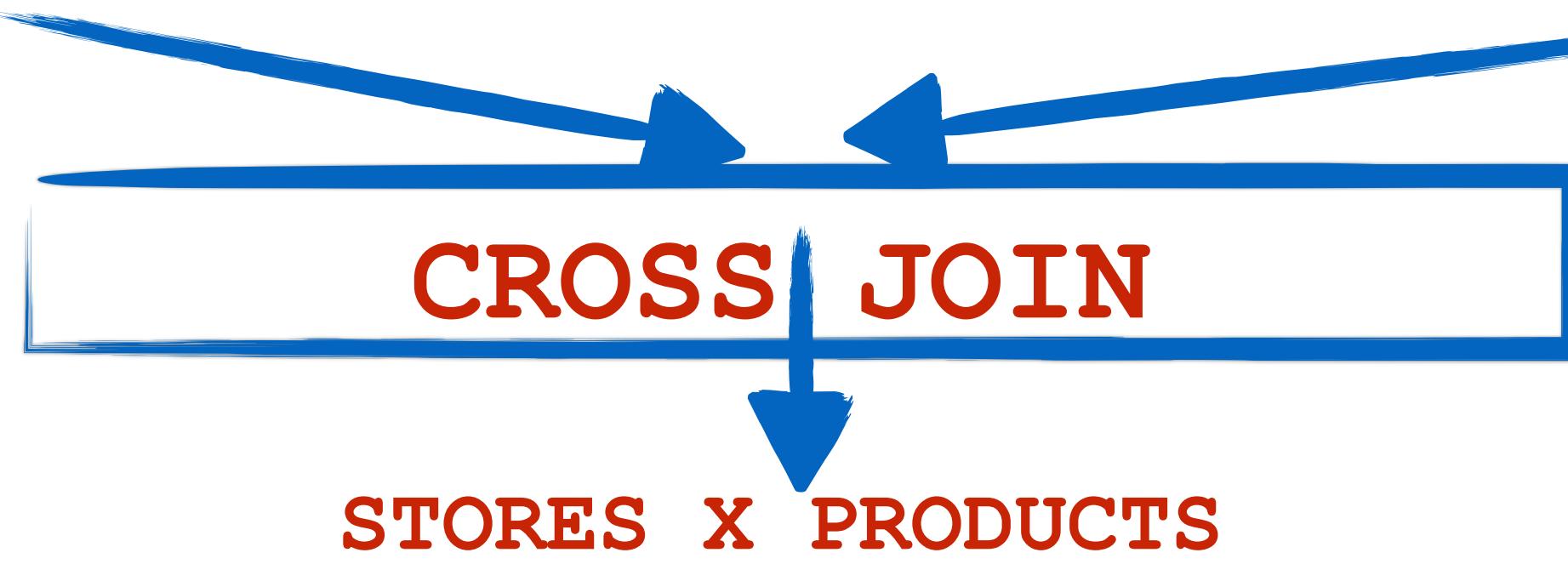
Store ID	StoreLocation	City	ProductID	ProductName
1	Bellandur	Bangalore	1	Bananas
1	Bellandur	Bangalore	2	Milk
1	Bellandur	Bangalore	3	Nutella
1	Bellandur	Bangalore	4	Peanut Butter

StoreID	StoreLocation	City
1	Bellandur	Bangalore
2	Koramangala	Bangalore

## STORES

ProductID	ProductName
1	Bananas
2	Milk
3	Nutella
4	Peanut Butter

## PRODUCTS



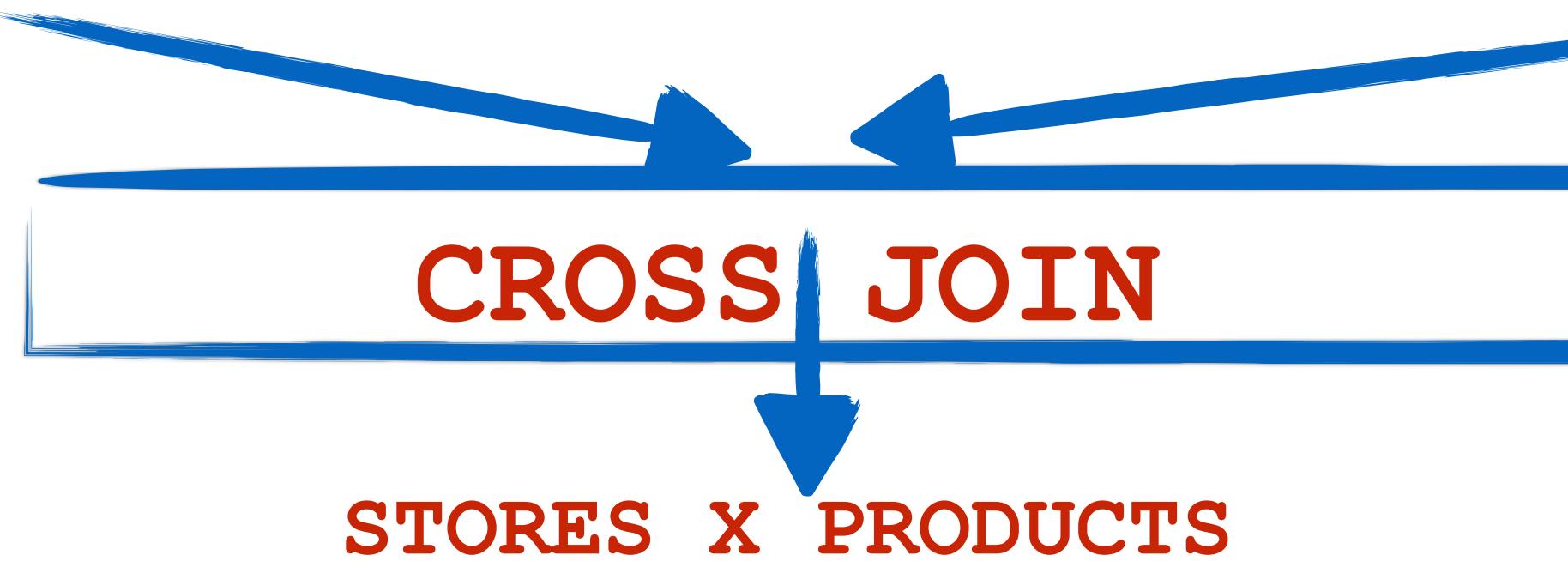
Store ID	StoreLocation	City	ProductID	ProductName
1	Bellandur	Bangalore	1	Bananas
1	Bellandur	Bangalore	2	Milk
1	Bellandur	Bangalore	3	Nutella
1	Bellandur	Bangalore	4	Peanut Butter

StoreID	StoreLocation	City
1	Bellandur	Bangalore
2	Koramangala	Bangalore

**STORES**

ProductID	ProductName
1	Bananas
2	Milk
3	Nutella
4	Peanut Butter

**PRODUCTS**



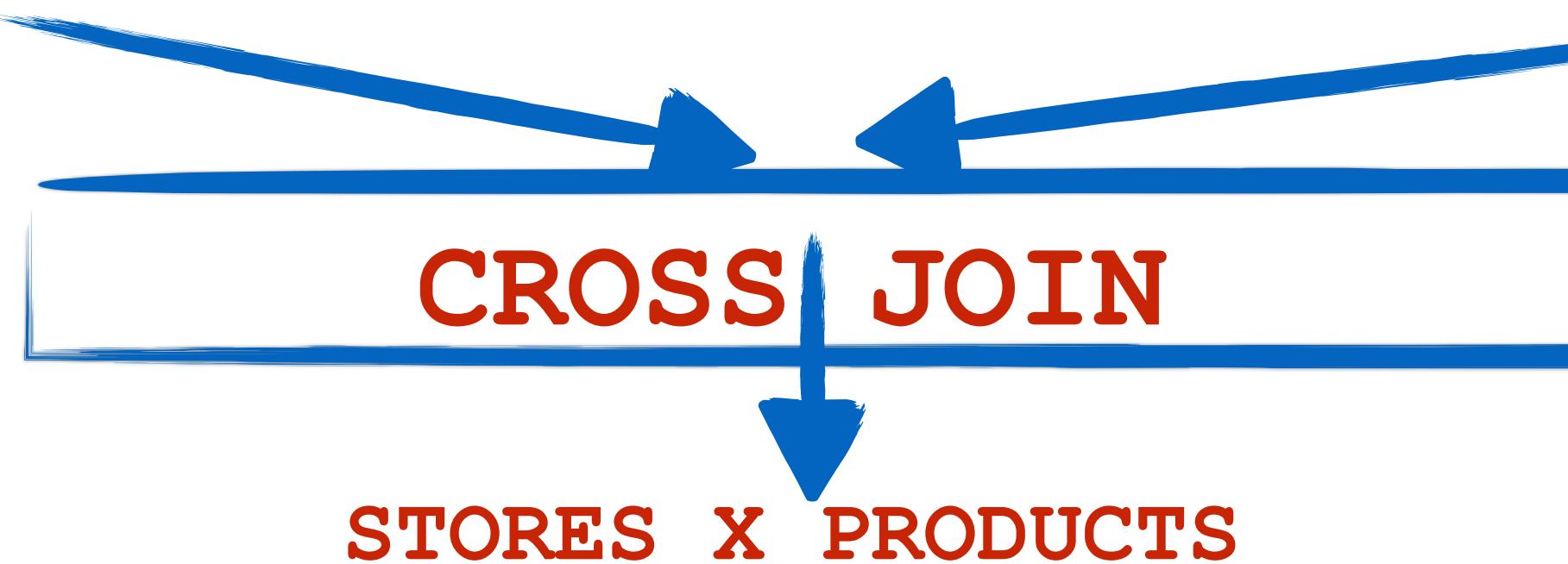
Store ID	StoreLocation	City	ProductID	ProductName
1	Bellandur	Bangalore	1	Bananas
1	Bellandur	Bangalore	2	Milk
1	Bellandur	Bangalore	3	Nutella
1	Bellandur	Bangalore	4	Peanut Butter

StoreID	StoreLocation	City
1	Bellandur	Bangalore
2	Koramangala	Bangalore

## STORES

ProductID	ProductName
1	Bananas
2	Milk
3	Nutella
4	Peanut Butter

## PRODUCTS



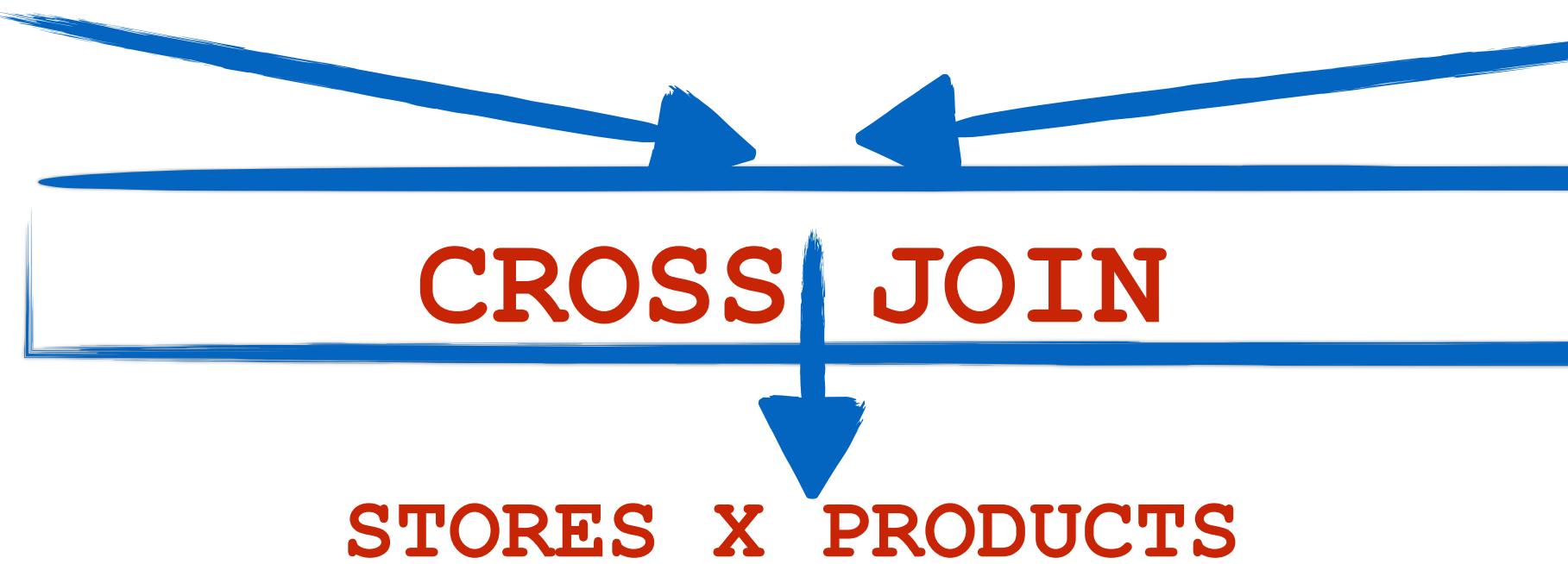
StoreID	StoreLocation	City	ProductID	ProductName
1	Bellandur	Bangalore	1	Bananas
1	Bellandur	Bangalore	2	Milk
1	Bellandur	Bangalore	3	Nutella
1	Bellandur	Bangalore	4	Peanut Butter
			1	Bananas
			2	Milk
			3	Nutella
			4	Peanut Butter

StoreID	StoreLocation	City
1	Bellandur	Bangalore
2	Koramangala	Bangalore

## STORES

ProductID	ProductName
1	Bananas
2	Milk
3	Nutella
4	Peanut Butter

## PRODUCTS



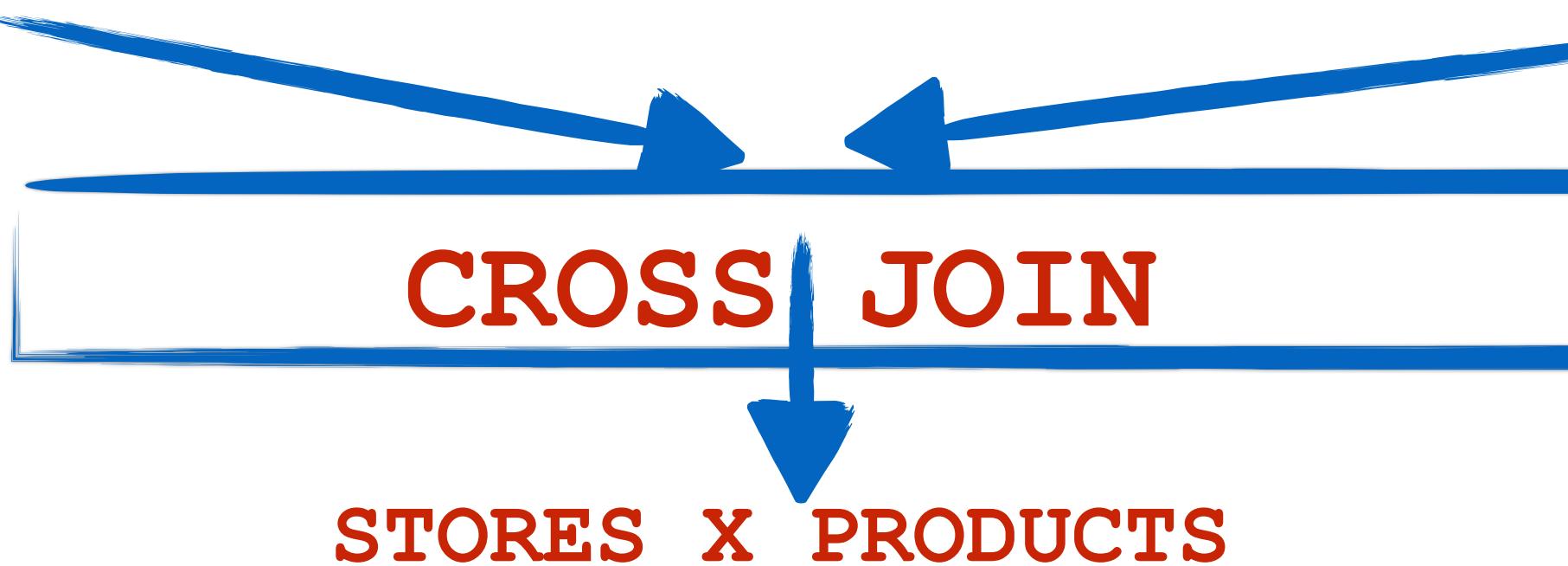
StoreID	StoreLocation	City	ProductID	ProductName
1	Bellandur	Bangalore	1	Bananas
1	Bellandur	Bangalore	2	Milk
1	Bellandur	Bangalore	3	Nutella
1	Bellandur	Bangalore	4	Peanut Butter
2	Koramangala	Bangalore	1	Bananas
2	Koramangala	Bangalore	2	Milk
2	Koramangala	Bangalore	3	Nutella
2	Koramangala	Bangalore	4	Peanut Butter

StoreID	StoreLocation	City
1	Bellandur	Bangalore
2	Koramangala	Bangalore

## STORES

ProductID	ProductName
1	Bananas
2	Milk
3	Nutella
4	Peanut Butter

## PRODUCTS



StoreID	StoreLocation	City	ProductID	ProductName
1	Bellandur	Bangalore	1	Bananas
1	Bellandur	Bangalore	2	Milk
1	Bellandur	Bangalore	3	Nutella
1	Bellandur	Bangalore	4	Peanut Butter
2	Koramangala	Bangalore	1	Bananas
2	Koramangala	Bangalore	2	Milk
2	Koramangala	Bangalore	3	Nutella
2	Koramangala	Bangalore	4	Peanut Butter

**'STORES'**

StoreID	StoreLocation	City

**CROSS  
JOIN**

**'PRODUCTS'**

ProductID	ProductName

**"CARTESIAN JOIN"**

**SELECT**

**STORELOCATION ,  
PRODUCTNAME**

**FROM**

**STORES  
CROSS JOIN  
PRODUCTS ;**

**SELECT SOME COLUMNS**

M COLUMNS, X ROWS  
**INPUT TABLE 1**

N COLUMNS, Y ROWS  
**INPUT TABLE 2**

**CROSS JOIN**

**OUTPUT TABLE**  
M+N COLUMNS, X\*Y ROWS

**ONLY THOSE COLUMNS FROM M+N  
COLUMNS, X\*Y ROWS**

# 'STORES'

StoreID	StoreLocation	City

# CROSS JOIN

## "CARTESIAN JOIN"

# 'PRODUCTS'

ProductID	ProductName

SELECT

FROM

STORELOCATION ,  
PRODUCTNAME

STORES  
CROSS JOIN  
PRODUCTS ;

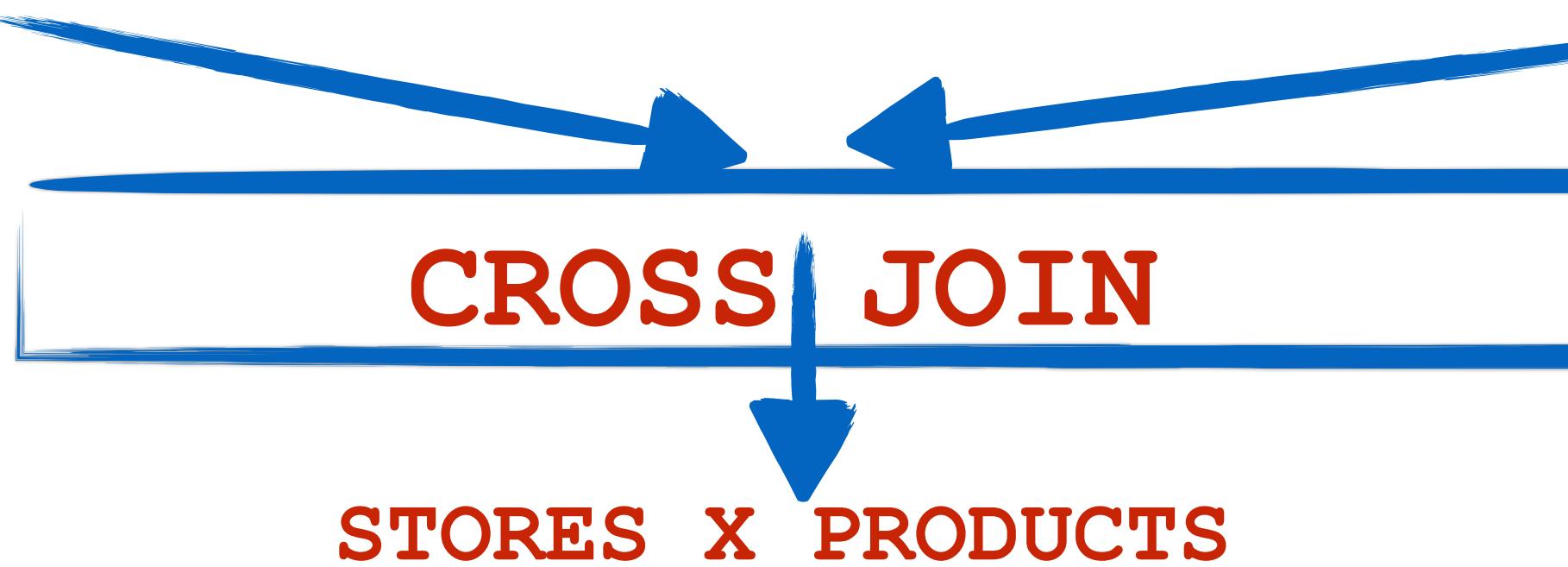
SELECT ONLY THESE  
COLUMNS FROM THE  
RESULT OF THE CROSS  
JOIN

StoreID	StoreLocation	City
1	Bellandur	Bangalore
2	Koramangala	Bangalore

## STORES

ProductID	ProductName
1	Bananas
2	Milk
3	Nutella
4	Peanut Butter

## PRODUCTS



StoreID	StoreLocation	City	ProductID	ProductName
1	Bellandur	Bangalore	1	Bananas
1	Bellandur	Bangalore	2	Milk
1	Bellandur	Bangalore	3	Nutella
1	Bellandur	Bangalore	4	Peanut Butter
2	Koramangala	Bangalore	1	Bananas
2	Koramangala	Bangalore	2	Milk
2	Koramangala	Bangalore	3	Nutella
2	Koramangala	Bangalore	4	Peanut Butter

# SELECT

STORELOCATION,  
PRODUCTNAME

## STORES

StoreID	StoreLoca	City
1	Bellandur	Bangalore
2	Koramang	Bangalore

## PRODUCTS

ProductID	ProductName
1	Bananas
2	Milk
3	Nutella
4	Peanut Butter

CROSS JOIN

STORES X PRODUCTS

StoreID	StoreLocation	City	ProductID	ProductName
1	Bellandur	Bangalore	1	Bananas
		Bangalore	2	Milk
		Bangalore	3	Nutella
		Bangalore	4	Peanut Butter
2	Koramangala	Bangalore	1	Bananas
		Bangalore	2	Milk
		Bangalore	3	Nutella
		Bangalore	4	Peanut Butter

StoreLocation	ProductName
Bellandur	Bananas
	Milk
	Nutella
	Peanut Butter
Koramangala	Bananas
	Milk
	Nutella

M COLUMNS, X ROWS

INPUT TABLE 1

N COLUMNS, Y ROWS

INPUT TABLE 2

LET'S SAY TABLE 1  
HAS 1000 ROWS

LET'S SAY TABLE 2  
HAS 1000 ROWS

CROSS JOIN

CROSS JOINS ARE VERY  
VERY RESOURCE-INTENSIVE

THE OUTPUT WILL HAVE  
1 MILLION ROWS!

OUTPUT TABLE

M+N COLUMNS, X\*Y ROWS

CROSS JOINS ARE VERY  
VERY RESOURCE-INTENSIVE

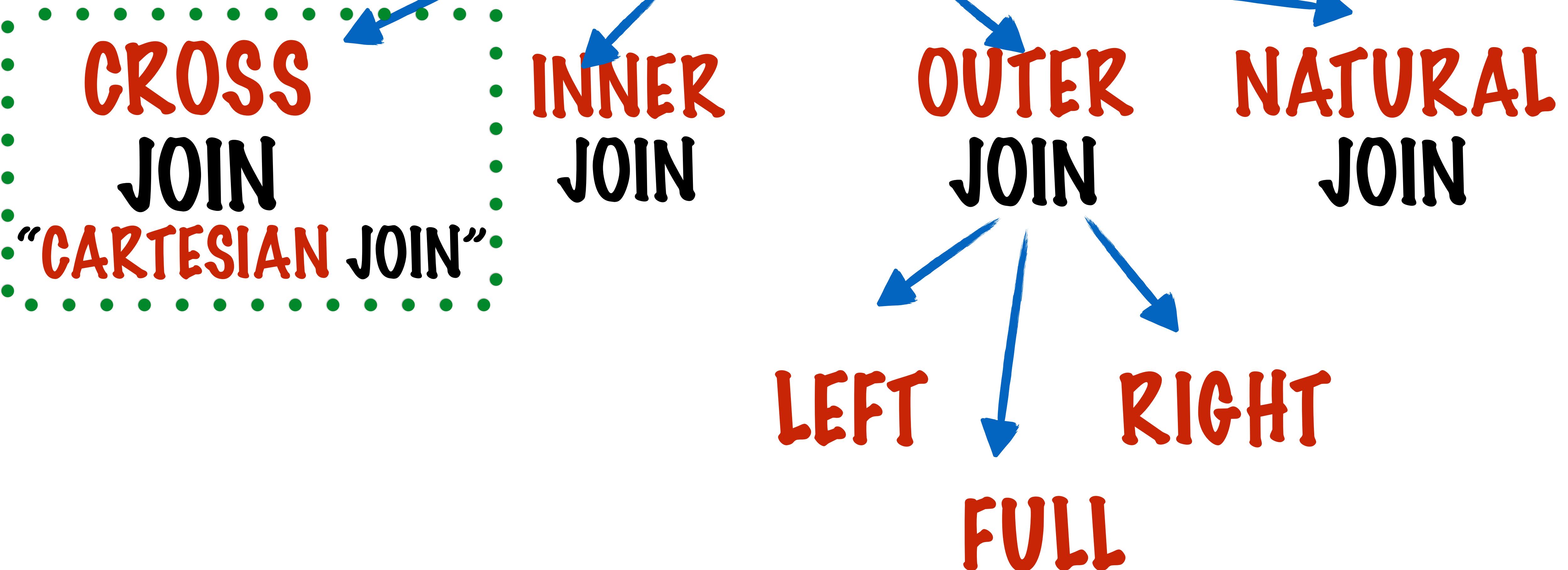
AT WORK, DON'T DO A CROSS JOIN  
UNLESS YOU ARE VERY SURE THE  
TABLES ARE SMALL

CROSS JOINS ARE VERY  
VERY RESOURCE-INTENSIVE

AT WORK, DON'T DO A CROSS JOIN UNLESS  
YOU ARE VERY SURE THE TABLES ARE SMALL

ELSE YOU WILL BRING DOWN THE  
SYSTEM AND PEOPLE WILL YELL :-)

# JOINS



# JOINS

