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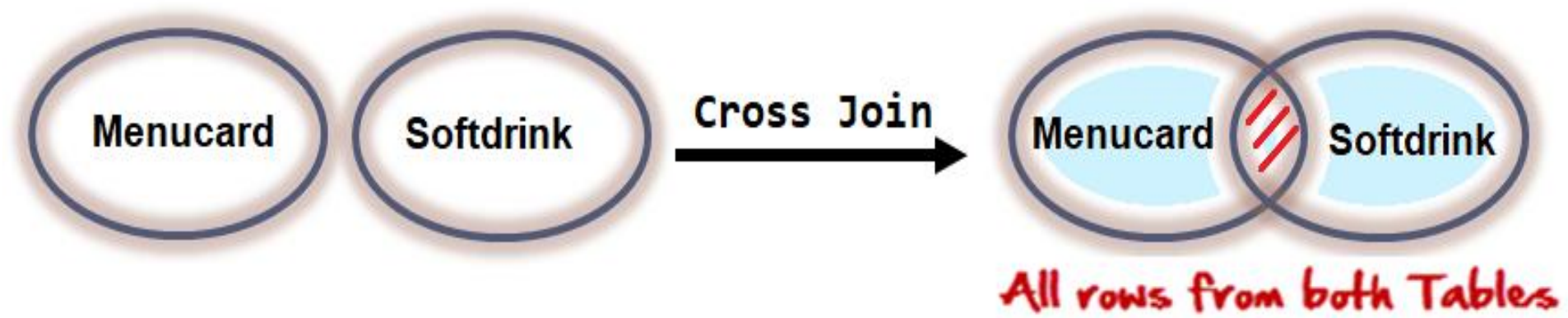
joins

JOINS are used to **retrieve data from multiple tables.**

JOIN is performed whenever **two or more tables** are joined in a SQL statement.

Type of JOINS

- Cartesian or Product Join – Cross Join
- Equijoin – Inner Join
- Natural Join
- Simple Join
- Outer Join – Right Outer Join, Left Outer Join
- Self Join



cartesian or product join

- **Cartesian/Product means** Number of Rows present in Table 1 Multiplied by Number of Rows present in Table 2.
- **Cross Join in MySQL** does not require any common column to **join** two table.

The result of $R(A_1, A_2, \dots, A_n) \times S(B_1, B_2, \dots, B_m)$ is a relation Q with degree $n + m$ attributes $Q(A_1, A_2, \dots, A_n, B_1, B_2, \dots, B_m)$, in that order.

$$\text{Degree } d(R \times S) = d(R) + d(S).$$
$$\text{Cardinality } |R \times S| = |R| * |S|$$

joins - cartesian or product

The CROSS JOIN gets a row from the first table (r_1) and then creates a new row for every row in the second table (r_2). It then does the same for the next row for in the first table (r_1) and so on.

