Alright — here’s the **quick “When to Use” guide** for IN, JOIN, and LEFT JOIN with a simple diagram.

## **1️⃣ IN**

* **Purpose:** Filter rows in one table based on values from another table.
* **Keeps only matching rows** (like a filter).
* **Best for:** “Find X where it exists in Y.”
* **Example:**

sqlCopy codeSELECT first\_name, last\_name  
FROM employees  
WHERE department\_id IN (SELECT department\_id FROM departments WHERE location = 'Bangalore');

📌 *Think: “Show me only the items in this list.”*

## **2️⃣ INNER JOIN**

* **Purpose:** Combine data from two tables **only where matches exist** in both.
* **Best for:** “Show me the combined info for matches.”
* **Example:**

sqlCopy codeSELECT e.first\_name, d.department\_name  
FROM employees e  
INNER JOIN departments d  
 ON e.department\_id = d.department\_id;

📌 *Think: “Keep only the overlapping part.”*

## **3️⃣ LEFT JOIN**

* **Purpose:** Keep **all rows from the left table**, plus matching data from the right table if it exists.
* **Best for:** “Show me everything from A, and match from B if possible.”
* **Example:**

sqlCopy codeSELECT s.student\_name, e.course\_name  
FROM students s  
LEFT JOIN enrollments e  
 ON s.student\_id = e.student\_id;

📌 *Think: “Keep everything from the left, even if right side is missing.”*

### **Visual Diagram**

sqlCopy code ┌───────────┐  
 │ Table A │  
 └───────────┘  
 ▲  
 │  
 ┌─────────────────────────────┐  
 │ Matches? │  
 └─────────────────────────────┘  
 ┌───────────┐ ┌───────────┐  
 │ Table B │ │ Table B │  
 └───────────┘ └───────────┘  
  
IN: ✅ Only matches  
JOIN: ✅ Only matches, but combines columns  
LEFT JOIN: ✅ All from A, plus matches from B (NULL if no match)

💡 **Rule of Thumb for Interview:**

* If you need **all** from one table: **LEFT JOIN**
* If you need **only matches**: **INNER JOIN**
* If you just want to **filter existence** without combining columns: **IN**

If you want, I can now make you a **Luxoft SQL cheat sheet** with all these rules + key syntax + common mistakes on one page, so you can glance at it before your test.