

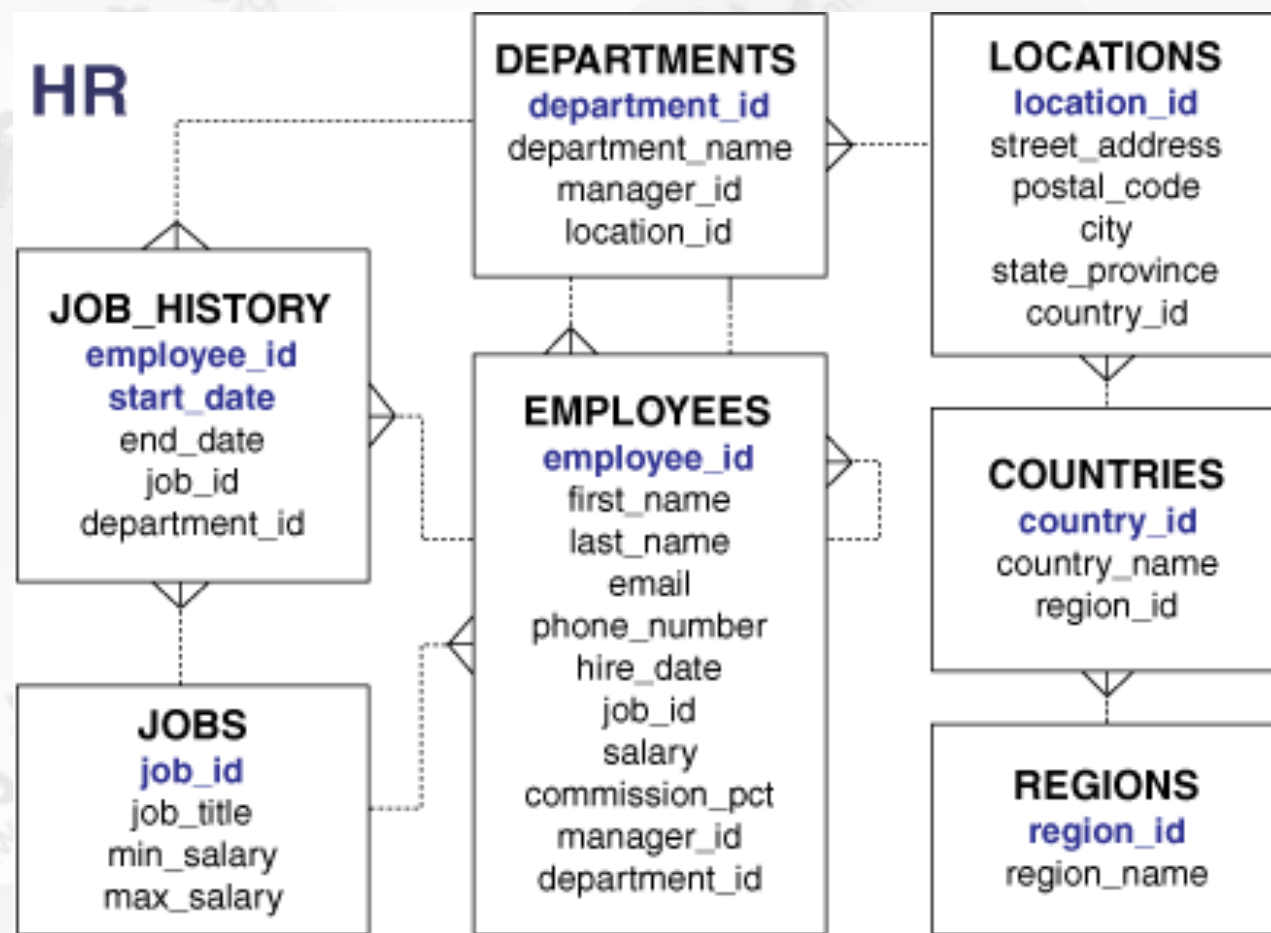
数据库基础

- 关系型数据库入门



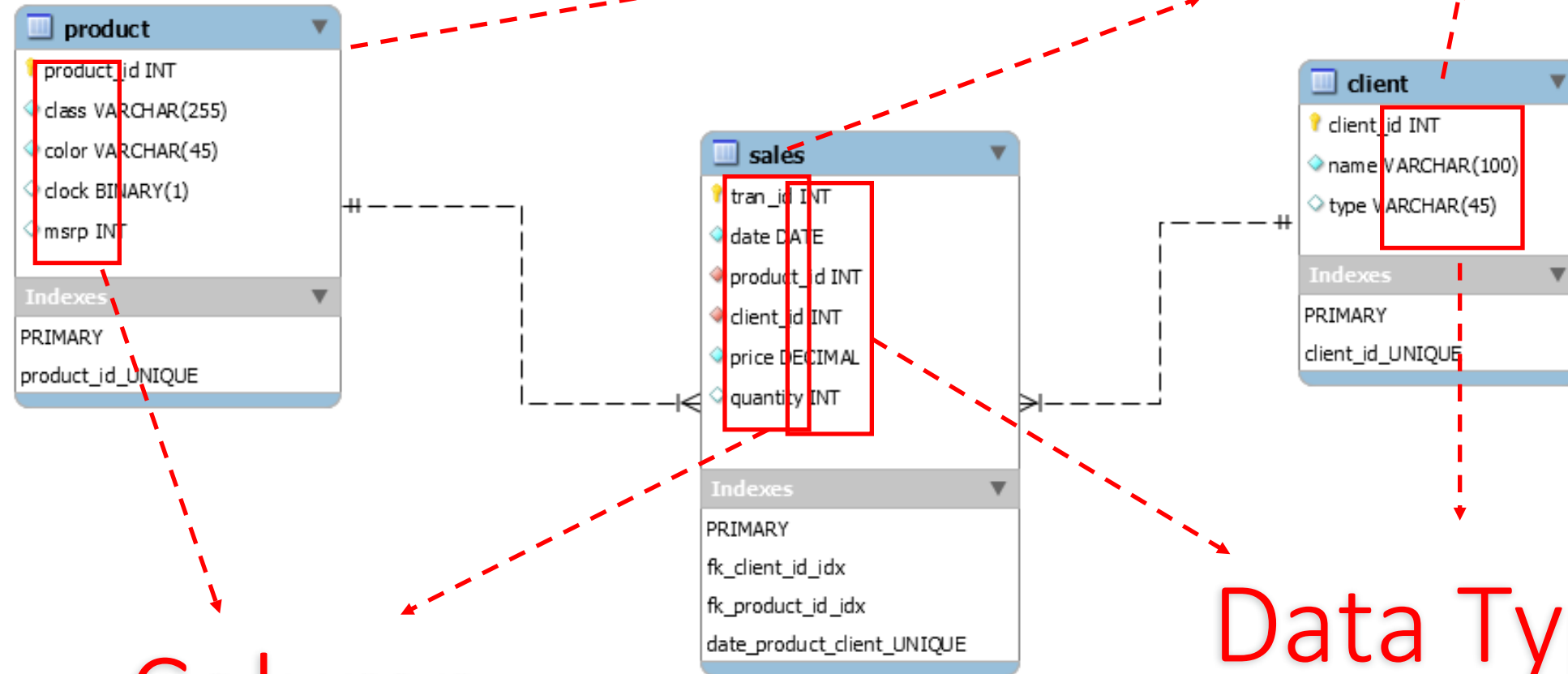


Relational DBMS





Database Model





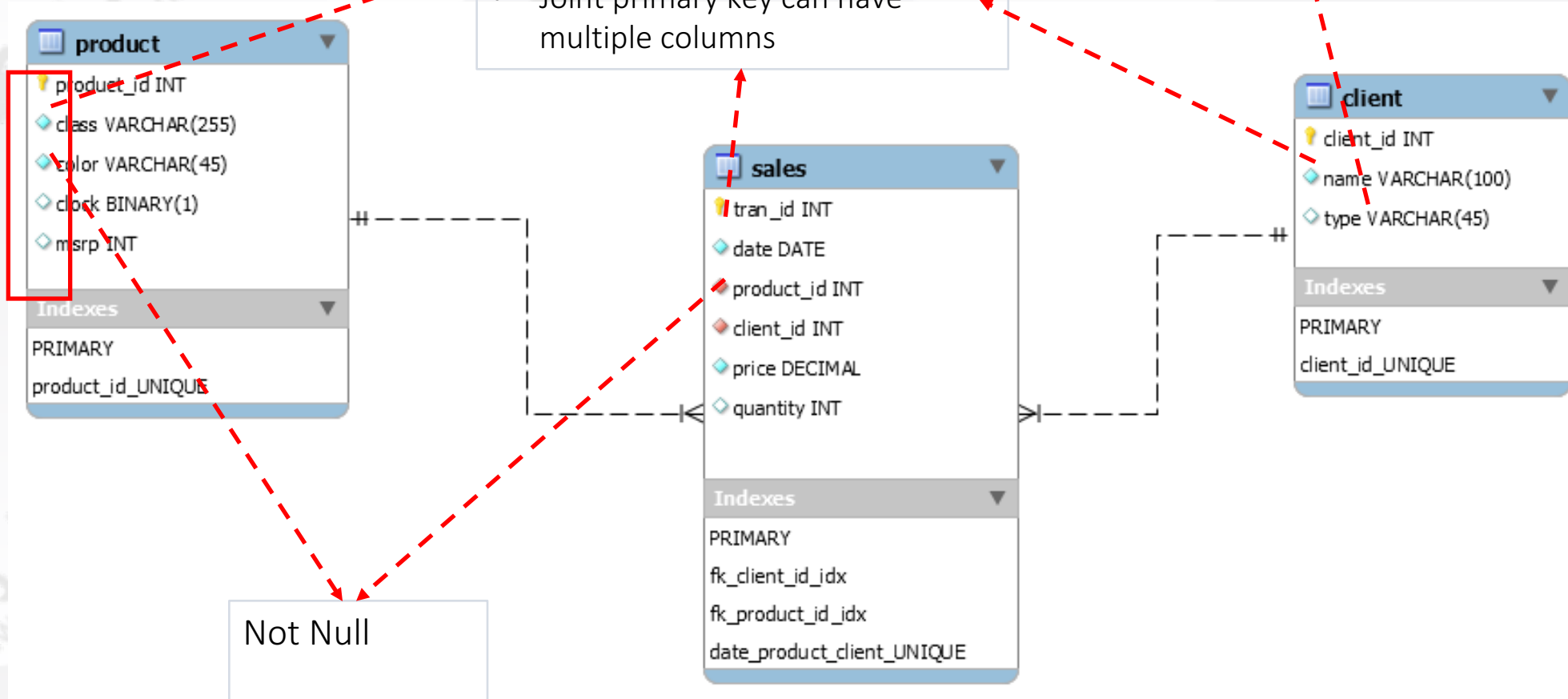
Constraints

Primary Key:

- Unique identifier to each record
- A relational database table must always have one and only one primary key
- Joint primary key can have multiple columns

Unique

Not Null





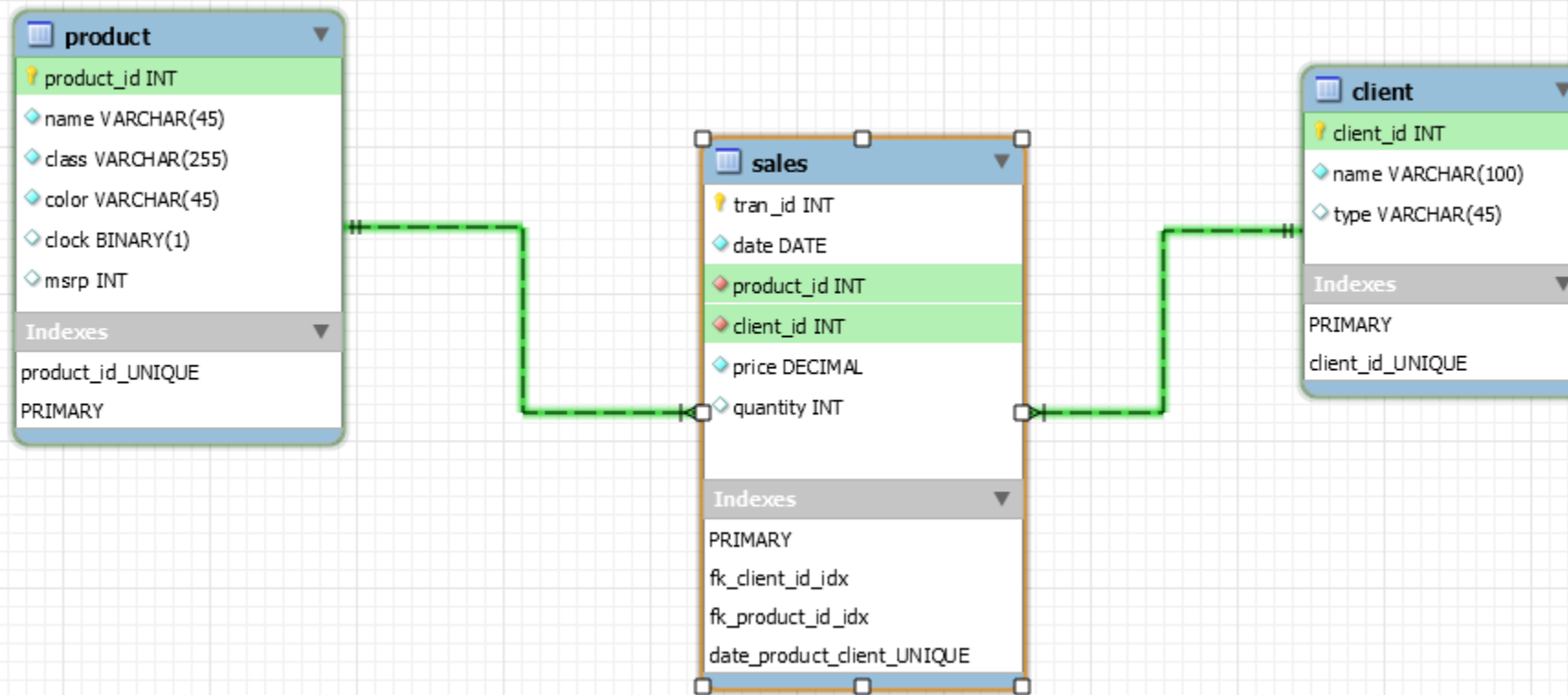
Constraints

- **Primary Key** constraint
 - Unique Identifier. Not Null.
- **NOT NULL** constraint
 - Ensures that column does not accept nulls
- **UNIQUE** constraint
 - Ensures that all values in column are unique
- **DEFAULT** constraint
 - Assigns value to attribute when a new row is added to table
- **CHECK** constraint
 - Validates data when attribute value is entered



Foreign Key

foreign key is a field (or collection of fields) in one table that uniquely identifies a row of another table. In simpler words, the **foreign key** is defined in a second table, but it refers to the primary **key** in the first table.





What Is a Join

- Link data from multiple tables to solve more complex problems
- You can ask your database system to perform a JOIN only on the columns you specify
- A JOIN defines a “logical table” that is the result of linking two tables or result sets



Join

Name	Product_id
Flex	2
Blaze	3
Surge	4

Product_id	Tran_id
2	3
2	4
3	5
3	6
4	7
4	8



Product_id	Tran_id	Name
2	3	Flex
2	4	Flex
3	5	Blaze
3	6	Blaze
4	7	Surge
4	8	Surge



Different Types of Join

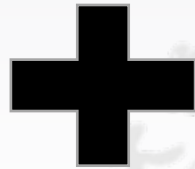
- Inner Join
- Left (Outer) Join
- Right (Outer) Join
- Full (Outer) Join





Inner Join

- An INNER JOIN returns only those rows where the linking values match in both of the tables or in result sets







Left (Outer) Join

- All rows from left table included. Non-matched entries from right table will be NULL





	NULL
	NULL
	NULL



Right (Outer) Join

- All rows from right table included. Non-matched entries from left table will be NULL





NULL	
NULL	
NULL	
NULL	
NULL	



Full (Outer) Join

- All rows from left and right table included. Non-matched entries from left and right table will be NULL



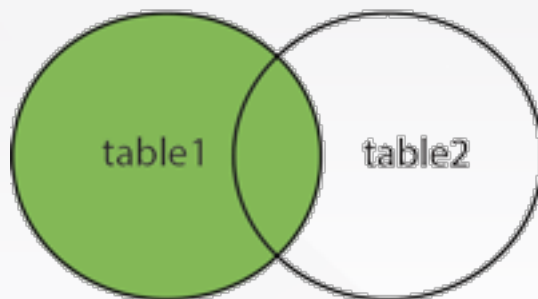


	NULL
	NULL
	NULL
NULL	
NULL	
NULL	
NULL	
NULL	

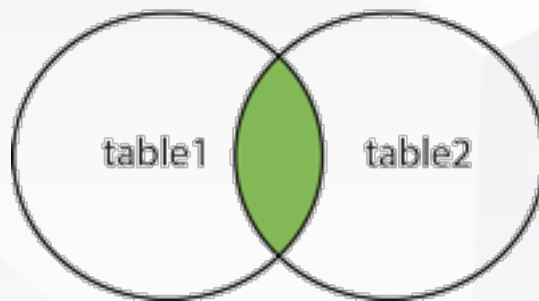


Recap of Join

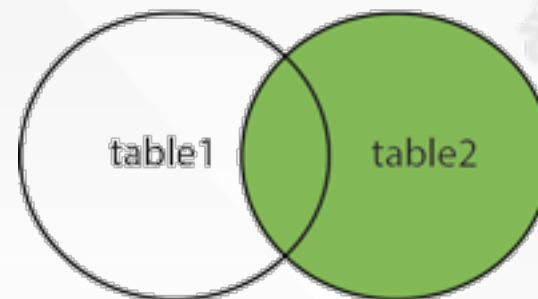
LEFT JOIN



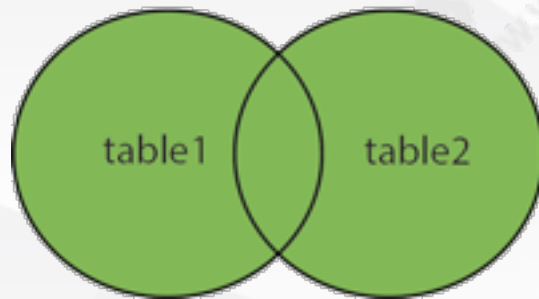
INNER JOIN



RIGHT JOIN



FULL OUTER JOIN





Coding

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