Intermediate SQL

FOR DATA ANALYSIS

Agenda

Installing SQLiteStudio

Subqueries, Derived Tables, CTE's, and Unions

Regular Expressions

Advanced Joins

Window Functions

Setting Up SQLite

SQLiteStudio or SqliteOnline.com can be accessed here:

https://sqlitestudio.pl/

https://sqliteonline.com

You can access either of these platforms.

If you cannot install or download any software, you can use SQLiteOnline.com which is an online-only SQLite editor.

Getting Resource Files

The few resources needed for this class are available on GitHub:

https://github.com/thomasnield/oreilly_intermediate_sql_for_data

Unzip the contents to a location of your choice, and note where you put them

Contents include:
◦ A SQLite database file called **thunderbird_manufacturing.db**
◦ Class notes with all examples (in three formats)
◦ Slides

Section II Exercise

Bring in all fields from CUSTOMER_ORDER, but for each record show the total quantity ordered for that given CUSTOMER_ID and PRODUCT_ID.

Section III Exercise

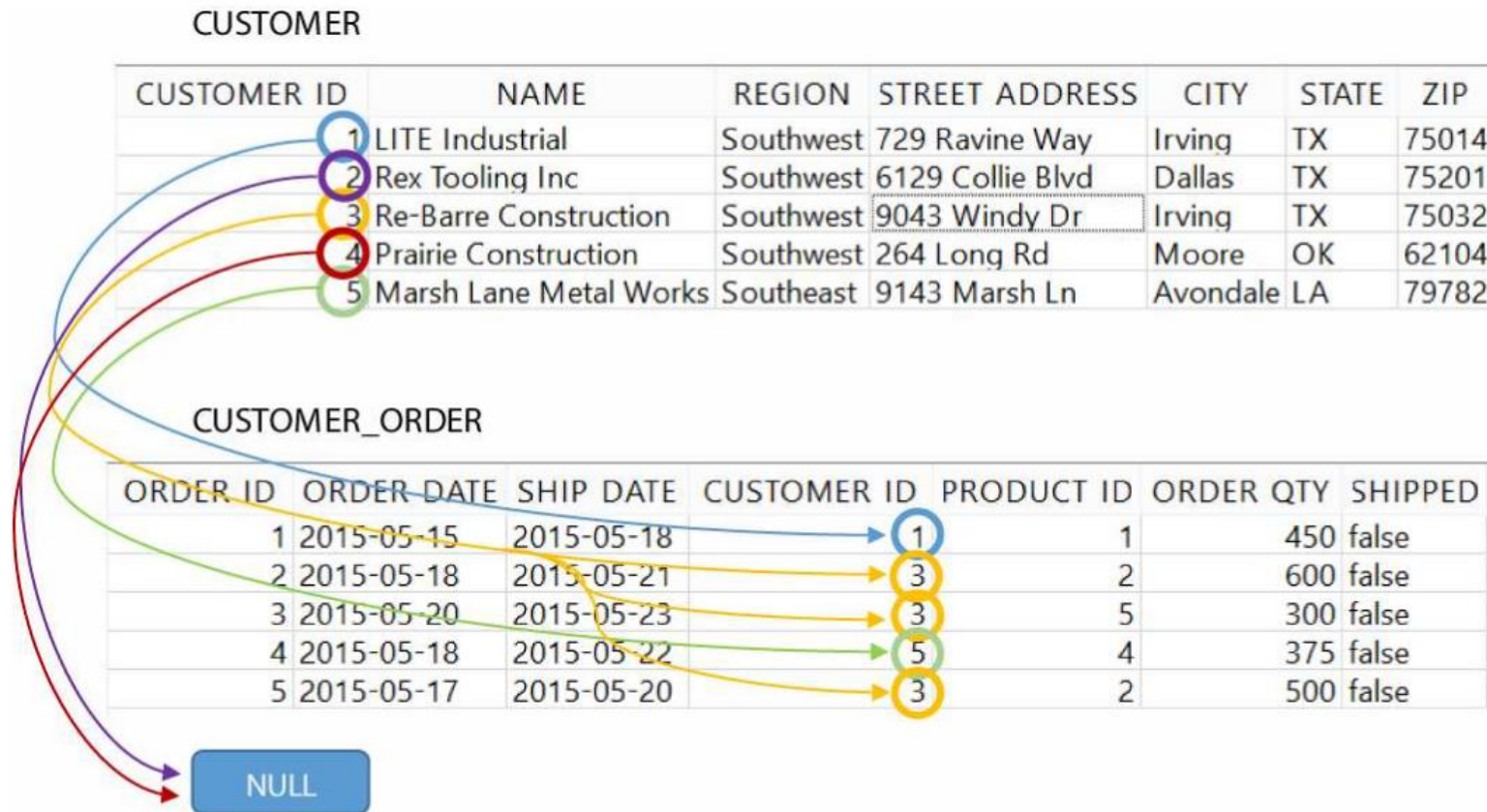Find all customers with an address containing a 3-4 digit street number

INNER JOIN

CUSTOMER

CUSTOMER ID	NAME	REGION	STREET ADDRESS	CITY	STATE	ZIP
1	LITE Industrial	Southwest	729 Ravine Way	Irving	TX	75014
2	Rex Tooling Inc	Southwest	6129 Collie Blvd	Dallas	TX	75201
3	Re-Barre Construction	Southwest	9043 Windy Dr	Irving	TX	75032
4	Prairie Construction	Southwest	264 Long Rd	Moore	OK	62104
5	Marsh Lane Metal Works	Southeast	9143 Marsh Ln	Avondale	LA	79782

CUSTOMER_ORDER

ORDER ID	ORDER DATE	SHIP DATE	CUSTOMER ID	PRODUCT ID	ORDER QTY	SHIPPED
1	2015-05-15	2015-05-18	1	1	450	false
2	2015-05-18	2015-05-21	3	2	600	false
3	2015-05-20	2015-05-23	3	5	300	false
4	2015-05-18	2015-05-22	5	4	375	false
5	2015-05-17	2015-05-20	3	2	500	false

LEFT OUTER JOIN

CUSTOMER

CUSTOMER ID	NAME	REGION	STREET ADDRESS	CITY	STATE	ZIP
1	LITE Industrial	Southwest	729 Ravine Way	Irving	TX	75014
2	Rex Tooling Inc	Southwest	6129 Collie Blvd	Dallas	TX	75201
3	Re-Barre Construction	Southwest	9043 Windy Dr	Irving	TX	75032
4	Prairie Construction	Southwest	264 Long Rd	Moore	OK	62104
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CUSTOMER_ORDER

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5	2015-05-17	2015-05-20	3	2	500	false

NULL

Section VI Exercise

For every CALENDAR_DATE and CUSTOMER_ID, show the total QUANTITY ordered for the date range of 2017-01-01 to 2017-03-31:

Section V Exercise

For the month of March, bring in the rolling sum of QUANTITY ordered (to each ORDER_DATE) by CUSTOMER_ID and PRODUCT_ID.

Windowing Functions Support

Windowing functions are found on many database platforms, including:

- Oracle
- Teradata
- PostgreSQL
- SQL Server
- Apache Spark SQL
- MySQL (as of version 8)
- SQLite (as of version 3.25.0)

These platforms notably do not have windowing functions:

- MySQL (previous to version 8)
- SQLite (previous version 3.25.0)
- MariaDB