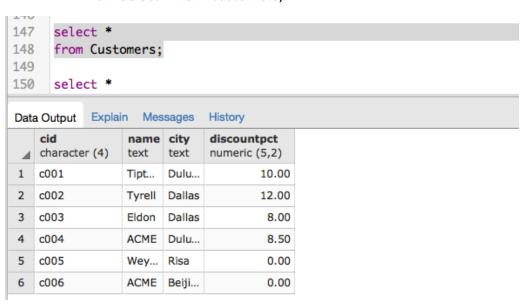
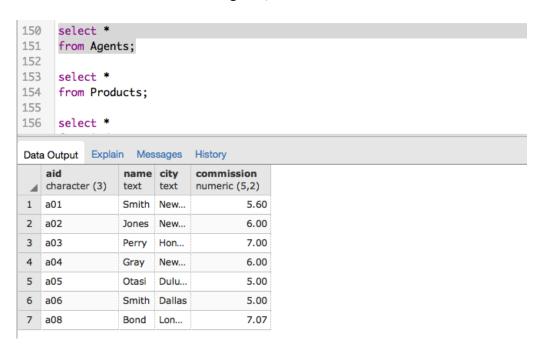
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Database Systems CMPT 308
Professor Alan G. Labouseur
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Lab 2 Short Essays and Screenshots

1. Execute Basic queries:

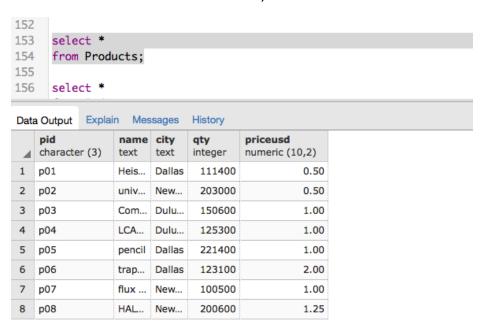
a. Select * from Customers;



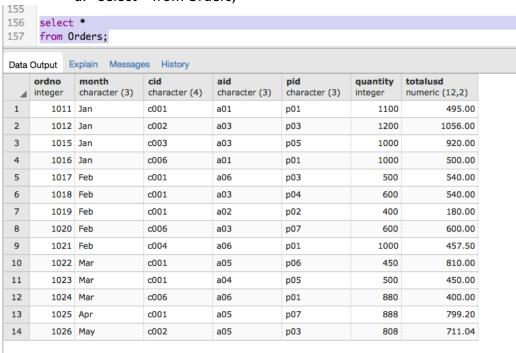
b. Select * from Agents;



c. Select * from Products;



d. Select * from Orders;



- 2. A superkey is considered any combination of columns that can uniquely differentiate between rows of table. A candidate key is a "minimal superkey," meaning that it is a superkey with the smallest number of columns to have unique values for every row. Finally, the primary key is a value found in one column that can uniquely identify the row (record).
- 3. SQL rely on table schemas to dictate the data type needed for each column and their records. When creating the table schemas, the maximum length of each record for the column is defined when defining the column's datatype. SQL systems such as PostgreSQL support the data types CHAR, VARCHAR, BIT, BIT VARYING, BOOLEAN, INT, FLOAT, DECIMAL, DATE and TIME. The CHAR(n) and VARCHAR(n) data types are character strings with a defined length (n). BIT(n) and BIT VARYING(n) are the same as CHAR and VARCHAR except that instead of holding character strings, they hold strings of bits. BOOLEAN values are the same as other languages TRUE, FALSE, or UNKNOWN. INT's are integers and FLOAT's are floating point numbers (same as other languages). DECIMAL (n, d) denotes a number of places for a whole number (n) and a number of places for its fractional decimal (d). Finally, DATE and TIME are a special form of character strings that hold dates and times. Below is a possible table with its columns and their datatypes defined.

Concerts

cid	CHAR(4), not NULL
city	TEXT, nullable
artist	TEXT, not NULL
venue	TEXT, nullable
costUSD	Numeric (4,2), nullable

- 4. Explain the relational rules:
 - a. The "first normal form rule" explains that data must be indivisible or atomic. In other words, data in columns should be in its most basic form. For instance, a name such as 'Johnathan Clementi' can be broken down into firstName: 'Johnathan' and lastName: 'Clementi'. This rule is important for the robustness and simplicity of databases because if it was not implemented, databases would be much more unwieldy to deal with.
 - b. The "access row by content only" rule (also known as the "What, not where" rule explains that data must be queried based on data values itself and not the location of said data. This is important because data locations can change easily by adding or deleting from the table.
 - c. Finally, the "all rows must be unique" rule explains that there should not be any duplicate data because it is just dumb... seriously, duplicate data doesn't make sense it's just taking up space in memory that could be used for other things. It could also alter calculations in which the number of occurrences of something is

important (such as the work I did over the summer. If I had duplicate data of fish from the same lake, then my calculations of the overall sex ratio would be biased and invalid).