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CMPT 308 – Database Management
February 2nd, 2016

Lab 2: CAP3 Database

1.

The CAP3 Database

Customers

cid	name	city	discount
c001	Tiptop	Duluth	10.00
c002	Tyrell	Dallas	12.00
c003	Allied	Dallas	8.50
c004	ACME	Duluth	8.00
c005	Weyland	Acheron	0.00
c006	ACME	Kyoto	0.00

Agents

aid	name	city	commission
a01	Smith	New York	6.00
a02	Jones	Newark	6.00
a03	Perry	Tokyo	7.00
a04	Gray	New York	6.00
a05	Otasi	Duluth	5.00
a06	Smith	Dallas	5.00
a08	Bond	London	7.07

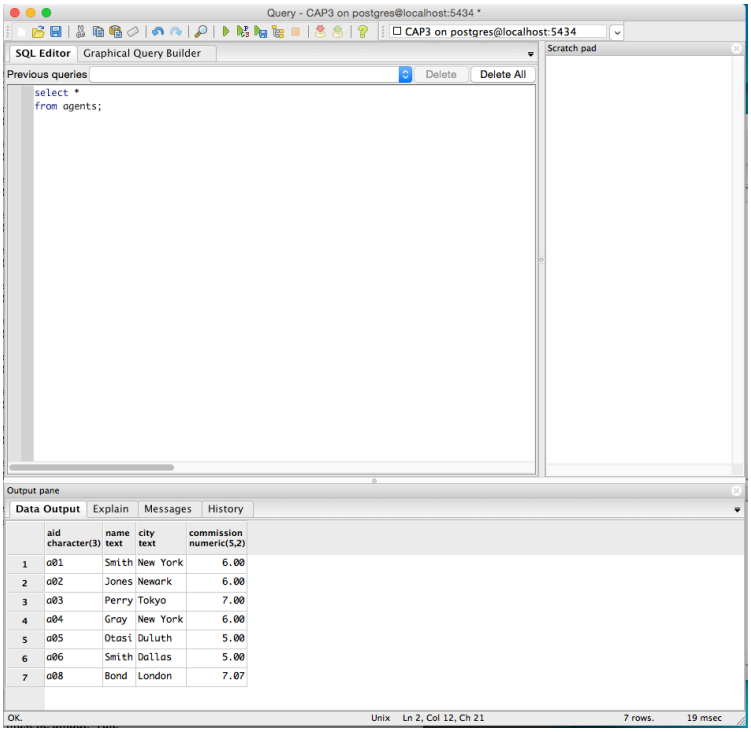
Orders

ordnum	mon	cid	aid	pid	qty	totalUSD
1011	jan	c001	a01	p01	1000	450.00
1013	jan	c002	a03	p03	1000	880.00
1015	jan	c003	a03	p05	1200	1104.00
1016	jan	c006	a01	p01	1000	500.00
1017	feb	c001	a06	p03	600	540.00
1018	feb	c001	a03	p04	600	540.00
1019	feb	c001	a02	p02	400	180.00
1020	feb	c006	a03	p07	600	600.00
1021	feb	c004	a06	p01	1000	460.00
1022	mar	c001	a05	p06	400	720.00
1023	mar	c001	a04	p05	500	450.00
1024	mar	c006	a06	p01	800	400.00
1025	apr	c001	a05	p07	800	720.00
1026	may	c002	a05	p03	800	740.00

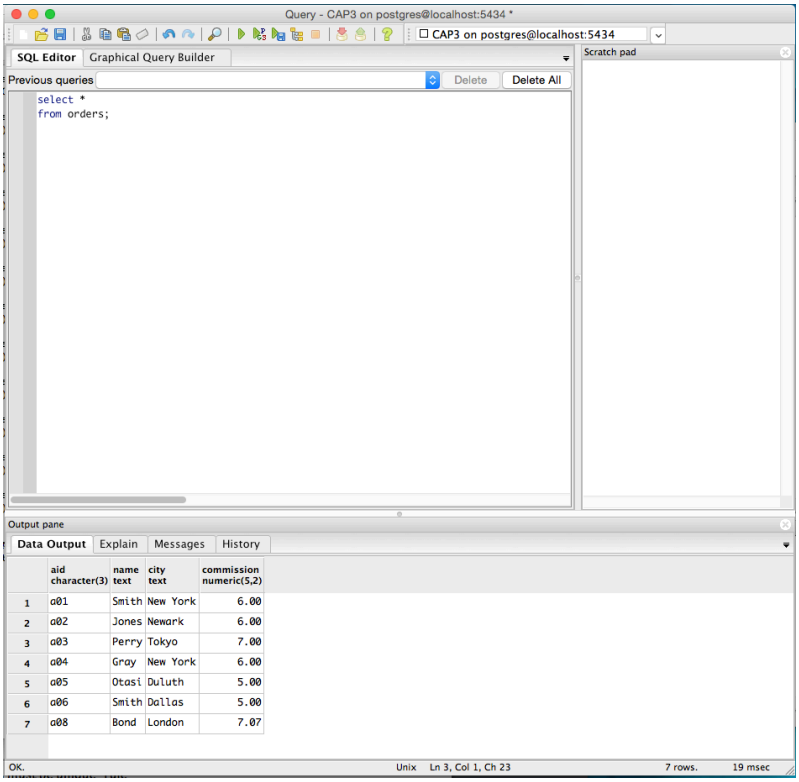
Products

pid	name	city	quantity	priceUSD
p01	comb	Dallas	111,400	0.50
p02	brush	Newark	203,000	0.50
p03	razor	Duluth	150,600	1.00
p04	pen	Duluth	125,300	1.00
p05	pencil	Dallas	221,400	1.00
p06	folder	Dallas	123,100	2.00
p07	case	Newark	100,500	1.00
p08	clip	Newark	200,600	1.25

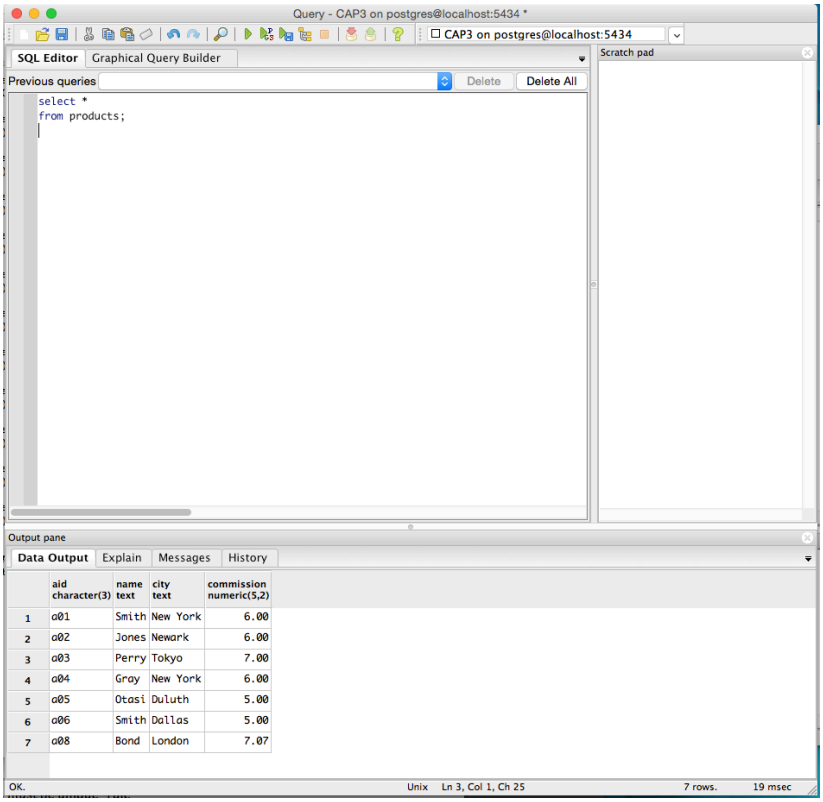
Query:
select * from agents;



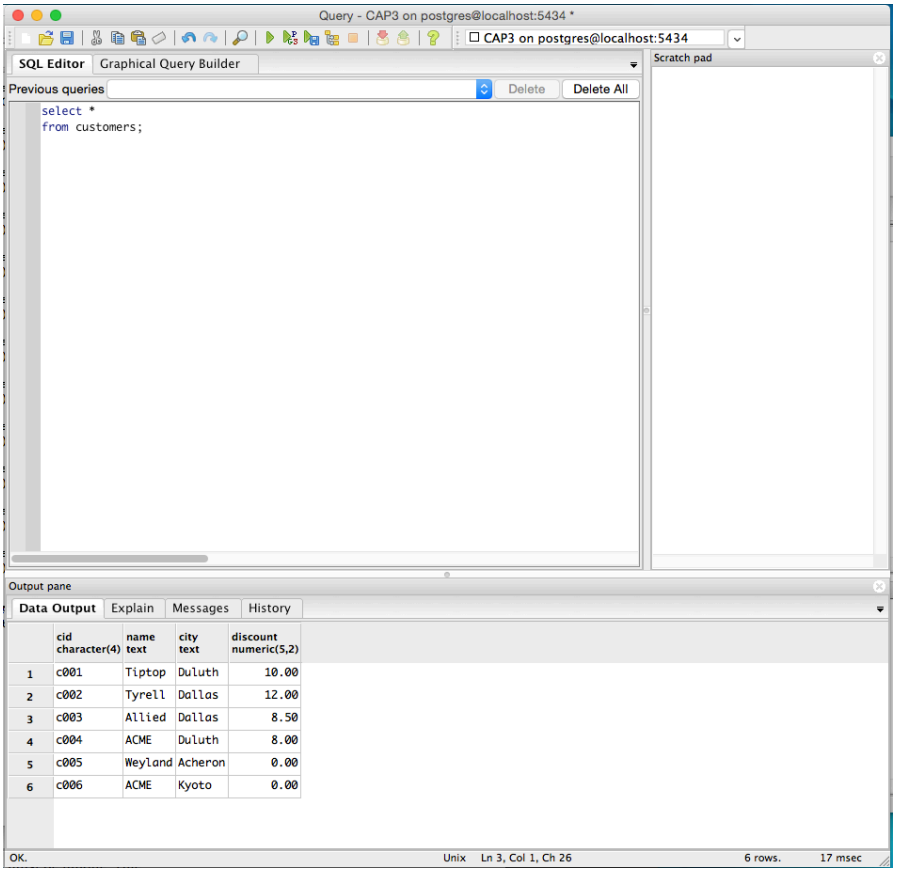
Query: select * from orders;



Query: select * from products;



Query: select * from customers;



1. After performing the queries, I returned the tables as expected when comparing the snapshots of the queries and the CAP3 Database. The queries produce an identical table to the example provided in the CAP3 Database.

2. A primary key is the key in a relational database that acts as a unique identifier. In a relational database there can only be one primary key and it cannot contain null values. A candidate key is a column or set of columns that identify any database records without referencing any other data. There can be more than one candidate key in a table as long as the primary key is not duplicated. A superkey is any number of columns that forces every row to be unique.

3. An instance of creating a table could be for designing a system that manages student accounts for an intramural soccer league at Marist on the IM Leagues website. The table would look like the image below:

Students

Athlete-id (aid)	Name	School-id (sid)	Team	Team Record
integer	string	integer	string	string
1	Sam Sea	101	The Avacados	15-3
Non-nullible	Non-Nullible	Non-nullible	Nullible	Nullible

*The team name could also be recognized as a free agent, allowing that player to be "picked up" by other users if they need more players.

4.
The "first normal form rule" is to: define the data items required, because they become the columns in a table. Place related data items in a table. This is important in ensuring there are no repeating data groups. This also ensures there is a primary key.

The "access rows by content only" rule is: we can only retrieve rows based on its content or the attribute value for each row. This ensures that you cannot query to retrieve a certain row, as the order of the rows is irrelevant. The row needs to refer to the value of the row or the value of the column header.

The "All rows must be unique" rule: this confirms data integrity by ensuring the same value in one row cannot be the same in a row next to it in a different column. That would create inconsistency in the data which is why this is an important rule.