Grace McCue

Professor Labouseur

Database Management

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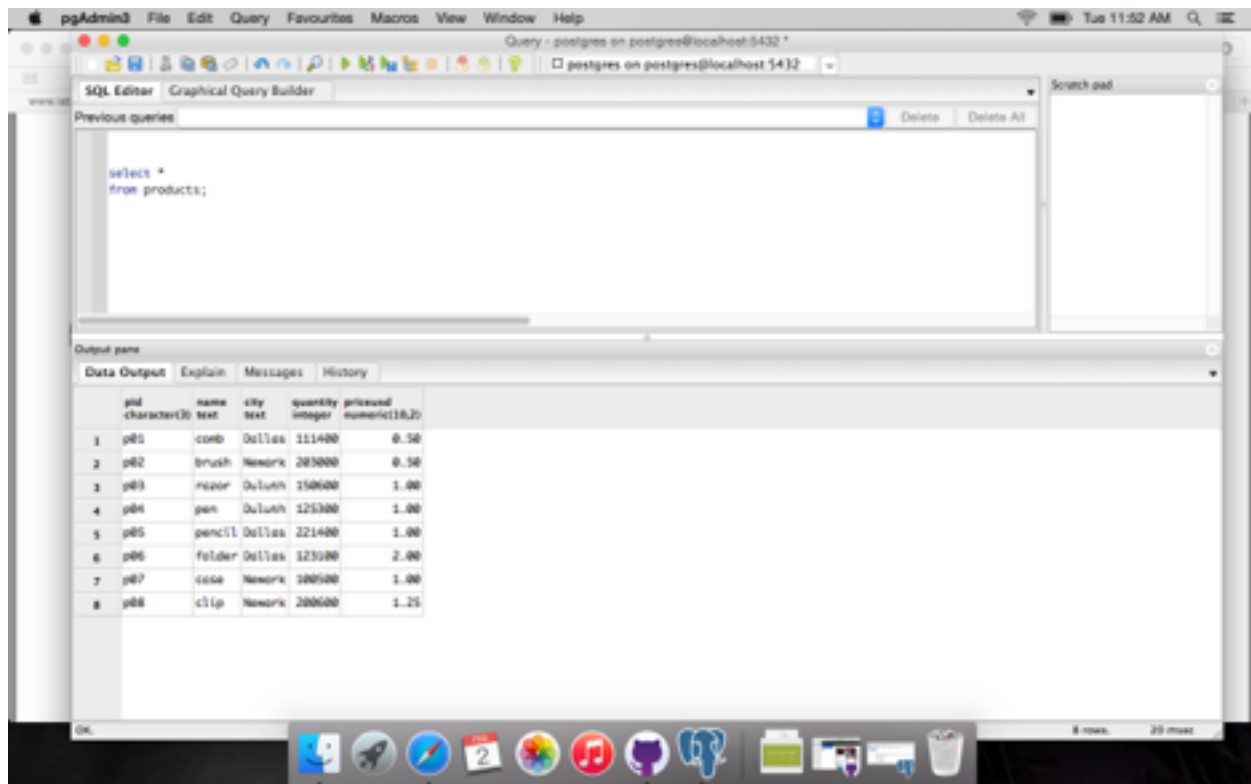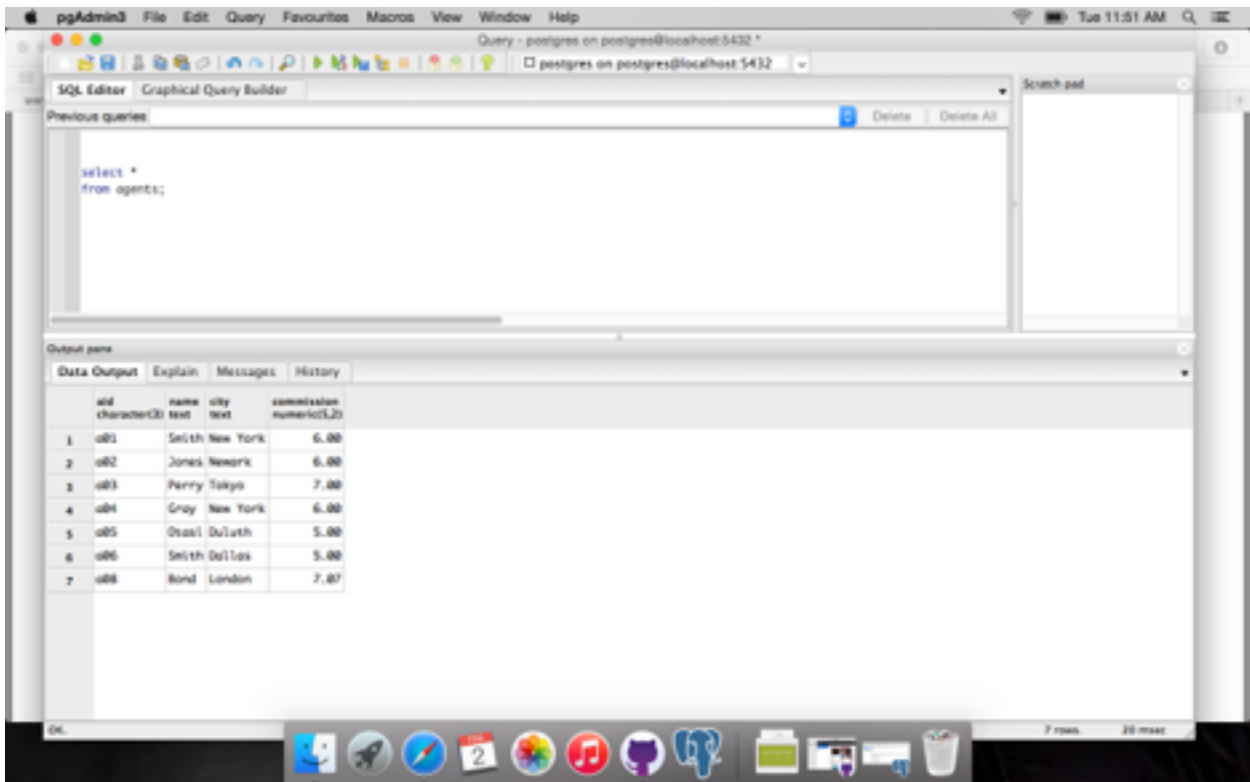## Lab 2

CAP3 database Screen shots:

```
select *
from agents;
```

Output pane

Data Output Explain Messages History

	aid character(3)	name text	city text	commission numeric(5,2)
1	a01	Smith	New York	6.00
2	a02	Jones	Newark	6.00
3	a03	Perry	Tokyo	7.00
4	a04	Gray	New York	6.00
5	a05	Otasi	Duluth	5.00
6	a06	Smith	Dallas	5.00
7	a08	Bond	London	7.07

OK.   7 rows.   29 msec

```
select *
from products;
```

Output pane

Data Output Explain Messages History

	pid character(3)	name text	city text	quantity integer	priceusd numeric(10,2)
1	p01	comb	Dallas	111400	0.50
2	p02	brush	Newark	203000	0.50
3	p03	razor	Duluth	150600	1.00
4	p04	pen	Duluth	125300	1.00
5	p05	pencil	Dallas	221400	1.00
6	p06	folder	Dallas	123100	2.00
7	p07	case	Newark	100500	1.00
8	p08	clip	Newark	200000	1.25

OK.   8 rows.   29 msec

A primary key is the candidate key that one chooses to make the primary key if there is more then one candidate key. A candidate key is a minimal super key with the fewest number of columns and that are still uniquely identifiable in every row. A super-key is any column or set of columns that uniquely identifies every row in the table.

Data types are different types of data such as text, byte, integers (handlers of integers depending on how big the integer such as long and double), hyperlinks, date and time, and so on. Data types are any type of data, and most of this data could potentially turn into information that is usable and meaningful in the real world. One example of a table with data types would be a table that is titled Patronuses. The fields or columns within the table would include person's

name, person's Patronus, and the amount of time a person can produce the Patronus. The person's name is a text data type, it is a primary key, and it is not nullable because there is always a value for a primary key and for this piece of data. The person's Patronus is also a text data type, it is a foreign key, and it is potentially nullable if a person is a muggle and can not make a patronus. The amount of time a person can produce the patronus is an integer data type, it is a foreign key, and it is potentially nullable if a person is a muggle and can not make a patronus and therefor can not have an amount of time that they can produce the patronus.

The three relational rules are laid down by Codd and are stated as follows. The first relational rule is "the first normal form" rule. It states that the intersect of all rows and columns are atomic and must have structure. For example, names must be under the name column, locations under the location column, and so on. The second relational rule, the "access rows by content only" rule, states that one can only ask by what when it comes to data, not where. This means that for example a person can access a row of data by what the data is, not stating where the data is. The data of greg can be access by his name, not the fact that his data is in column three. The third relational rule is the "all rows must be unique" rule. This rule states that duplicate rows are not allowed and data may occur only once. For example one person is not allowed to have two rows, that person can only have one row and all the data for that person must be placed there.