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Lab 2
02/5/15

1) **Primary Key:** a key in the relational database that is unique for each record. It is a unique identifier such as a CWID number, or a User ID.
   Candidate Key: a column, or sets of columns, that can uniquely identify any database record without referring to any other data.
   Superkey: a combination of columns that uniquely identifies any row

2) Data types consist of different types of data that can be supported by SQL systems. You might what to create a table for popular coffees. It could go something like:

        CREATE TABLE Popular Coffees (
                Company   CHAR(60),
                Drink Name   CHAR(40),
                Price   INT,
                Served Hot or Cold   CHAR(40),
        );

   None of these would be nullable because you need to say who made it, what is it called, how much is it, and if it is a cold or hot drink.

3) The following are relational rules:

   a. "First normal form" – this means that you must define the data items by organizing data into columns, defining what type of data each column contains, and finally putting related columns into their own table. Ensure that there are no repeating groups of data and that there is a primary key.

   b. "Access rows by content only" - this means "what not where" and is important so you can modify, add, and even lookup data by searching a data field, not by a row number or column number

   c. "All rows must be unique" – this means that each record should be unique so that the record gives meaning to its data to provide information. Also, if two records where the same you're creating redundant data.

Screenshots from executing queries:

Query – CAP2 on postgres@localhost:543

Execute query

SQL Editor | Graphical Query Builder

Previous queries [ ] Delete

```
select *
from agents;
```

Output pane

Data Output | Explain | Messages | History

	aid character(3)	name text	city text	percent real
1	a01	Smith	New York	6
2	a02	Jones	Newark	6
3	a03	Brown	Tokyo	7
4	a04	Gray	New York	6
5	a05	Otasi	Duluth	5
6	a06	Smith	Dallas	5
7	a08	Bond	London	7

OK.   Unix   Ln 2, Col 13, Ch 22

Query – CAP2 on postgres@localhost:5432 *

☐ CAP2 on postgres@loc

Scratch pad

SQL Editor | Graphical Query Builder

Previous queries [ ] Delete   Delete All

```
select *
from customers;
```

Output pane

Data Output | Explain | Messages | History

	cid character(4)	name text	city text	discount numeric(5,2)
1	c001	Tiptop	Duluth	10.00
2	c002	Basics	Dallas	12.00
3	c003	Allied	Dallas	8.00
4	c004	ACME	Duluth	8.00
5	c005	Weyland-Yutani	Acheron	0.00
6	c006	ACME	Kyoto	0.00

OK.   Unix   Ln 2, Col 15, Ch 24   6 rows.   20 ms

Query – CAP2 on postgres@localhost:5432 *

☐ CAP

SQL Editor | Graphical Query Builder

Previous queries [ ] Delete   Delete All

```
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	200600	1.25

OK.   Unix   Ln 3, Col 1, Ch 25   8 rows

Query – CAP2 on postgres@localhost:5432 *

☐ CAP2 on postgres@loc

Scratch pad

SQL Editor | Graphical Query Builder

Previous queries [ ] Delete   Delete All

```
select *
from orders;
```

Output pane

Data Output | Explain | Messages | History

	ordno integer	mon character(3)	cid character(4)	aid character(3)	pid character(3)	qty integer	dollars numeric(12,2)
1	1011	jan	c001	a01	p01	1000	450.00
2	1013	jan	c002	a03	p03	1000	880.00
3	1015	jan	c003	a03	p05	1200	1104.00
4	1016	jan	c006	a01	p01	1000	500.00
5	1017	feb	c001	a06	p03	600	540.00
6	1018	feb	c001	a03	p04	600	540.00
7	1019	feb	c001	a02	p02	400	180.00
8	1020	feb	c006	a03	p07	600	600.00
9	1021	feb	c004	a06	p01	1000	460.00
10	1022	mar	c001	a05	p06	400	720.00
11	1023	mar	c001	a04	p05	500	450.00
12	1024	mar	c006	a06	p01	800	400.00
13	1025	apr	c001	a05	p07	800	720.00
14	1026	may	c002	a05	p03	800	740.00

OK.   Unix   Ln 2, Col 11, Ch 20   14 rows.   21 ms