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February 4, 2016
CMPT 308 - Rivas

Lab 2: CAP database

1.

```
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

```
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

```
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

```
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

2. In relational databases, the primary key is the key which is a unique identifier. Every row must have its own primary key. The candidate key is the minimum set of columns that make rows unique. A super key is like a candidate key but it is non-minimal, meaning that multiple rows can share a super key.

3. In SQL, there are many different data types to identify pieces of information. Examples would include text, integer, date/time, currency, and other types of data you would store in a database. As an example, we can imagine a database that contains purchases made at a shop at a local store. Each field would contain a primary key to uniquely identify it, and this field would most likely be an integer, called purchase number or something similar. Each field would also have a date/time column for when the purchase was made, and most likely a currency column for the amount of money that the purchase was.

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4. The “first normal form rule” states that the database has to fulfill atomicity. This means that the transaction must fully happen or not happen at all. This rule is important because it minimizes data redundancy and ensures there is no space wasted on duplicate items in the database. The “access rows by content only” rule means we have to ask what, not where. An item in a database should never be accessed by its location, but by its content. This is important because if items are removed or added, it is possible for a given item’s location to change, leading to a variety of problems. The third rule, “all rows must be unique,” is extremely important. For example, if trying to retrieve a customer’s name, two customers may have the same name. That is why they must have a unique identifier, in order to ensure that the row is unique and avoid any problems.