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Labouseur Lab Two

1. Screenshots of query results

   Customers

Data Output | Explain | Messages | History

	cid character(4)	name text	city text	discount numeric(5,2)
1	c001	Tiptop	Duluth	10.00
2	c002	Tyrell	Dallas	12.00
3	c003	Allied	Dallas	8.00
4	c004	ACME	Duluth	8.50
5	c005	Weyland	Acheron	0.00
6	c006	ACME	Kyoto	0.00

   Agents

Data Output | Explain | Messages | History

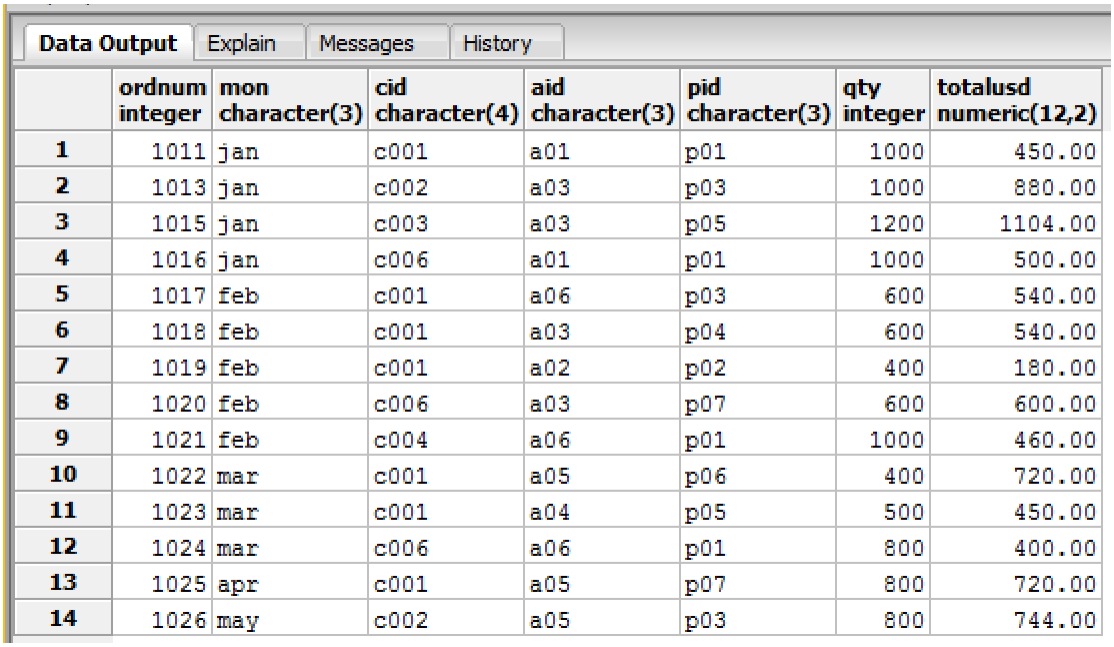
	aid character(3)	name text	city text	commission numeric(5,2)
1	a01	Smith	New York	6.50
2	a02	Jones	Newark	6.00
3	a03	Perry	Tokyo	7.00
4	a04	Grey	New York	6.00
5	a05	Otasi	Duluth	5.00
6	a06	Smith	Dallas	5.00
7	a08	Bond	London	7.07

   Products

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	eraser	Newark	200600	1.25

Orders



Data Output | Explain | Messages | History

	ordnum integer	mon character(3)	cid character(4)	aid character(3)	pid character(3)	qty integer	totalusd 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	744.00

2. When a table has multiple attributes that function as keys, it is sometimes appropriate to designate one or a few as the *primary key*, uniquely identifying a row or rows in a relation. A set of attributes that contains a key is called a *super key*, or superset of a key. Not necessarily all of the elements within a super key are unique, but the collection itself is. Lastly, a candidate key is an attribute that meets all the requirements of a primary key. As an example, a primary key might be Marist student K-accounts. Each one is different, uniquely identifying one particular student. A superset of a key that might exist within Marist's database is a set containing a K-account, CWID, first name and last name. Not every element within the set is unique (consider first and last name), but the collection itself is. Lastly, a candidate key might be CWID. It can certainly be used to uniquely identify a student, but the role of primary key has already been given student k-accounts in our example.
3. Relational databases can store a number of different data types. CHAR and VARCHAR are used for character strings of fixed or varying length. BIT and BIT VARYING are bit strings of fixed or varying length. The BOOLEAN type denotes a logical value, TRUE, FALSE, and UNKONWN. Lastly,

the INT or INTEGER type denotes integer values. SHORTINT also denotes an integer, but fewer bits are permitted. DATE and TIME are also acceptable data types that come in a special character string form. Lastly, while maybe not as common as the other data types, FLOAT, REAL, DOUBLE PRECISION, DECIMAL, and NUMERIC are also acceptable data types. Below is a relational database table with celebrity names and other details.

Celebrity (VARCHAR)	Twitter Handle (VARCHAR)	Birthday (DATE)
Cristiano Ronaldo	@Cristiano	February 5, 1985
Chris Pratt	@prattprattpratt	June 21, 1979
Chris Brown	@chrisbrown	May 5, 1989

4. There are a few relational rules to abide by in relational database management. The first formal rule is that every component of every tuple must be atomic. That is, every component must be some elementary type such as an integer or string. This allows us to avoid data that is confusing, misleading, or simply unwanted. Furthermore, breaking this rule limits us to the number of fields we started with in the first place. Our super powers example from class illustrates this. Another rule is that you can only access rows by content. In other words, you access by *what*, not *where*. You're not going to know exactly where things are in a database, so it is important to access by specifying exactly what you are looking for, like Chris Pratt's twitter handle. Lastly, all rows must be unique. If rows had the same attributes, then there would be unwanted duplication. Though it might be cool if there were two Chris Pratt's, there is no need to list him an all related information more than once in a relation. Following this simple rule keeps databases simple and easy to follow.