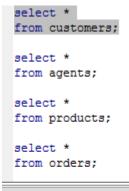
Ryan Fredericks

Assignment 2

Database Management

select * from customers;



utput pa				
Data Out	put Explain N	lessage:	s His	tory
	cid character(4)			discount numeric(5,2)
1	c001	Tiptop	Dulut	10.00
2	c002	Basics	Dallas	12.00
3	c003	Allied	Dallas	8.00
4	c004	ACME	Dulut	8.00
5	c005	Weylan	Acher	0.00
6	c006	ACME	Kyoto	0.00

select * from agents;

```
select *
   from customers;
   select *
   from agents;
  select *
   from products;
  select *
   from orders;
Output pane
Data Output Explain Messages History
        aid name city percent character(3) text text real
   1
        a01
                     Smith New 16
   2
        a02
                     Jones Newa 6
   3
        a03
                     Brown Tokyc 7
   4
        a04
                     Gray New 16
                     Otasi Dulutl 5
   5
      a05
   6
        a06
                     Smith Dallas 5
                     Bond Londo 7
   7
        a08
```

select * from products;

```
select *
from customers;

select *
from agents;

select *
from products;

select *
from orders;
```

Output pa	utput pane							
Data Output Explain Messages History								
	pid character			quantity integer	priceusd numeric(10,2)			
1	p02	brush	Newa	203000	0.50			
2	p03	razor	Duluti	150600	1.00			
3	p04	pen	Duluti	125300	1.00			
4	p05	pencil	Dallas	221400	1.00			
5	p06	folder	Dallas	123100	2.00			
6	p07	case	Newa	100500	1.00			
7	p08	dip	Newa	200600	1.25			
8	p01	comb	Dallas	111400	5.07			

select * from orders;

7

8

9

10

11

12

13

14

1019

1020

1021

1022

1023

1024

1025

1026

feb

feb

feb

mar

mar

mar

apr

may

c001

c006

c004

c001

c001

c006

c001

c002

```
select *
  from customers;
  select *
  from agents;
  select *
  from products;
  select *
  from orders;
Output pane
Data Output
           Explain Messages
                              History
                              cid
                                           aid
                                                         pid
                                                                               dollars
        ordno
                mon
                                                                       atv
        integer character(3) character(4) character(3) character(3) integer
                                                                               numeric(12,2)
   1
        1011
                                                                       1000
                                                                               450.00
                                                                              880.00
   2
        1013
                              c002
                                           a03
                                                         p03
                                                                      1000
   3
        1015
                              c003
                                           a03
                                                         p05
                                                                      1200
                                                                               1104.00
                jan
   4
        1016
                                                                      1000
                                                                               500.00
                              c006
                                           a01
                                                         p01
                jan
   5
        1017
                feb
                              c001
                                           a06
                                                         p03
                                                                      600
                                                                               540.00
   6
        1018
                feb
                                                                      600
                                                                               540.00
                              c001
                                           a03
                                                         p04
```

2. Explain the distinctions among the terms primary key, candidate key, and superkey.

a02

a03

a06

a05

a04

a06

a05

a05

a. A primary key is a key in a database that will be unique identifier for every database it is in, and

p02

p07

p01

p06

p05

p01

p07

p03

400

600

1000

400

500

800

800

800

180.00

600.00

460.00

720.00

450.00

400.00

720.00

740.00

- b. A candidate key is a combination of columns or a singular column that can be a unique identifier and a unique key for a database. It can be a primary key although that is not always the case.
- c. A superkey is anything that can be a primary key, even if it does not necessarily have unique identified records.
- 2. Write a short essay on data types. Select a topic for which you might create a table. Name the table and list its fields (columns). For each field, give its data type and whether or not it is nullable.

- a. Character strings (CHAR) can be a certain amount of characters, defined in the system by a certain length. Varchar is similar to char, however it is usually denoting an endmarker or string-length, while char is usually used for shorter strings.
- b. Bit strings are used to create strings which have a certain length, while bit varying(n) can be used to have a bit strings that get up to that size n of a string.
- c. Boolean is a type that is logical, and can be described as True, False, or in some small cases Unknown.
- d. The int or integer type denotes integer values (whole numbers), while the SHORTINT type is typically used for smaller integers.
- e. FLOAT or REAL can be used for floating-point numbers, which are numbers with a decimal, and has two values which can be used, where FLOAT (n,d), where n is the total length of the floating point number, while d is the number of decimal digits.
- f. Dates and times are shown by, surprisingly, DATE and TIME, are character strings which are used in a special way that is predetermined.

```
CREATE TABLE Actors
(
ActorID
                 int(9) NOT NULL,
LastName
                 varchar(20) NOT NULL,
FirstName
                 varchar(20),
Description
                 bit varing(30) NOT NULL,
                 int(4) NOT NULL,
Age
Accepted
                 Boolean NOT NULL,
GPA
                 Float(3,2),
DateEntered
                 date
Primary Key (ActorID)
);
```

- 4. Explain the following relational "rules" with examples and reasons why they are important.
 - a. The first normal form rule is the rule that says that a relation that is in the first normal form should not have a domain in the relation that is a set, and that it should be individual elements. This means that all data should have individual values of a certain type which is not of any other types unless changed within the table.
 - b. The access rows by content only rule is the rule that defines how searching for data is achieved within rows. This allows the database to find information through the rows of a table, and makes sure that the system will only extract data from rows using the data that is stored within rows of the database.
 - c. The "all rows must be unique" rule means that there can be no two rows in a table could be exactly the same, although they can have the same or similar values in the

same columns, as long as the rows are completely similar. This stops duplicate rows which can slow down the system.