Mark Miller Database Management January 29, 2017

Lab 2

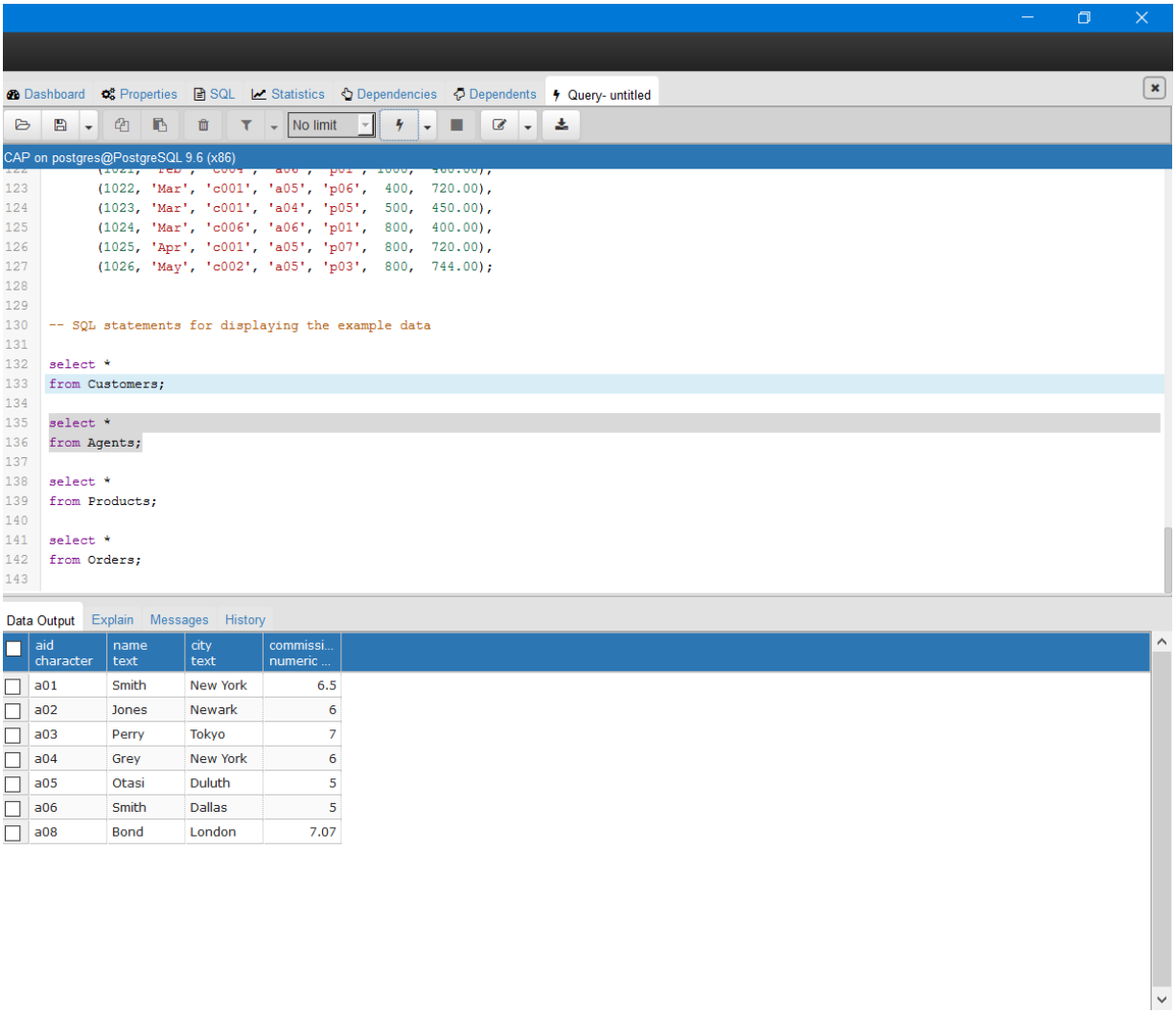
1. A primary key is a column or set number of columns that is designed to specifically identify all table records. One of its main feature is that it must have a unique value for each row of data. This differs from a candidate key which is a column or columns that can uniquely identity any database record without having to refer to any other data. Each candidate key can qualify as a primary key, but only one candidate key can be a primary key. There is also a super key, which is a combination of columns that uniquely identities any row within a relational database. A candidate key is closely related but differs in that the super key is reduced to the minimum number of columns required to identify each row.

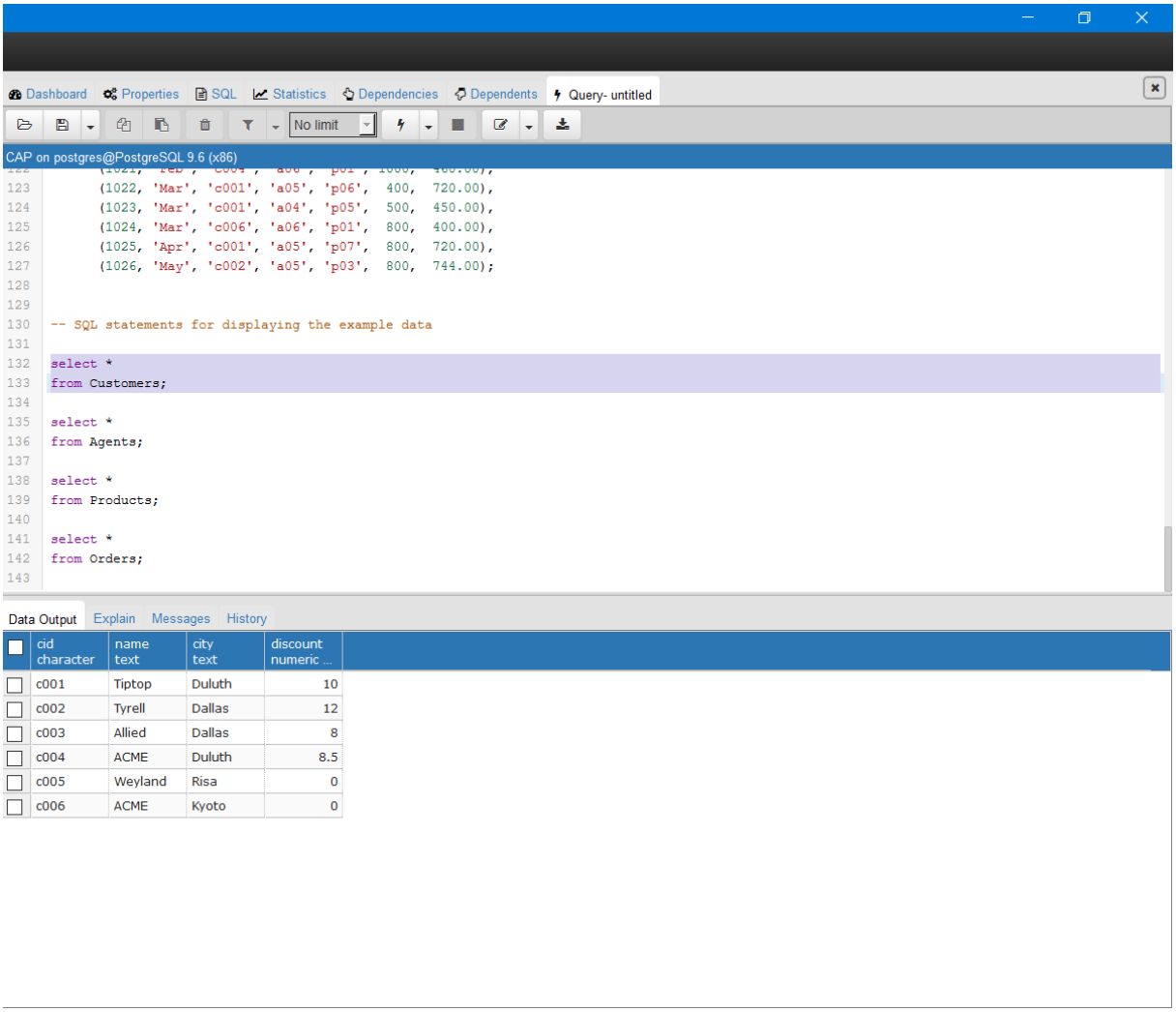
2. A data type is a particular kind of data item that is defined by the values it can take, the program language used or by the operations that can be performed on it. The primitive data types that are supported by SQL systems are character strings, bit strings, Boolean attribute, integer types, floating-point numbers, and data and times. We can put these to use if we think about a topic in which we create a table. For instance, Xbox and how they keep track of everyone's username and Xbox. In this case they may have a table:

Name	Username	Console	Serial Number	email	Membership Renewal:
Mark Miller	markyMARK0702	Xbox One	123456789	Mark.miller3@marist.edu	January 2, 2018
Rob Lynch	Rml965	Xbox One	987654321	Robert.lynch1@marist.edu	February 7, 2017
Betty Crocker	Bcrocker12	Xbox 360	192837546	BettyCrocker@goodfood.com	June 8, 2017

In the name column its data type would be type string. The next column would also be a data type string. In the serial number column we would either have a datatype INT or CHAR() with a specified string length. This is because the serial number could either be a designated string of letters or integers. Then the next column would go back to a datatype CHAR() with a designated string length. The last column would be given a DATE and TIME data type. In this case all values will be not null. The only expectation may be a value withheld for the serial number in which we are not entitled to know that the value that belongs there. This may be true if someone other than a Xbox employee is looking at this or if safety measure are put into place where an employee must go through some other procedures to find the given serial number.

3. The “first normal form” rule states that the database contains only atomic values and that there are no repeating groups. For example if we were creating a database of what people from Mcdonalds, we could have a problem because some people may order more than one thing creating a discrepancy because a column contains multiple values for one attribute. This good because everything has one value and usually creates a spate table in order to make the rule work. The second rule is accessing the rule by content. Instead of asking to go to row 8 for instance you ask for the content that you are searching for to access the entire content of that tuple. This is good because rows may change over time and if you say something like access role 8, the data contained in there might have changed over time. The third and final rule stats that all rows must be unique. It means exactly what is says that each and every row must be unique. This is important as you this doesn’t allow to be repeats of any data that is put in, which eliminates redundancy.


Dashboard
Properties
SQL
Statistics
Dependencies
Dependents
Query- untitled
No limit
CAP on postgres@PostgreSQL 9.6 (x86)
(1022, 'Mar', 'c001', 'a05', 'p06', 400, 720.00),
(1023, 'Mar', 'c001', 'a04', 'p05', 500, 450.00),
(1024, 'Mar', 'c006', 'a06', 'p01', 800, 400.00),
(1025, 'Apr', 'c001', 'a05', 'p07', 800, 720.00),
(1026, 'May', 'c002', 'a05', 'p03', 800, 744.00);
-- SQL statements for displaying the example data
select *
from Customers;
select *
from Agents;
select *
from Products;
select *
from Orders;
Data Output
Explain
Messages
History
aid character
name text
city text
commissi... numeric ...
a01 Smith New York 6.5
a02 Jones Newark 6
a03 Perry Tokyo 7
a04 Grey New York 6
a05 Otasi Duluth 5
a06 Smith Dallas 5
a08 Bond London 7.07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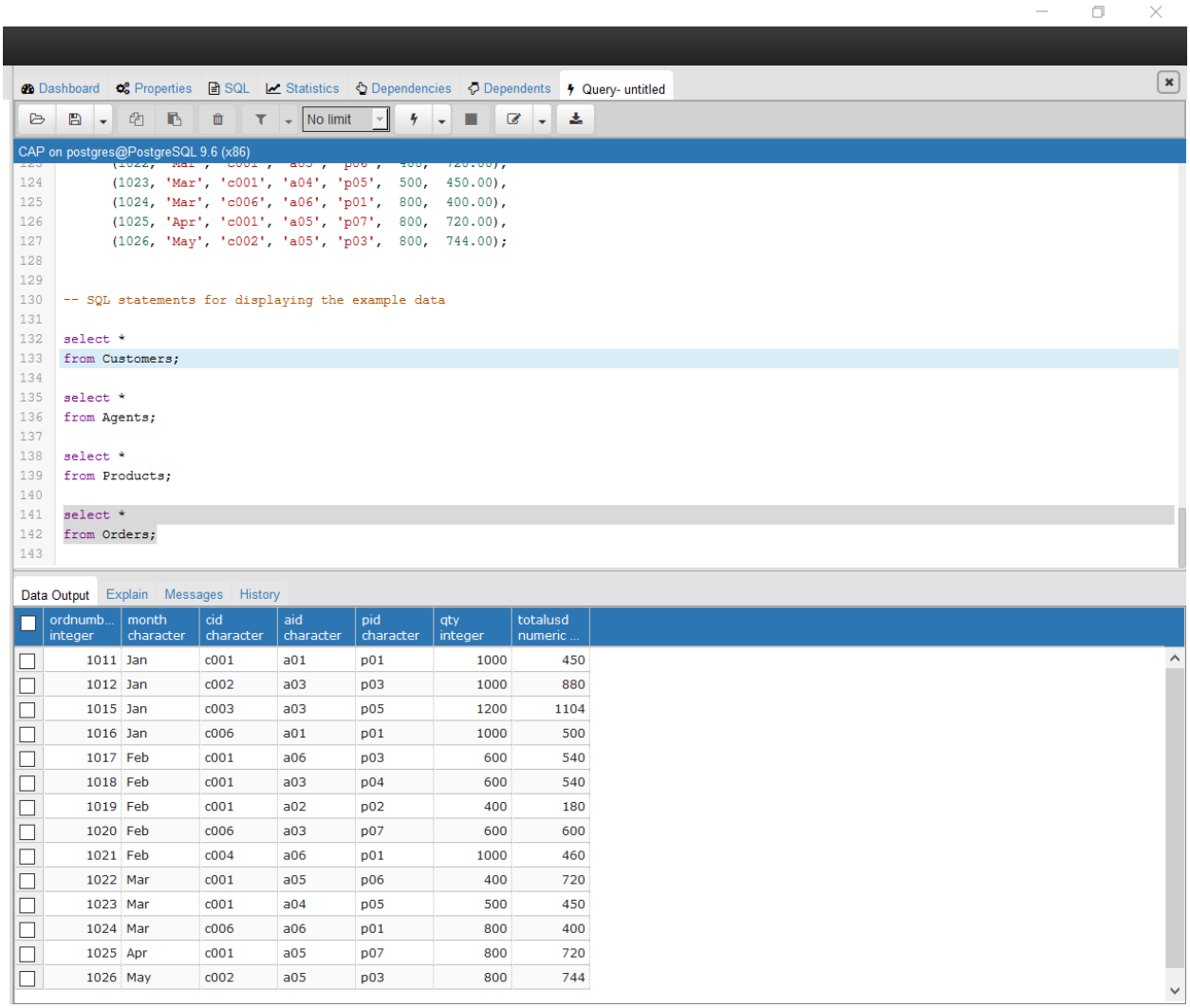
-- SQL statements for displaying the example data
select *
from Customers;
select *
from Agents;
select *
from Products;
select *
from Orders;
Data Output
Explain
Messages
History
cid character
name text
city text
discount numeric ...
c001 Tiptop Duluth 10
c002 Tyrell Dallas 12
c003 Allied Dallas 8
c004 ACME Duluth 8.5
c005 Weyland Risa 0
c006 ACME Kyoto 0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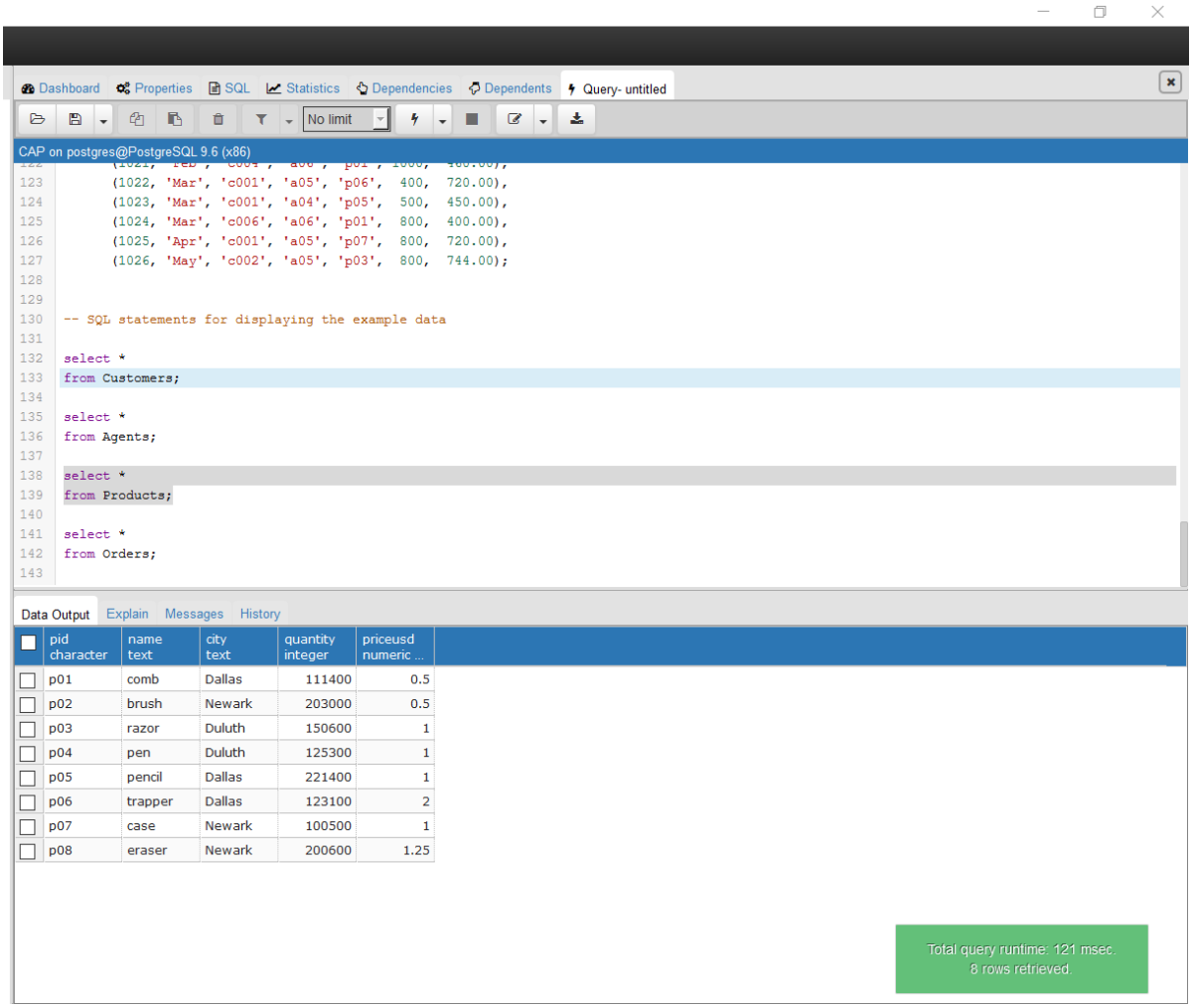
-- SQL statements for displaying the example data
select *
from Customers;
select *
from Agents;
select *
from Products;
select *
from Orders;
Data Output
Explain
Messages
History
ordnumb... integer
month character
cid character
aid character
pid character
qty integer
totalusd numeric ...
1011 Jan c001 a01 p01 1000 450
1012 Jan c002 a03 p03 1000 880
1015 Jan c003 a03 p05 1200 1104
1016 Jan c006 a01 p01 1000 500
1017 Feb c001 a06 p03 600 540
1018 Feb c001 a03 p04 600 540
1019 Feb c001 a02 p02 400 180
1020 Feb c006 a03 p07 600 600
1021 Feb c004 a06 p01 1000 460
1022 Mar c001 a05 p06 400 720
1023 Mar c001 a04 p05 500 450
1024 Mar c006 a06 p01 800 400
1025 Apr c001 a05 p07 800 720
1026 May c002 a05 p03 800 744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Properties
SQL
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Query- untitled
No limit
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(1026, 'May', 'c002', 'a05', 'p03', 800, 744.00);
-- SQL statements for displaying the example data
select *
from Customers;
select *
from Agents;
select *
from Products;
select *
from Orders;
Data Output
Explain
Messages
History
pid character
name text
city text
quantity integer
priceusd numeric ...
p01 comb Dallas 111400 0.5
p02 brush Newark 203000 0.5
p03 razor Duluth 150600 1
p04 pen Duluth 125300 1
p05 pencil Dallas 221400 1
p06 trapper Dallas 123100 2
p07 case Newark 100500 1
p08 eraser Newark 200600 1.25
Total query runtime: 121 msec.
8 rows retrieved.