1.

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Query Editor | Query History

```
1  select *
2  from People;
```

Data Output | Explain | Messages | Notifications

	pid [PK] integer	prefix text	firstname text	lastname text	suffix text	homecity text	dob date
1	1	Dr.	Neil	Peart	Ph.D.	Toronto	1952-09...
2	2	Ms.	Regina	Schock	[null]	Toronto	1957-08...
3	3	Mr.	Bruce	Crump	Jr.	Jacksonville	1957-07...
4	4	Mr.	Todd	Sucherman	[null]	Chicago	1969-05...
5	5	Mr.	Bernard	Purdie	[null]	Teaneck	1939-06...
6	6	Ms.	Demetra	Plakas	Esq.	Santa Monica	1960-11...
7	7	Ms.	Terri Lyne	Carrington	[null]	Boston	1965-08...
8	8	Dr.	Bill	Bruford	Ph.D.	Kent	1949-05...
9	9	Mr.	Alan	White	III	Pelton	1949-06...

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Query Editor | Query History

```
1  select *
2  from Customers;
```

Data Output | Explain | Messages | Notifications

	pid [PK] integer	paymentterms text	discountpct numeric (5,2)
1	1	Net 30	21.12
2	4	Net 15	4.04
3	5	In Advance	5.50
4	7	On Receipt	2.00
5	8	Net 30	10.00

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Query Editor | Query History

```
1 select *
2 from Agents;
```

Data Output | Explain | Messages | Notifications

	pid [PK] integer	paymentterms text	commissionpct numeric (5,2)
1	2	Quarterly	5.00
2	3	Annually	10.00
3	5	Monthly	2.00
4	6	Weekly	1.00

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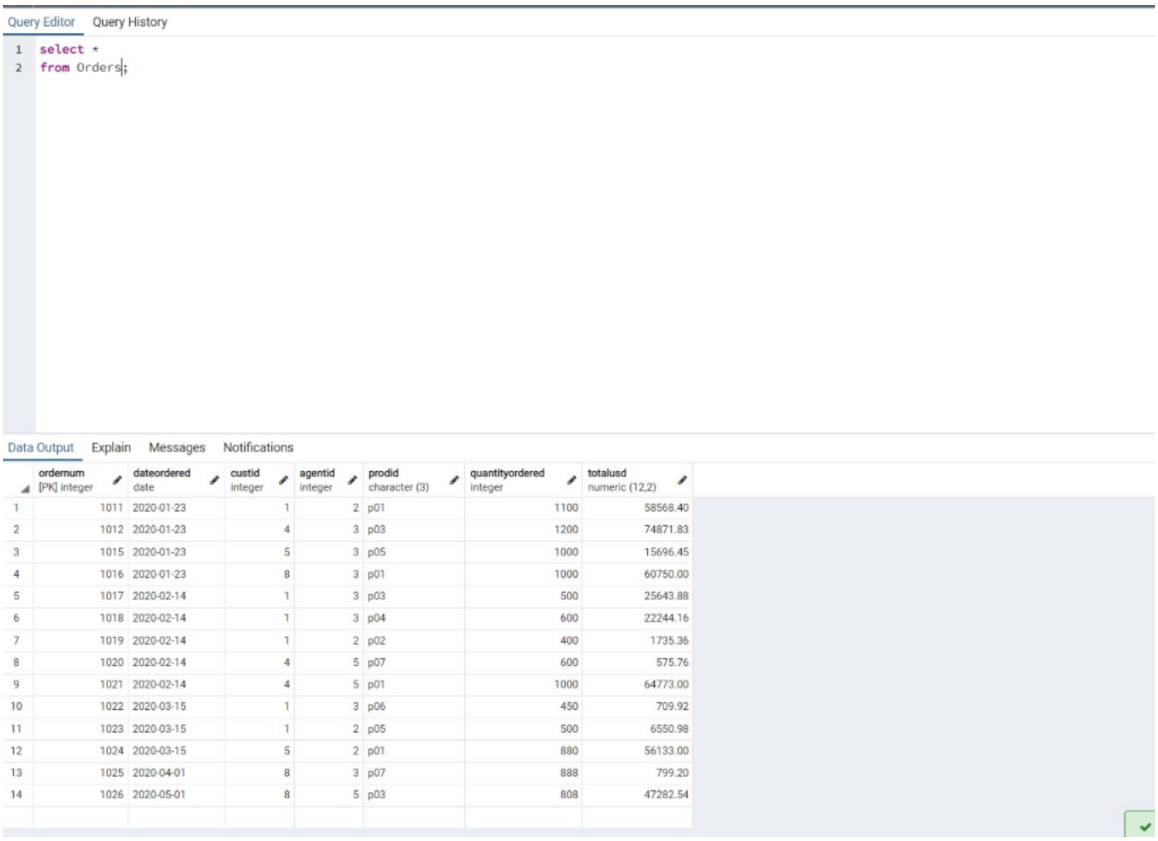
Query Editor | Query History

```
1 select *
2 from Products;
```

Data Output | Explain | Messages | Notifications

	prodid [PK] character (3)	name text	city text	qtyonhand integer	priceusd numeric (10,2)
1	p01	Heisen...	Dallas	47	67.50
2	p02	Univers...	Newark	2399	5.50
3	p03	Comm...	Duluth	1979	65.02
4	p04	LCARS ...	Duluth	3	47.00
5	p05	Remo ...	Dallas	8675309	16.61
6	p06	Trappe...	Dallas	1982	2.00
7	p07	Flux Ca...	Newark	1007	1.00
8	p08	HAL 90...	Newark	200	1.25
9	p09	Red Ba...	Toronto	1	379000.47



	ordernum [PK] integer	dateordered date	custid integer	agentid integer	prodid character (3)	quantityordered integer	totalusd numeric (12,2)
1	1011	2020-01-23	1	2	p01	1100	58568.40
2	1012	2020-01-23	4	3	p03	1200	74871.83
3	1015	2020-01-23	5	3	p05	1000	15696.45
4	1016	2020-01-23	8	3	p01	1000	60750.00
5	1017	2020-02-14	1	3	p03	500	25643.88
6	1018	2020-02-14	1	3	p04	600	22244.16
7	1019	2020-02-14	1	2	p02	400	1735.36
8	1020	2020-02-14	4	5	p07	600	575.76
9	1021	2020-02-14	4	5	p01	1000	64773.00
10	1022	2020-03-15	1	3	p06	450	709.92
11	1023	2020-03-15	1	2	p05	500	6550.98
12	1024	2020-03-15	5	2	p01	880	56133.00
13	1025	2020-04-01	8	3	p07	888	799.20
14	1026	2020-05-01	8	5	p03	808	47282.54

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

A candidate key is a column in a database that has a unique value for each row. A table can have multiple candidate keys, but the best one can be used as the primary key. A superkey is a set of columns that is unique. A superkey may be a combination of candidate keys.

3. 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.

Suppose a credit card company creates a database of clients and their card information.

The title of the table would be “Clients” and the fields would be first name, last name, card number, expiration month, expiration year, and security code. None of the fields would be nullable.

firstname: VARCHAR

lastname: VARCHAR

cardnum: INT

expmon: INT

expyear: INT

secnum: INT

4. Explain the following relational “rules” with examples and reasons why they are important.

a. The “first normal form” rule

The “first normal form” rule states that the fields in a database must contain indivisible, or atomic, values. This rule keeps databases easy to read and easy to use. It also ensures that data is not unnecessarily repeated.

b. The “access rows by content only” rule

The “access rows by content only” rule states that, when accessing databases, the query uses the content of the database, and not the location of the data. This is because tables have no order, and the location of the data can easily change.

c. The “all rows must be unique” rule

The “all rows must be unique” rule simply ensures that two rows can’t be indistinguishable.