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Professor Labouseur
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Lab 2

1. All screenshots of queries

```
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.	Maynard	Ferguson	Ph.D.	Montreal	1928-05-04
2	2	Ms.	Bria	Skonberg	[null]	Chilliwack	1987-12-29
3	3	Mr.	Miles	Davis	Esq.	Alton	1926-05-26
4	4	Mr.	Doc	Severinsen	[null]	Arlington	1927-07-07
5	5	Mr.	Louis	Armstrong	[null]	New Orleans	1901-08-04
6	6	Ms.	Tine	Helseth	Esq.	Oslo	1987-08-18
7	7	Dr.	Cynthia	Robinson	MD	Sacramento	1944-01-12
8	8	Dr.	James	Morrison	Ph.D.	Oslo	1962-11-11
9	9	Mr.	Dizzy	Gillespie	III	Montreal	1917-10-21

```
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	2.47
3	5	In Advance	5.05
4	7	On Receipt	2.00
5	8	Net 30	10.01

```
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	1.00
4	6	Weekly	2.00

```
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	Heisenberg Compensator	Dallas	47	67.50
2	p02	Universal Translator	Newark	2399	5.50
3	p03	Apple //+	Duluth	1979	65.02
4	p04	LCARS module	Duluth	3	47.00
5	p05	Denis Wick Valve Oil	Dallas	8675309	16.61
6	p06	Trapper Keeper	Dallas	1982	2.00
7	p07	Flux Capacitor	Newark	1007	1.00
8	p08	HAL 9000 memory core	Newark	200	1.25
9	p09	Bach Stradivarius 37	Montreal	1	37900.47

```
1  select *
2  from Orders;
```

Data Output | Explain | Messages | Notifications

	ordernum [PK] integer	dateordered date	custid integer	agentid integer	prodid character (3)	quantityordered integer	totalusd numeric (12,2)
1	1011	2021-01-23	1	2	p01	1100	58568.40
2	1012	2021-01-23	4	3	p03	1200	76096.81
3	1015	2021-01-23	5	3	p05	1000	15771.20
4	1016	2021-01-23	8	3	p01	1000	60743.25
5	1017	2021-02-14	1	3	p03	500	25643.88
6	1018	2021-02-14	1	3	p04	600	22244.16
7	1019	2021-02-14	1	2	p02	400	1735.36
8	1020	2021-02-14	4	5	p07	600	585.18
9	1021	2021-02-14	4	5	p01	1000	65382.75
10	1022	2021-03-15	1	3	p06	450	709.92
11	1023	2021-03-15	1	2	p05	500	6550.98
12	1024	2021-03-15	5	2	p01	880	56400.30
13	1025	2020-04-01	8	3	p07	888	799.11
14	1026	2021-05-04	8	5	p03	808	47277.29

2. Explain the distinctions among the terms primary key, candidate key, and superkey:
A super key is the smallest set of fields that uniquely identify every row in a table. The candidate key is a minimal super key, meaning the smallest amount of fields. The primary key is the chosen candidate key since there can be multiple minimal super 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.

Common data types in databases consist of integers, text, and dates. I would create a table for an employee chart inside of a company. The fields could consist of id number, first name, last name, position, date started, performance rating, hours worked, and pay range. The fields that consist of the text data type would be first name, last name, position, and performance rating. The fields that consist of the integer data type would be the id number, hours worked, and pay range. Lastly, the field that would consist of the date data type would be the date stated at the company.

4. Explain the following relational "rules" with examples and reasons why they are important.
   a. The "first normal form" rule
   b. The "access rows by content only" rule
   c. The "all rows must be unique" rule

The "first normal form" rule is that there can be no multi-valued attributes with internal structure at any intersection of a row and a column in a table. This means that inside of a table, there can only be <u>one</u> distinct topic in each box.

The "access rows by content only" rule is that we can only access data by what the content is, not by where it is in the table.

The "all rows must be unique" rule ensures our ability to get at every row in a table because there are no repeating data. If not, some rows could be the exact same.