Gabriella Nina **Lab 2** **1/3/22**

1. **Execute the following queries (one at a time) from pgAdmin's SQL Tool:**

```
select *
from People;
```

	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

```
select *
from Customers;
```

	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

```
select *
from Agents;
```

	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

```
select *
from Products;
```

	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

```
select *
from Orders;
```

	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. A super key is any field or set of fields that uniquely identify every row in a table. A primary key is what uniquely identifies the columns in a table. A candidate key is a single key or group of multiple keys that uniquely identify rows in a table
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.**

a. Data types are the format that data is stored in. these data types are character strings, boolean, integers, floating-point numbers, and dates and times. For example, a table that can be made is one for movies. The fields in this table would be, title (Char), year(Int), length(Int), genre(Char).

4. **Explain the following relational "rules" with examples and reasons why they are important.**
    a. **a. The "First normal form" rule**
        i. There can be no multi-valued attributes. Meaning all values at the intersection of a row and column must be atomic. This is important because it prevents repeating groups. An example of something that violates the first rule would be an entry that listed multiple skills in one entry for the skills field.
    b. **The "access rows by content only" rule**
        i. This is when we can only ask for ("query") data by what's there and not by where it is. This is important because tables are sets and have no intrinsic order. A way to understand this would be to ask what the name of someone with a specific ID is not what is the name in the first row.
    c. **The "all rows must be unique" rule**
        i. This rule helps ensure that every row in a table is unique to avoid inaccurate data and duplication. An example where this rule would be violated is if there are two of the same row entries in two different places rather than just one.