Introduction to SQL

Structured

Query

Language

S-Q-L or “Sequel”

- Database management language used by most major companies
- Particularly essential in tech and e-commerce
- Future Amazonians: “This will save each person a month of nights and weekends learning this on their own”

Relational Database Management Systems (RDBMS)

Oracle

MySQL

Microsoft SQL Server

SQLite

Relational Databases ≈ Excel files

(not functionally….just visualize them this way)

Database ≈ a single Excel workbook

Table ≈ a single worksheet in the same Excel file

	A	B	C	D	E	F	G
1	id	model_id	customer_id	revenue	payment_typ	salesman_id	date
2	54858	36	237906	21222	finance	492	1/7/14
3	43161	20	967016	19140	finance	215	1/26/14
4	40112	46	819010	14720	cash	862	1/17/14
5	92495	31	633030	19010	finance	803	1/13/14
6	78000	51	341877	22022	finance	862	1/12/14
7	13154	75	720210	21409	cash	492	1/20/14
8	36535	31	908558	19894	finance	862	1/30/14
9	22813	46	705508	12960	finance	225	1/29/14
10	56245	36	248621	25938	cash	276	1/19/14
11	88118	51	341344	19844	finance	492	1/23/14
12	84469	31	733566	21441	finance	215	1/20/14
13	37412	31	750195	17462	cash	276	1/11/14
14	68513	31	461723	17020	cash	803	1/18/14
15	74380	20	468665	18040	finance	215	1/5/14
16	24047	75	556188	18671	finance	862	1/12/14
17	40603	51	241759	22506	finance	862	1/4/14
18	69883	20	161369	20460	finance	803	1/25/14

sales_table | car_table | cust_table | salesman_table | +

Normal View | Ready

	A	B	C	D	E	F	G	H
1	model_id	make	model	sticker_price	cogs			
2	20	Toyota	Camry	22000	13200			
3	46	Toyota	Corolla	16000	9600			
4	51	Toyota	Prius	24200	14520			
5	19	Honda	Civic	18190	10914			
6	31	Honda	Accord	22105	13263			
7	75	Subaru	Outback	24895	14937			
8	22	Subaru	Forester	22195	13317			
9	36	Toyota	Tundra	26200	15720			
10								
11								
12								
13								
14								
15								
16								
17								
18								

sales_table | car_table | cust_table | salesman_table | +

Normal View | Ready

	A	B	C	D	E	F	G	H
1	customer_id	gender	age					
2	237906	female	21					
3	967016	female	40					
4	819010	female	18					
5	633030	female	25					
6	341877	male	24					
7	720210	female	54					
8	908558	female	42					
9	705508	female	27					
10	248621	female	31					
11	341344	female	47					
12	733566	male	42					
13	750195	male	45					
14	461723	male	42					
15	468665	female	44					
16	556188	female	24					
17	241759	female	26					
18	161369	female	33					

	A	B	C	D	E	F	G	H
1	id	first_name	last_name					
2	949	Samantha	Douglas					
3	215	Jared	Case					
4	813	Michael	Hill					
5	680	Claudine	Hatch					
6	276	Joseph	Seney					
7	803	Kathleen	March					
8	147	Rosemarie	Self					
9	862	Justin	Avellaneda					
10	225	Elton	Elzy					
11	492	Matthew	Luna					
12								
13								
14								
15								
16								
17								
18								
19								

sales_table | car_table | cust_table | salesman_table | +

Normal View | Ready

Four basic data management functions:

Create

Read

Update

Delete

Real talk: you're probably only ever going to "Read"

SQL + Excel = 

- Tech companies need a database that can handle millions of rows to record:
  - Each click, page view, & transaction
  - Users' demographic, geographic, and behavioral details
  - Basically everything they can think of
  - And all needs to be updated millions of times per minute
- Excel's row limit: 1,048,576/worksheet
- Use SQL for real-time updates, quick synthesis, and filtering
- Get the data you actually need, condense millions of rows into just a few meaningful ones.
- When you need visualizations and pivot tables, copy and paste to Excel

SQL > Reporting Dashboards

- Dashboards are limited to preconfigured reports
- Making changes requires dev support
- Reliance handicaps quick-moving companies that roll out new products and features regularly & need immediate feedback
- SQL lets you ask follow-up questions & get immediate answers
- Never bug your dev team again (about data)