

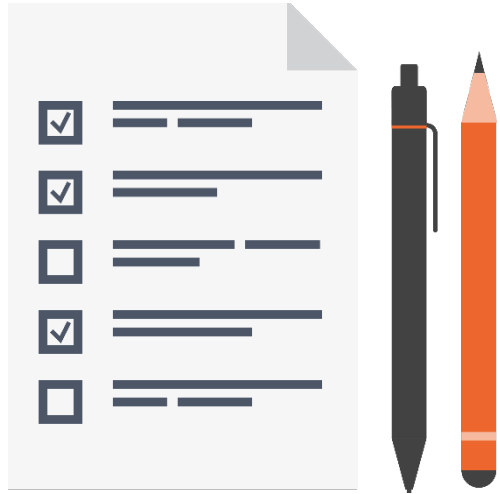
# Databases Overview



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# Module Goals



What are databases?

Why use a database?

Types of databases

How Databases Work

Where to find more

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# What Are Databases?

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Databases are computer systems designed to store and organize data for transactional and analytical purposes.

CogsleyServices-SalesData-Analysis-Start.xlsx - Excel

Ben Sullins

FILEHOMEINSERTPAGE LAYOUTFORMULASDATAREVIEWVIEWPOWERPIVOT

Paste

Clipboard

Calibri11

Font

Columns

ment

General

Number

Conditional Formatting

Styles

Format as Table

Cells

Cell Styles

Cells

Insert

Cells

Delete

Cells

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Cells

AutoSum

Editing

Fill

Editing

Clear

Editing

Sort & Find & Filter

Editing

Select

Editing

A1

Row ID

Row ID	Order ID	Order Date	Order (M/Y)	Quantity	Quote	Discount	Rate	Sale Amo	Customer Name	Company Name	Sector	
1	1	3	10/13/2010	10/1/2010	6	\$ 1,200	4%	\$ 200	\$ 1,152.00	Muhammed MacIntyre	CA Inc.	Technology
2	2	6	2/20/2012	2/1/2012	2	\$ 280	1%	\$ 140	\$ 277.20	Ruben Staebel	Celgene Corporation	Health Ca
3	3	32	7/15/2011	7/1/2011	26	\$ 3,250	7%	\$ 125	\$ 3,022.50	Liz Greer	Twenty-First Century Fox, Inc.	Consume
4	4	32	7/15/2011	7/1/2011	24	\$ 3,000	9%	\$ 125	\$ 2,730.00	Liz Greer	Twenty-First Century Fox, Inc.	Consume
5	5	32	7/15/2011	7/1/2011	23	\$ 3,450	4%	\$ 150	\$ 3,312.00	Liz Greer	Twenty-First Century Fox, Inc.	Consume
6	6	32	7/15/2011	7/1/2011	15	\$ 2,250	4%	\$ 150	\$ 2,160.00	Liz Greer	Twenty-First Century Fox, Inc.	Consume
7	7	35	10/22/2011	10/1/2011	30	\$ 3,600	3%	\$ 120	\$ 3,492.00	Julie Knight	SanDisk Corporation	Technology
8	8	35	10/22/2011	10/1/2011	14	\$ 2,100	1%	\$ 150	\$ 2,079.00	Julie Knight	SanDisk Corporation	Technology
9	9	36	11/2/2011	11/1/2011	46	\$ 6,900	10%	\$ 150	\$ 6,210.00	Sample Manning	Cognizant Technology Solutions Corporation	Technology
10	10	65	3/17/2011	3/1/2011	32	\$ 4,800	2%	\$ 150	\$ 4,704.00	Tamara O'Brill	Symantec Corporation	Technology
11	11	66	1/19/2009	1/1/2009	41	\$ 4,920	9%	\$ 120	\$ 4,477.20	Arthur Nelson	Linear Technology Corporation	Technology
12	12	69	6/3/2009	6/1/2009	42	\$ 5,250	9%	\$ 125	\$ 4,777.50	Jonathan Akin	NVIDIA Corporation	Technology
13	13	69	6/3/2009	6/1/2009	28	\$ 3,360	3%	\$ 120	\$ 3,259.20	Jonathan Akin	NVIDIA Corporation	Technology
14	14	70	12/17/2010	12/1/2010	48	\$ 6,720	3%	\$ 140	\$ 6,518.40	Helen Kimmel	Amgen Inc.	Health Ca
15	15	70	12/17/2010	12/1/2010	46	\$ 6,900	5%	\$ 150	\$ 6,555.00	Helen Kimmel	Amgen Inc.	Health Ca
16	16	96	4/16/2009	4/1/2009	37	\$ 5,550	1%	\$ 150	\$ 5,494.50	Keith Beeghly	Altera Corporation	Technology
17	17	97	1/28/2010	1/1/2010	26	\$ 5,200	3%	\$ 200	\$ 5,044.00	Craig Donatelli	O'Reilly Automotive, Inc.	Consume
18	18	129	11/18/2012	11/1/2012	4	\$ 440			\$ 400.40	Pauline Wardle	Mattel, Inc.	Consume
19	19	130	5/7/2012	5/1/2012	3	\$ 450			\$ 427.50	Roy Smith	Bed Bath & Beyond Inc.	Consume
20	20	130	5/7/2012	5/1/2012	29	\$ 3,190	2%	\$ 110	\$ 3,126.20	Roy Smith	Bed Bath & Beyond Inc.	Consume
21	21	130	5/7/2012	5/1/2012	23	\$ 4,600	5%	\$ 200	\$ 4,370.00	Roy Smith	Bed Bath & Beyond Inc.	Consume
22	22	132	6/10/2010	6/1/2010	27	\$ 4,050	3%	\$ 150	\$ 3,928.50	Emily Fortune	Keurig Green Mountain, Inc.	Consume

Tables

SalesCompaniesManagersHourlyWagesPricebook



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# Why Use a Database?

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Databases provide greater capacity and flexibility in working with data.









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# Types of Databases

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# Relational Databases



Highly Normalized  
Transactional Design  
Eliminates Redundancy  
Doesn't Scale



# Analytical Databases



De-Normalized

Human Oriented

Simplifies Queries

Data Warehouse / Data Mart

# NoSQL Databases



Document, Key-Value, Graph

Schema-less

Not Only SQL

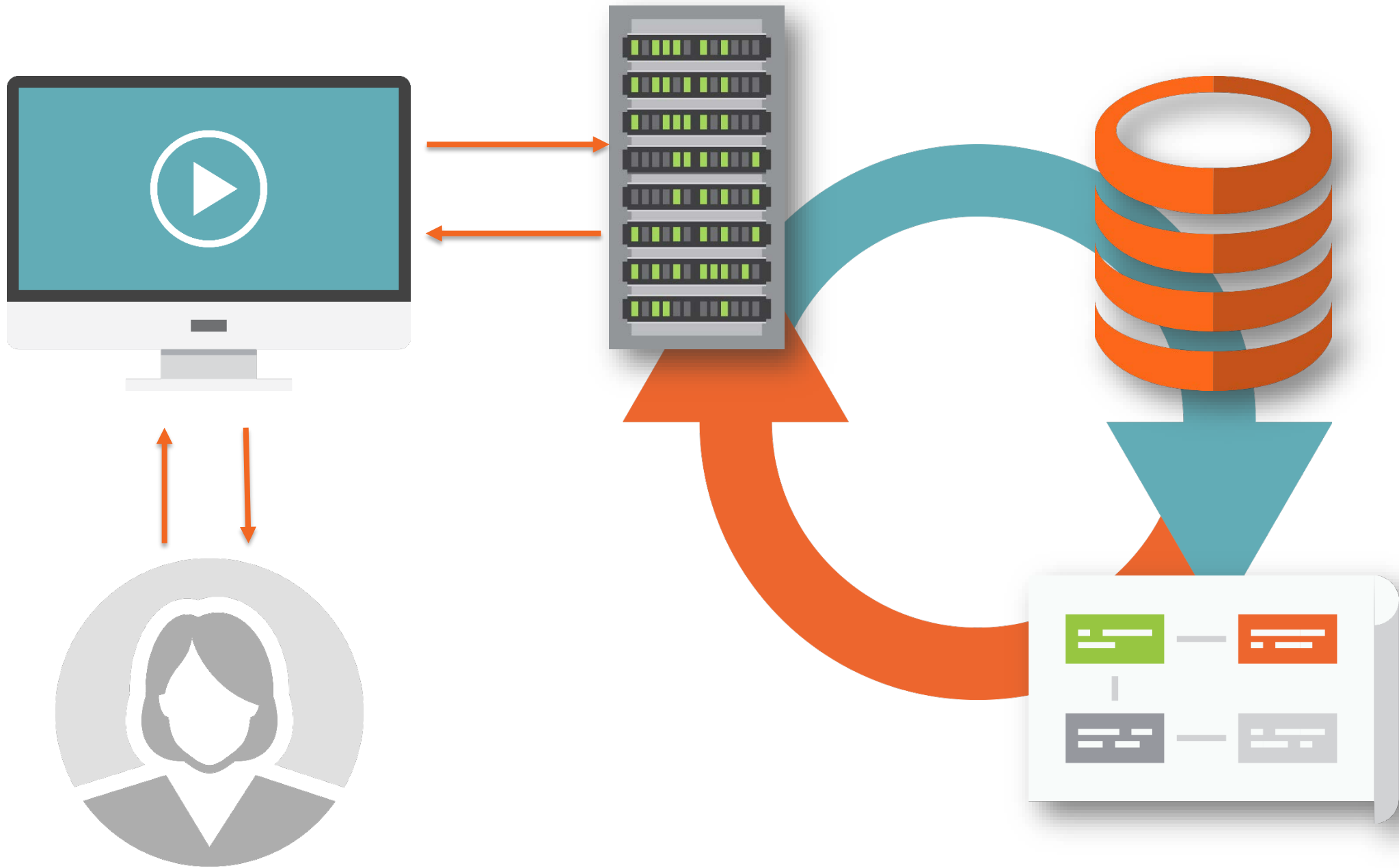
Large Scale, CAP Theorem



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# How Databases Work

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# Demo: Setting up SQL Server

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# Demo: Loading Data to SQL Server

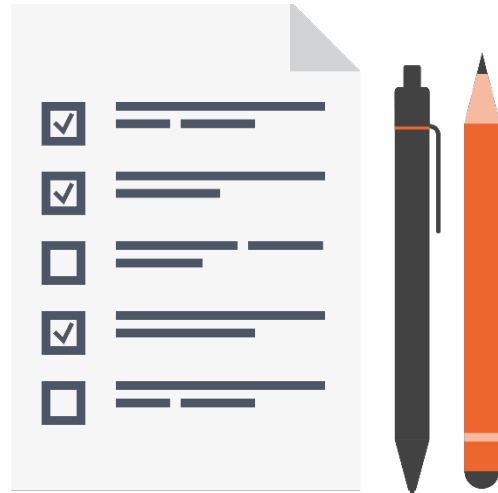
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# Where to Find More

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# Additional Resources



## Pluralsight Courses:

- **PostgreSQL: Getting Started**
- **Introduction to Graph Databases and Neo4j**
- **MySQL Fundamentals**
- **SQL Server Fundamentals**

## Code School:

- **Try SQL**