What is a Relational Database?

*game, **set**, match*

Overview

- Databases and data integrity
- Relational reaction to integrity issues
- Dr. Codd uses math

Table Stores Entities

- **Row in table represents entity**
  - columns describe attributes of an entity
- **Table stores one kind of entity**
  - attributes do not determine kind

Paint Can Table

Opening	Volume	Qty
3"	1qt	12
4"	1qt	9
4"	1gal	8

An Entity is Unique

- **Entity represents real world item**
  - there is only one of each
- **Identified by its attributes**

SQL Server

Entity Framework 4.0 By Example	*Beginner*	[02:18:50]	08/27/2010
Entity Framework and Data Models	*Intermediate*	[01:31:38]	11/05/2010
Introduction to Data Warehousing and Business Intelligence	*Beginner*	[01:13:19]	11/30/2010
PowerPivot for Microsoft Excel 2010	*Beginner*	[02:23:40]	11/05/2010
Reporting Services Report Development Fundamentals	*Beginner*	[04:47:28]	12/14/2010
SQL Server - TSQL	*Intermediate*	[04:46:26]	03/22/2010
SQL Server Business Integration Tools	*Beginner*	[03:32:32]	05/10/2010
SQL Server Fundame…	*Beginner*	[07:55:35]	06/15/2010
Using XML and XQue…		[05:29:07]	08/20/2010

primary key violation

http://www.pluralsight… …oft/olt/courses.aspx

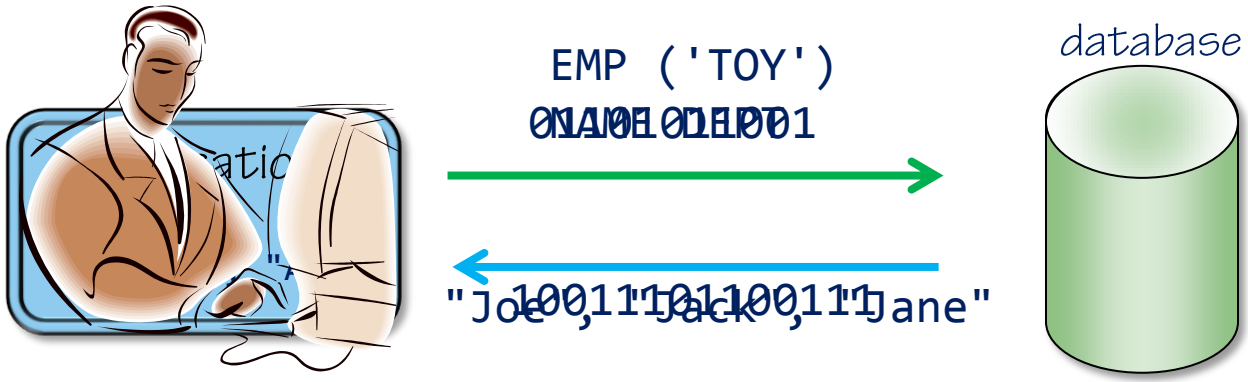
Text Based Language

- Access database with text based language
- Data in and out as text

SQL

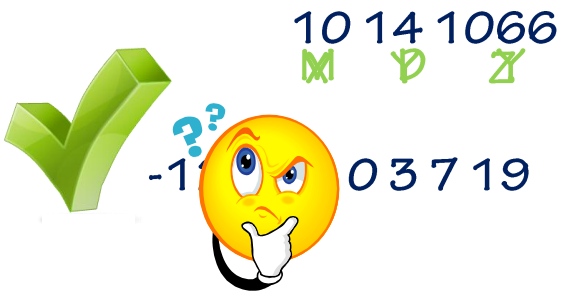
SEQUEL

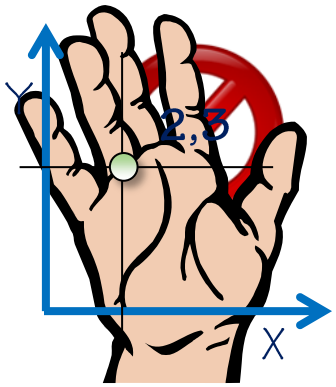
SQUARE



Scalar Values

- **Table stores scalar values**
  - non-scalars make set operations difficult

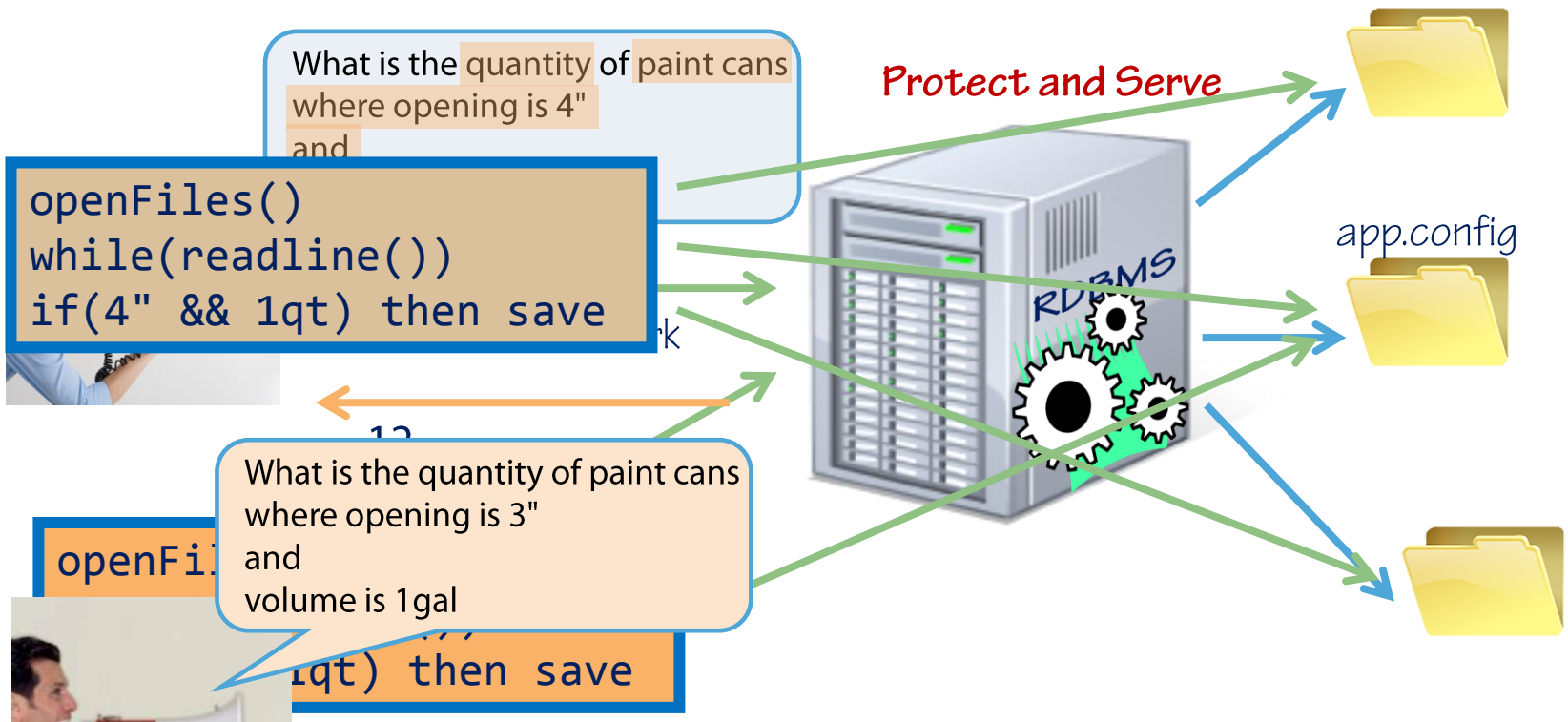




Name	X	Y
Joe	2	3

RDBMS

- Relational database management system



Summary

- **Relational databases were response to data integrity problems**
- **Relational database follows Dr. Codd's rules**
  - Table filled with entities
  - Table has Primary Key
  - Text based language
  - Scalar Values
  - RDBMS
- **Rules are meant to be broken.**

References

- Search for "Codd's Rules"
- A Relational model of data for large shared databanks
  - http://portal.acm.org/citation.cfm?id=358007
- SQUARE
  - http://portal.acm.org/citation.cfm?id=361219.361221
- SEQUEL — What started it all
  - www.almaden.ibm.com/cs/people/chamberlin/sequel-1974.pdf