Murach Chapter 1

An Introduction to Relational Databases and SQL

Week 1, Lec 1, Part 2

Key Topics

- Basic Terms
  - Relational Database
  - Table, Column, Row, Cell
  - Primary Key(single-column/composite)
  - Foreign Key
  - Unique Key
  - Index

Basic Terms

- Relational Database
  - A collection of related tables (relations)
- Table – in Murach's book, table = table that meets the conditions of a relation
  - A relation, typically modelled after a real world entity
  - E.g. employee
- Column (field)
  - Some attribute of an entity, e.g. employee salary
- Row (record)
  - Set of values for an instance of an entity
  - E.g. data about Scott: his empno, salary, name, etc
- Cell
  - Intersection of a row and a column
  - Stores a single value (=> one of conditions for a table to be a relation)
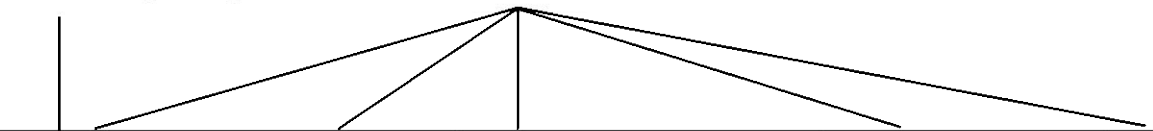 - E.g. the salary of Scott

Basic Terms

- Primary Key
  - 1 or multiple columns that uniquely identify each row in a table
  - E.g. empno in table employee;
- Composite Primary Key
  - A primary key that consists of multiple columns
- Unique Key
  - A column that is unique but not chosen as the primary key of the table
  - Also called Non-Primary Key
- Each table has only one primary key.
- Index
  - A structure created for speeding up database queries

Vendors table in AP Database

AP – Account Payable

Primary key   **Columns**

	VENDOR_ID	VENDOR_NAME	VENDOR_ADDRESS1	VENDOR_ADDRESS2	VENDOR_CITY
1	1	US Postal Service	Attn: Supt. Window Services	PO Box 7005	Madison
2	2	National Information Data Ctr	PO Box 96621	NULL	Washington
3	3	Register of Copyrights	Library Of Congress	NULL	Washington
4	4	Jobtrak	1990 Westwood Blvd Ste 260	NULL	Los Angeles
5	5	Newbrige Book Clubs	3000 Cindel Drive	NULL	Washington
6	6	California Chamber Of Commerce	3255 Ramos Cir	NULL	Sacramento
7	7	Towne Advertiser's Mailing Svcs	Kevin Minder	3441 W Macarthur Blvd	Santa Ana
8	8	BFI Industries	PO Box 9369	NULL	Fresno
9	9	Pacific Gas & Electric	Box 52001	NULL	San Francisco
10	10	Robbins Mobile Lock And Key	4669 N Fresno	NULL	Fresno
11	11	Bill Marvin Electric Inc	4583 E Home	NULL	Fresno
12	12	City Of Fresno	PO Box 2069	NULL	Fresno
13	13	Golden Eagle Insurance Co	PO Box 85826	NULL	San Diego
14	14	Expedata Inc	4420 N. First Street, Suite 108	NULL	Fresno

Rows

Basic Terms

- Foreign Key
    - Used to relate tables in a relational database
    - Consists of one or multiple columns in a table that refer to the primary key in another table
        - Refer means that values match
- Relationships between tables
    - One-to-Many
        - Most common
    - One-to-one
    - Many-to-many

Relationship between tables Vendors & Invoices