Introduction to SQL

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What is SQL?

an abbreviation for Structured Query Language.

nerally pronounced "Sequel"

a unified language for... defining, querying, modi

ntrolling the data in a Relational Database.

SQL Standards

a *standard*, not a software product

ercial institutions now lead the standard by extend
meet the needs of business.

ain commercial database management systems (D
ustry today are: Oracle (MySQL), Sybase, Micros

Relational Database

s a Relational Database Management System (RD

ata is stored in Tables (i.e. Relations)

-like format, similar to a spreadsheet)

ogical representation of data is separate from its p

ge

high-level language is provided …

structuring, querying, and changing information.

urse, is SQL

What is RDBMS? - cont.

rts the concept of NULL values

es Mechanisms for Integrity, Recovery, Authoriza
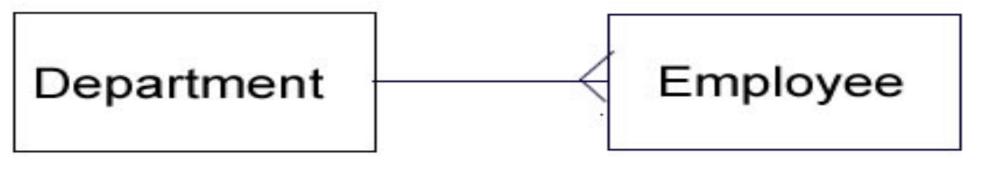ansactions

What are Tables?

...ave Rows and Columns

(...preadsheets with rows & columns)

...d	Last Name	First Name	Office Location	Phone ext.
	Perry	Steve	B07	2345
	Smith	Jane	B07	5432
	Jones	Judy	C12	3289
	Pitts	Calvin	C12	7320

What is a Database

of Related Tables is called a Database

are separate, but equal in that...

have no Hierarchical Ranking

have inherent relationship to each other

can create relationships

```
┌─────────────────┐                    ┌─────────────────┐
│   Department    │────────────────<───│    Employee     │
└─────────────────┘                    └─────────────────┘
```

What is an Entity?

ty is a person, place, or thing for which you wish to hol
tion

is a collection of separate occurrences of an Entity

he "Employee" table contains information about indivi
byees

e Characteristics are stored for each Occurrence of an E

An individual employee has a name, address, phone nun

Example Table

Last Name	City
Perry	San Diego
Smith	Los Angeles
Jones	Los Angeles

ove table "Last Name" and "City" are the columns

ferent person and their represent a row of data

Primary Key

ow is uniquely identified using the Primary Key.

imary Key is defined as any Column (or combinat

s) that can be used to uniquely identify a particula

Data Manipulation Statements

SELECT statement displays information you want the database

INSERT statement allow you to add rows to the d

UPDATE statement allows you to change existing mation

DELETE statement deletes rows of data

Example Primary Key

Last Name	City
Perry	San Diego
Smith	Los Angeles
Jones	Los Angeles

bove example the Last Name column acts as the P

ote: names are not usually a good choice, but this

)

Values

can be determined by the intersection of the Colu

w identified by the Primary Key.

: If I wanted to know where "Perry" lives I need

ut the Primary Key value "Perry" and the City col

Last Name	City
Perry	San Diego
Smith	Los Angeles
Jones	Los Angeles

SQL is a High-Level Language

ements can logically be broken in to three high-le

Manipulation   DML

can query and update the data

Definition   DDL

defines the objects in a database

dministration   DCL

controls access to the data

Data Definition   Statements

EATE statement allows you create tables, views, and indexes

OP statement allows you to remove tables, views, and indexes

End