MySQL Database Unit 01 – Intro to MySQL

Chapters 01. 02 (Download Instructions)

**CLIENT-SERVER SYSTEMS:**

SERVER: stores files & databases of the system; communicates w/ and provides services to clients

* Can be a Simple: high-powder PC; Midrange System (IBMx, Unix) or Mainframe system
* Enterprise System: consists of multiple systems, networks, & spread over long distance

SOFTWARE COMPONENTS:

* Database Management System: ( DBMS ) manages databases stored on the server

ex: MYSQL, Microsoft SQL Server

* Application Software: helps user perform useful work; uses data stored on the server by using a:

Data Access API (Application Programming Interface)

\*Application Software uses:

Data Access API, which uses:

A database driver to communicate with the DB\*

SQL (Structured Query Language): standard language that lets any application communicate w/ any database

* Client communicates w/ server via queries

Relational Database: data is stored in tables

* Table: modeled after a real-world entity
* Column: some attribute of the entity
* Row: contains a set of values for a single instance

Primary Key:

Unique Key:

Index:

How tables are related: one-to-many most common relationship

* Foreign Key: column(s) in a table that refer to a primary key in another table

Enforces *referential integrity*

How columns are defined: define = assigning properties

* Most critical -> **data type**
* Other properties: null, default, auto increment

ER / EER diagrams: show how tables in a DB are defined and related

Other SQL based Relational DBMS’s:

* Oracle
* DB2
* SQL Server
* MySQL

\*\*Many developers consider Z/OS & Unix to be more stable and secure than Windows

SQL Statements: (provided by MySQL) Used to manipulate data in a DB or work w/ DB objects

* DML statements -> MySQL programmers
* DDL statements-> DB administrators

\*\*This book teaches how to use SQL from within the MySQL environment

Verses How to use SQL from an application program:

* A lot involved; most application programmers use a framework that makes it easier to execute statements against a DB
* Can create their own framework by writing utility classes & data access classes OR
* Can use an existing framework that has the classes needed