SQL

Relational Databases that use indexes to save data access time.

Structured Query Language, - Conevend from National Institute of Technology .

- Create / inset
- Read/ select
- update
- Delete

Database, tuples(rows) , attributes, relation(contains tuples and attributes)

-Use first row as metadata- scheme, what kind of data, what it should be,

- Database systems - Oracle, MySQL, SqlServer... other PostgreSQL, SQLite , HSQL
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BASIC SQL Operations:

browser, webserver, database server.

to access server from command line :: pass: root
/Applications/MAMP/Library/bin/mysql -u root -p

phpMyadmin(Browser) , mysql(Command Line) .

at command line CREATE DATABASE People
DEFAULT CHARACTER SET utf8; — to create database,
CREATE TABLE Users(
name VARCHAR(128),
email VARCHAR(128)) ;

$use People;
$ describe users ;

INSERT INTO Users (name, email) VALUES('cheuck', 'check@gmail.com') ;
INSERT INTO Users (name, email) VALUES('ram', 'ram@gmal.com') ;
INSERT INTO Users (name, email) VALUES('hulu', 'hulu@gmail.com') ;

DELETE FROM Users WHERE email= 'ted@umich.edu' (like a loop and if

statement all in one)

UPDATE - allow updating with a WHERE clause.

UPDATE Users SET name = ‘Char;es’ WEHRE email =

SELECT * FROM Users WHERE . — select = read columns ,

Select * from users ORDER BY
LIKE ‘%e%’ - characters before and after,

DESC,

SELCT COUNT(*) from Users - count the total number of rows.

CHAR - Allocates given space, faster fro smaller space where length is know

VARCHAR - allocate space depending on data length .

TINYTEXT - 0-255 characters.
TEXT - 65k characters

MEDIUMTEXT - 16 M

LONGTEXT - 4G

BYTE, n to 255 bytes
VARBINARY - upto 65k bytes,

Strore Small pictures, binary objects.
TINYBLOB -
BLOB - unto
MEDIUMBLOB - upto 16 M
LONGBLOB - upt 4g

IntegersL
TINYINT - -128,128
SMALLINT - -32768 - + 32768
INT - 2 bil
BIGINT - large

FLOAT - 7 digits of accuracy
DOUBLE - 14 digits of accuracy

DATES
TIMESTAMP - since 1970
DATETIME - any date hours and min
DATE
TIME -
NOW() - built in

Database Keys and Indexes:
AUTO_INCREMENT - supply if not there goes up from 1.
INT UNSIGNED NOT NULL AUTO_INCREMENT,
PRIMARY KEY (user_id) - going to use this a lot, have super fast access.
INDEX (email) - gonna use WHERE clause on this a LOT.
ALTER TABLE Users ADD INDEX(email) USING BTREE ;

- if String B-Tre otherwise Hash,

{look up MYSQL built in functions for cool stuff }

Hash and tree indexes - B-TREE index(small amount of data that store info about a lot of data — good for sorted kind of materials.) .
primary key super fast for integer fields, index for prefix index.

hashes - algorithm or subroutine to map large datasets to smaller datasets called keys, values returned called hash values. used to accelerate table lookup

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Relational Database Design:
creating a network
build data model from the application
find core objects and what to put in what table, things that belong in which table.

1. look at the columns you have to make.
2. pick how many tables and which tables to pool together.

table -
lines -
many to many - many to one-