Getting Started

- Open a web browser
 - https://64.59.233.234/phpmyadmin

- Open two ssh sessions to 64.59.233.234
 - Putty on Windows

Database web interface

- At least 4 Web pages
 - at least one that allows (some) users to insert data
 - at least three predefined queries
 - click a button/link and run an existing query
 - at least three flexible/free form queries
 - allow the user to choose options

Advanced SQL

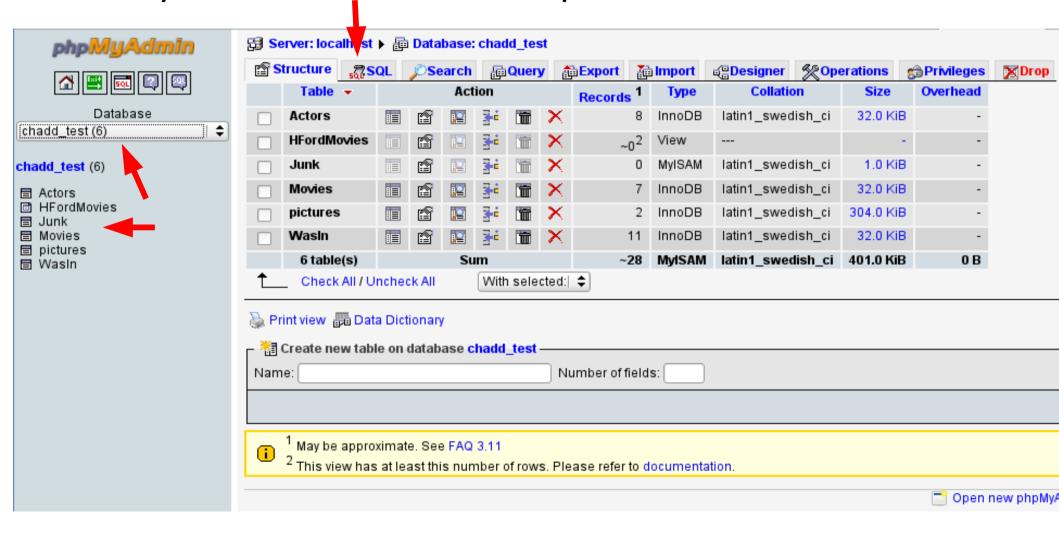
Oct 28, 2009

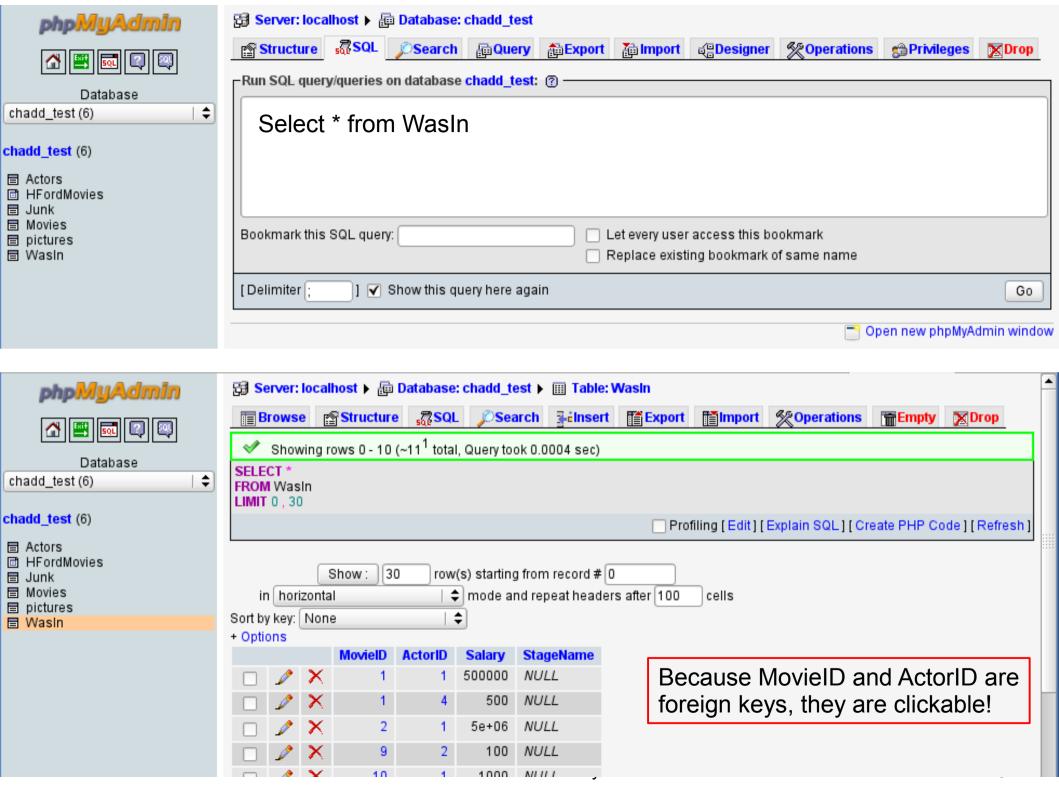
http://dev.mysql.com/doc/refman/5.1/en/index.html

phpMyAdmin

https://64.59.233.234/phpmyadmin/

Only available from on campus





Text matching

SELECT *

FROM Actors

WHERE LastName LIKE 'M%'

% is a wild card character

SELECT *

FROM Actors

WHERE FirstName LIKE '%0%'

Control Flow

```
IF( condition, trueValue, falseValue)
```

```
SELECT ActorID, IF( salary>1000, 1, 0)
FROM WasIn;
```

```
IFNULL(Value, returnIfValueIsNULL)
```

```
SELECT ActorID, IFNULL(StageName, "NONAME")
FROM WasIn;
```

There is also a case (switch) statement

GROUP BY and HAVING

- Allows SQL to filter on calculated/aggregate values
- Similar to WHERE
- must be last

```
SELECT ActorID, avg(salary) as AvgSalary
FROM WasIn
WHERE salary > 0
GROUP BY ActorID
HAVING AvgSalary > 10000;
```

Bulk Load / Backup a table

```
SELECT *
FROM Actors
INTO OUTFILE '/tmp/Actors_PUNetID.txt';
```

The file path must be WORLD WRITEABLE

```
LOAD DATA INFILE '/tmp/Actors_PUNetID.txt'
INTO TABLE Actors2;
```

- Actors2 must already exist
- File needs to be tab-delimited
- Can optionally be comma-delimited

Backup Your Database!

@db:~> mysqldump PUNetID_BigProject -u PUNetID -p -S
/opt/lampp/var/mysql/mysql.sock > backup_BigProject.sql

Database Name How to connect to MySQL Output file

To see what this file looks like:

@db:~> cat backup_BigProject.sql | less

Copy to Zeus for safe keeping!

@db:~> scp backup_BigProject.sql PUNetID@zeus:



Don't forget the colon!

Blob: Binary Data

BLOB

 Binary data can be images, sounds, video, OpenOffice documents, executable files, etc.

TEXT

Long chunk of text

DataType	Max Size (Bytes)
TINYBLOB, TINYTEXT	2 ⁸
BLOB, TEXT	2 ¹⁶
MEDIUMBLOB, MEDIUMTEXT	2 ²⁴
LONGBLOB, LONGTEXT	2 ³²

Binary Data

```
CREATE TABLE pictures (
    PicID int(11) NOT NULL auto_increment,
    image mediumblob NOT NULL,
    type varchar(255) NOT NULL,
    PRIMARY KEY (`PicID`)) ENGINE=InnoDB;
```

For binary data, we need to track the type of data we have stored.

For data to display on the web, store the MIME type

Multipurpose Internet Mail Extensions

```
image/gif image/png
```

INSERT Binary Data

```
INSERT INTO pictures (PicID, image, type)
VALUES (null,
LOAD_FILE('/home/chadd/image.png'),
"mime/png");
```

- From the command line you must specify the entire path to the file
- The file must be world readable

```
chadd@db:~> chmod o+r image.png
chadd@db:~> ls /home/chadd/image.png
-rw-r--r-- /home/chadd/image.png
```

Practice

- Find all agents whose **maximum down payment** for a sale they have been involved with is greater than 10% of the **maximum total price** for a sale they have been involved with.
- List all Movie titles. For each movie, display the MovieID if Harrison Ford is in it and "Not A HF Movie" otherwise. The column headers should be as shown.

Title	HFOrNot
Star Wars	1
Indiana Jones and the Raiders of the Lost Ark	2
Plan 9 From Outer Space	Not a HF Movie
American Graffiti	10
The Good, the Bad, and the Ugly	Not a HF Movie
The Fugitive	12
Clear and Present Danger	13

Practice

 Display each movie title and the string "Before I was Born" or "After I was born" to show if the movie was released before or after the day you were born. The column headers should be as shown.

Title	BornBeforeOrAfter
Star Wars	After I was born
Indiana Jones and the Raiders of the Lost Ark	After I was born
Plan 9 From Outer Space	Before I was born
American Graffiti	Before I was born
The Good, the Bad, and the Ugly	Before I was born
The Fugitive	After I was born
Clear and Present Danger	After I was born

Practice

- Display all ZoneTypes that are listed for 3 or more Parcels
- Display all Parcels whose asking price is above the average asking price
- Find each Parcel that is on a Street
- Backup your Movie database and copy it to Zeus!