Introduction to MySQL

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Coalition for Queens

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Goals

- Write and execute queries
- Understand a database schema
- Design a MySQL database
- Analyze queries for performance

Class structure - Session I

- Overview and intro to MySQL and relational databases
- Introduce the dataset we'll be exploring
- Go over tools we'll be using

Class Structure - Session II

- Explore our dataset in more detail
- Start writing queries!
    - The SELECT query
    - The INSERT query

Class Structure - Session III

- Introduce advanced queries
    - Introduce JOIN and GROUP BY operations
    - Introduce table INDICES
- Explore our dataset using our new queries

Class Structure - Session IV

- Discuss table design
- Create some tables
- Go over ways to analyze query performance
- Brief overview of the system tables

What is MySQL

- Open source, relational database
- Who uses it?
  - Facebook, LinkedIn, Google, Twitter

Why is it useful?

- Easily represent structured data and their relationships
- Can handle large amounts of data
  - And complicated queries
- Robust, industry-tested and proven

What’s a database

- “Organized collection of data”

- How’s it different from a spreadsheet?

Relational databases

- Set of tables
- A table consists of columns and rows
- Each column has a name and a type
- Each row is a record

Column types

Type	Description
tinyint	
int	
bigint	
decimal	
float	
date	
time	
datetime	
varchar	
text	

Table example

id	category_id	color	price
1	1	ORANGE	100.00
2	1	RED	200.00
3	2	BLUE	150.00
4	3	GREEN	125.00

Our dataset

- Fantasy football data for the 2014-2015 season
  - Retrieved from Yahoo
  - Projections by player and week
- Tables
  - players
  - teams
  - matchups
  - stats

Tools

- MySQL
  - https://dev.mysql.com/downloads/mysql/
- MySQL client
  - Windows + OS X: MySQL Workbench:
    - https://dev.mysql.com/downloads/workbench/
  - OS X: Sequel Pro:
    - http://www.sequelpro.com/

Loading the dataset

- Download the ffl_data.sql file
  - https://github.com/dangoldin/mysql-class
- Import it using the following command
  - ffl_data.sql > mysql

Let’s try some queries

- SELECT * FROM players;
- SELECT * FROM teams;
- SELECT * FROM matchups;