

HENRY QUINN

RELATIONAL DATABASES

SCHOOL & WORK

- ▶ Champlain College - 2015
 - ▶ B.S. Computer Networking & Information Security
- ▶ U.S. District Court, District of Connecticut
 - ▶ Programmer, Analyst, Database Administrator
- ▶ LearnToProgram.TV
 - ▶ Instructor, Mentor

PLAN FOR TODAY

- ▶ Conceptual Topics
 - ▶ Relational Databases
- ▶ Go Over Tools
 - ▶ MySQL, SQLBuddy, PHP, MySQLi
- ▶ Demo
 - ▶ Fantasy Football League Name List Tool Thing

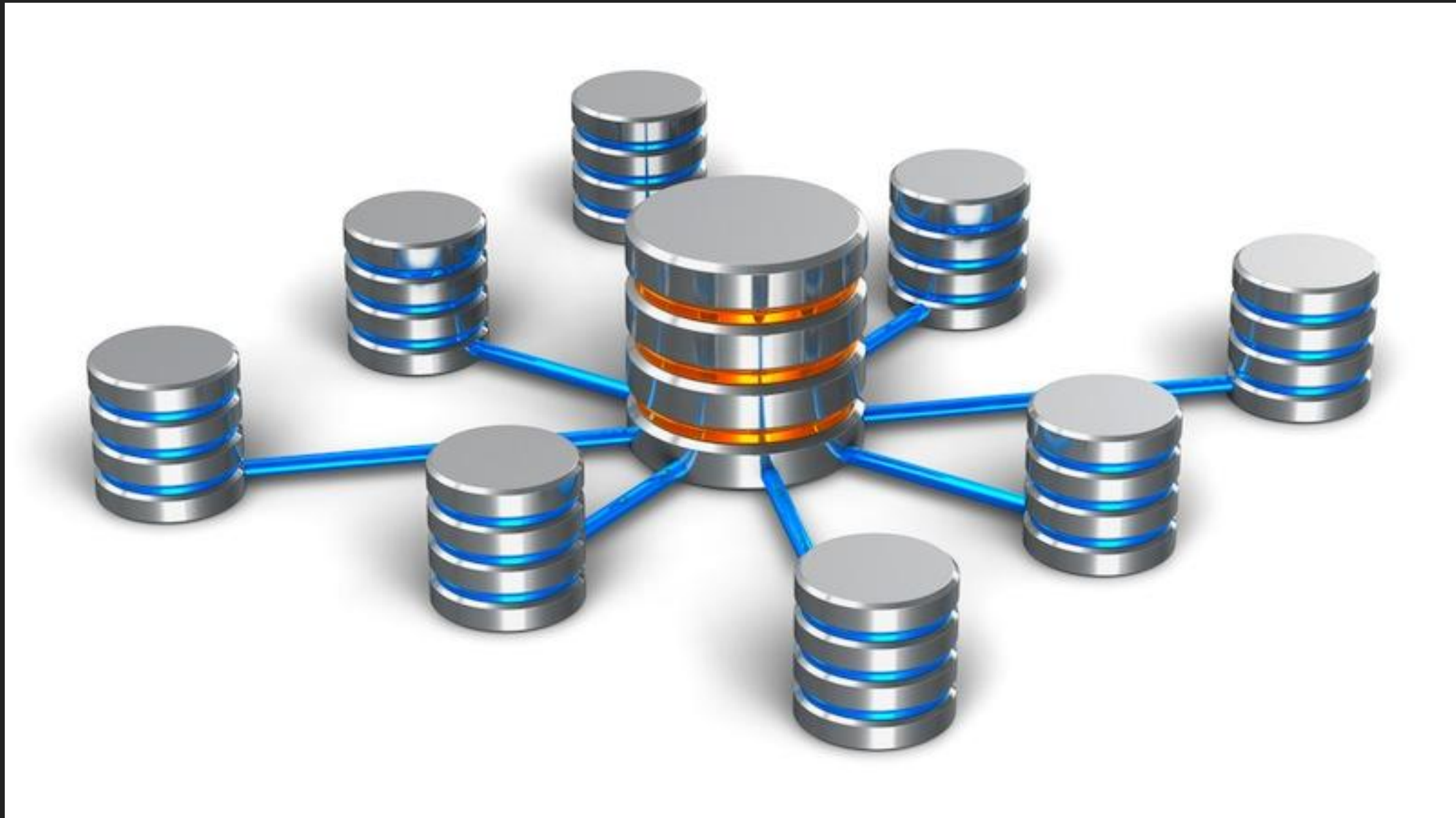
WHY DATABASES?

- ▶ Static Resume Site
 - ▶ Just meant to display data. Doesn't really change.
- ▶ Evernote (Notes, To-Do's, Browser Bookmarks)
 - ▶ Data you input needs to follow you to different devices.
- ▶ Facebook
 - ▶ Moving more terabytes of data than we can fathom.

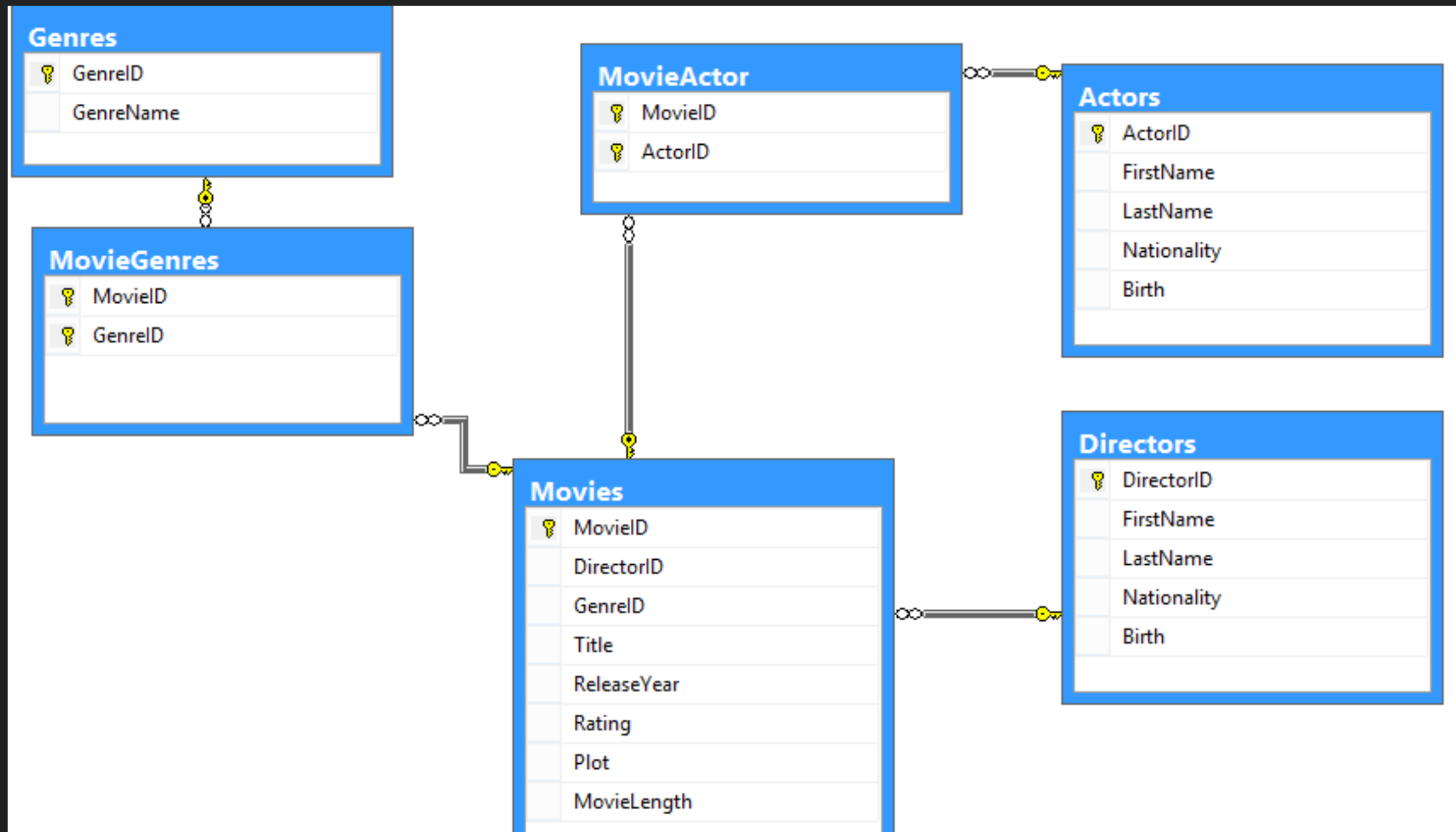
JUST A CENTRAL LOCATION TO STORE DATA



A DATABASE SERVER CAN HOLD SEVERAL DATABASES



A DATABASE CAN HOLD SEVERAL TABLES



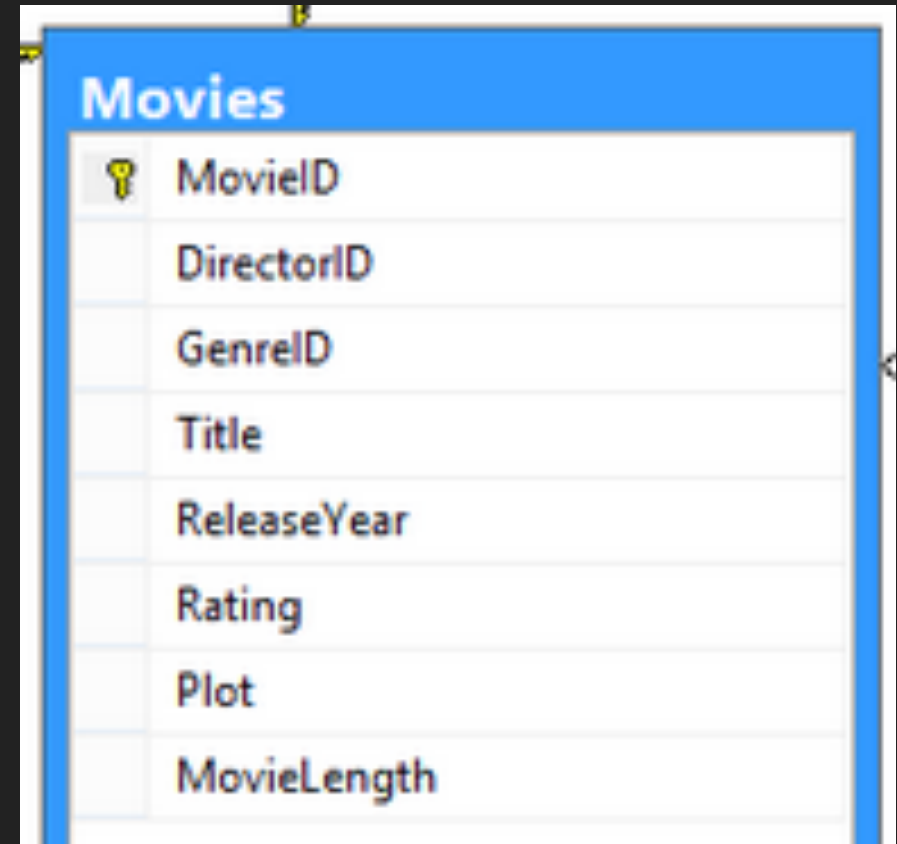
TABLES ARE MADE OF ROWS

- ▶ MovieID: 957288
- ▶ DirectorID: 0135
- ▶ GenreID: 04
- ▶ Title: The Prestige
- ▶ ReleaseYear: 2006
- ▶ Rating: 75
- ▶ Plot: 101 Dead Hugh Jackmans
- ▶ MovieLength: 130 minutes

Movies	
🔑	MovieID
	DirectorID
	GenreID
	Title
	ReleaseYear
	Rating
	Plot
	MovieLength

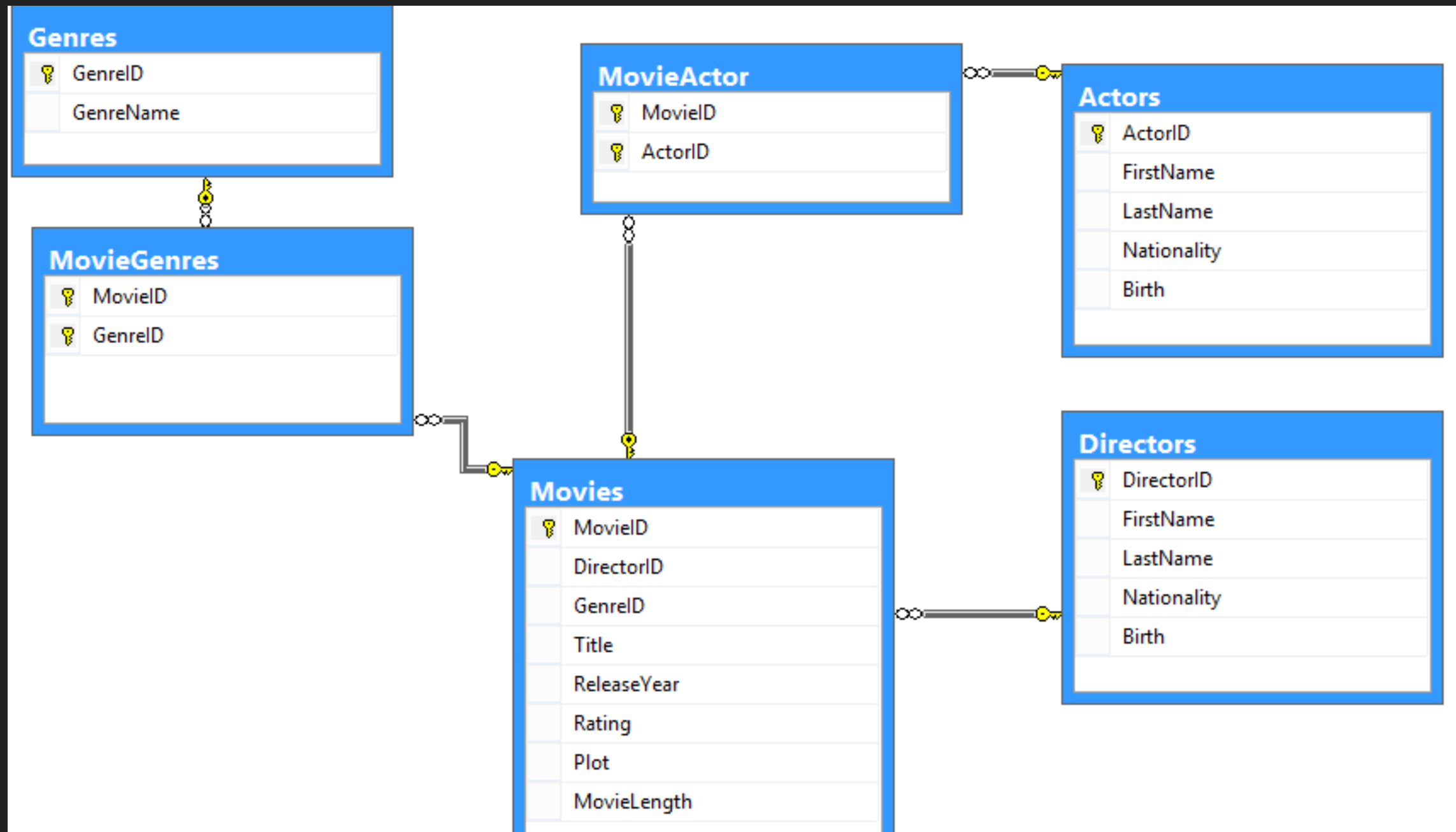
DATA CAN HAVE DESIGNATED TYPES AND LENGTHS

- ▶ movie_ID INT(6): 957288
- ▶ director_ID INT(4): 0135
- ▶ genre_ID INT(2): 04
- ▶ title VARCHAR(30): "The Prestige"
- ▶ release_year VARCHAR(4): "2006"
- ▶ rating INT(3): 75
- ▶ plot VARCHAR(256): "101 Dead Hugh Jackmans."
- ▶ movie_length INT(3): 130



🔑	MovieID
	DirectorID
	GenreID
	Title
	ReleaseYear
	Rating
	Plot
	MovieLength

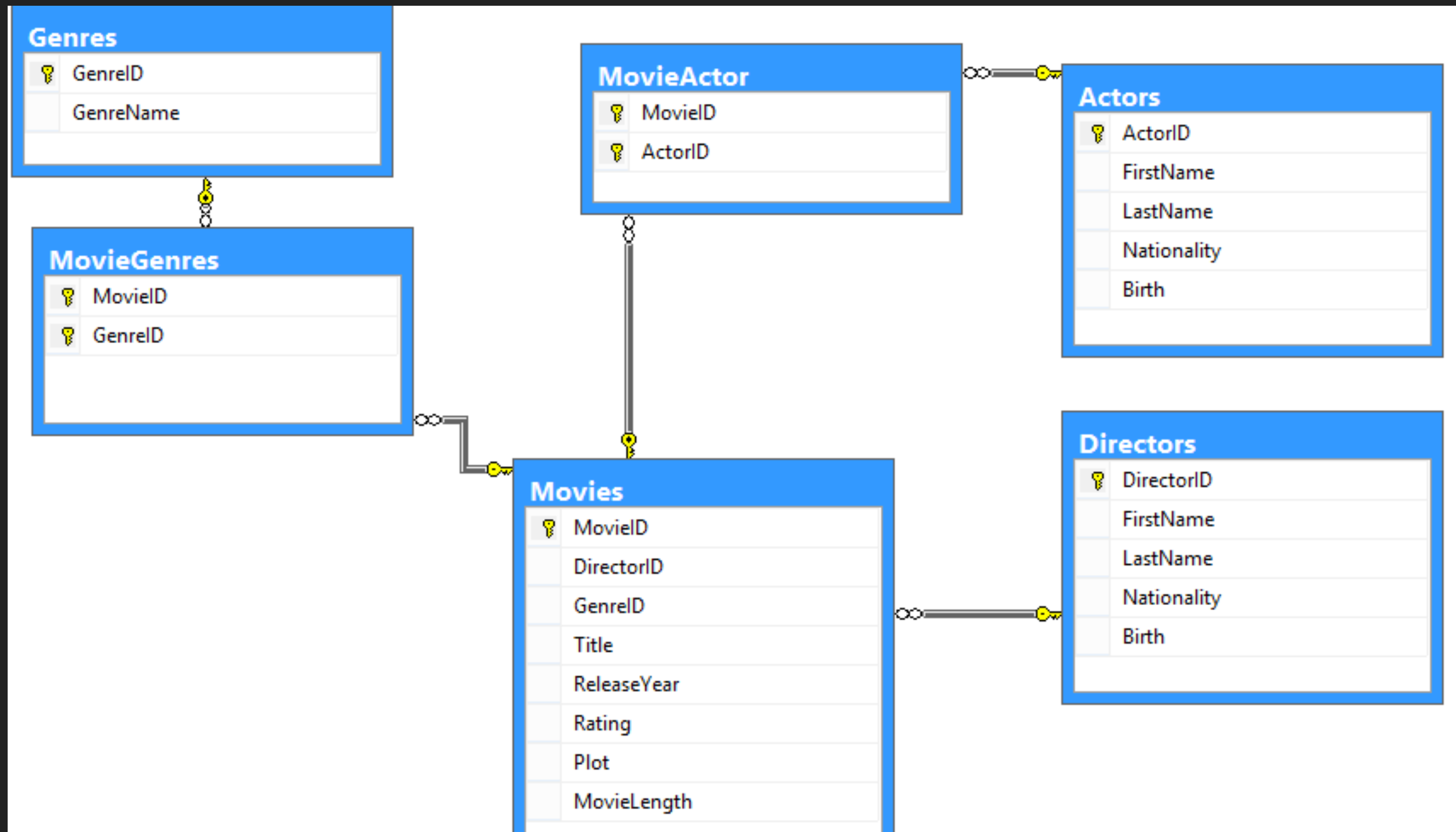
A VERY ORGANIZED WAY TO STORE AND RETRIEVE DATA



SHORT DEMONSTRATION

- ▶ Several Public Data Sets To Work With
- ▶ World Database
 - ▶ Find cities in the United States with a population over 100,000 and the word "New" in their name.
- ▶ Employee Database
 - ▶ Get a list of what cities all employees work in.

A VERY ORGANIZED WAY TO STORE AND RETRIEVE DATA



MYSQL / SQLBUDDY

- ▶ MySQL is a relational database management system (RDBMS)
 - ▶ You can install it on all kinds of systems, and you can expect commands, user permissions, behavior to act the same.
 - ▶ Comes with a command line utility to interact with your database server and whatever databases it hosts.
- ▶ SQLBuddy
 - ▶ Is a web based GUI tool that you can use to interact with your MySQL install rather than using the CLI.
 - ▶ This is just a web app that you throw into /var/www/html/ (or wherever) and point your browser to.

PHP / MYSQLI

- ▶ PHP is an immensely popular back end (server side) language that's used to process data for HTML to display (among other things).
- ▶ When building web applications (LAMP stack) you can use PHP to pull data out of MySQL, process it, and then pass it through a web app to display in a browser.
- ▶ MySQLi is a database driver to be used in PHP apps to make working with MySQL databases easier. Think of it as a library.

DEMO TIME

- ▶ LeagueNames
 - ▶ My friends and I started a fantasy football league and we needed to think of a name for it. We used a web app to suggest names to pick from at our first draft.
- ▶ LeagueNames Web Page
- ▶ Show How Names Get Added To DB
- ▶ Show How Name List Gets Pulled From DB
- ▶ Use SQLBuddy To Verify

▶ LeagueNames

- ▶ I started a fantasy football league with my friends a couple years ago, and we needed to think of a name for it. I build us a quick web application that let us suggest names to a master list that we could reference at the draft to pick our league name as a group.

▶ LeagueNames Web Page

▶ Show How Names Get Added To DB

▶ Show How Name List Gets Pulled From DB

▶ Use SQLBuddy To Verify

HELPFUL LINKS

- ▶ <https://HenryNeeds.coffee> ||| <https://github.com/QuinnCuatro/LeagueNames>
- ▶ Getting Started With MySQL (All types of systems)
 - ▶ <https://dev.mysql.com/doc/mysql-getting-started/en/>
 - ▶ <http://www.sqlcourse.com/> ||| <http://www.sqlcourse2.com/>
- ▶ PHP MySQLi
 - ▶ <http://php.net/manual/en/book.mysqli.php>
- ▶ GUI Based Database Tools
 - ▶ <http://sqlbuddy.com/> ||| <http://www.dbvis.com/>