

Diploma in Web Development – Part II



Servers & Databases – Week 1

Relational Database Management Systems

Presented by:

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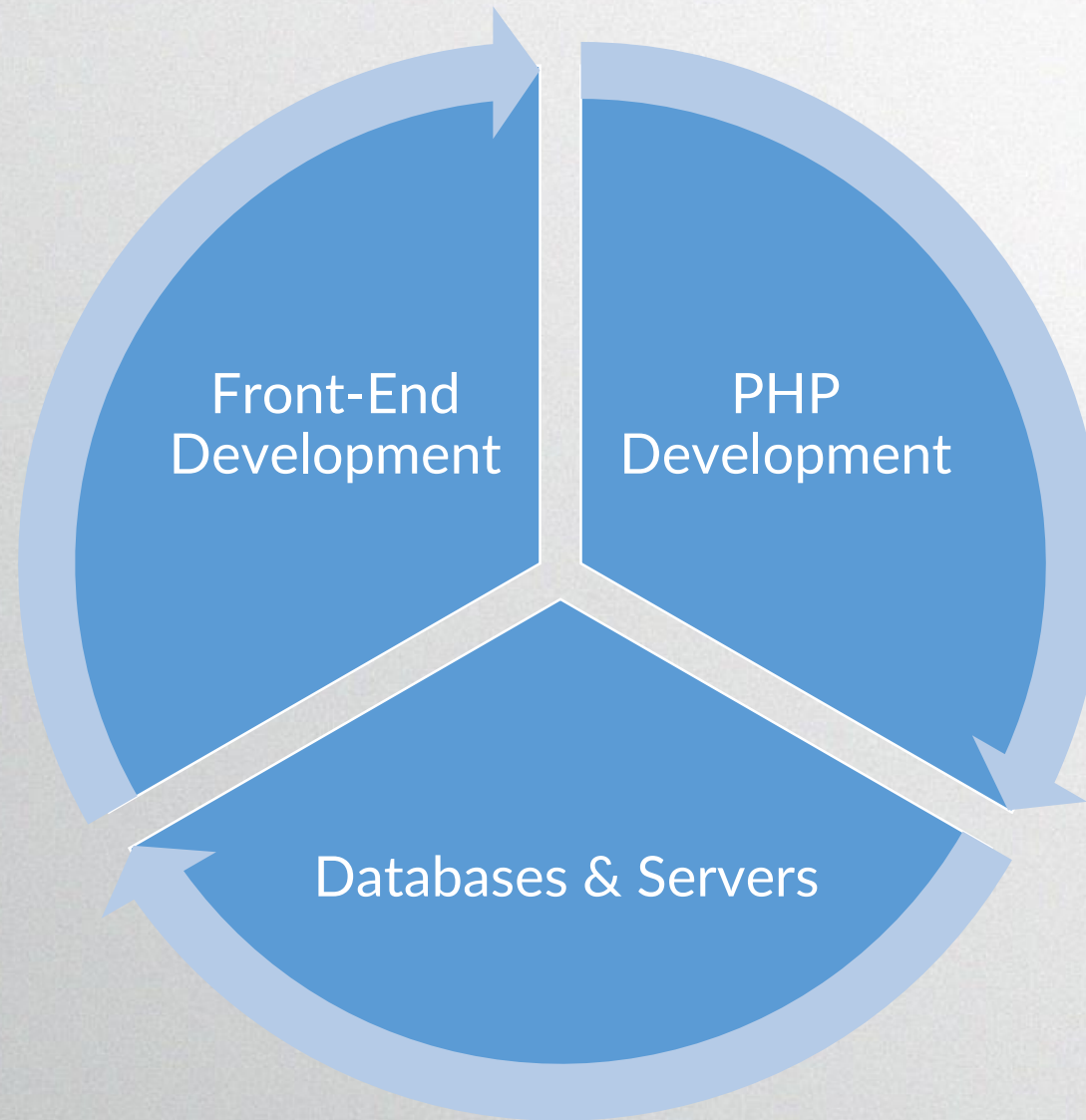
Web Development Educator



Welcome New Students!



Course Overview



Databases & Servers



Relational Database Management Systems

- 1 ➤ How Relational Databases Work
 - Field & Multi-Field Keys
 - Creating a Relational Database
(with phpMyAdmin)

Practical:

- Shawpify: Database Setup



Agenda!



Advanced SQL

- 2 ➤ Reintroducing SQL
 - Introducing CRUD
 - Filtered SQL Queries
 - SQL Functions

Practical:

- Shawpify: Search Queries



Agenda!



Databases & Security

- 3 ➤ Controlling Database Access
 - What is SQL Injection?
 - SQL Injection Demo

Practical:

- Student Request



Server Setup

- 4 ➤ Version Control Systems
- Web Application Structure
- Configuring Apache Servers

Practical:

- Shawpify: Final Touches



Agenda!



Relational Database Management Systems

- How Relational Databases Work
- Field & Multifield Keys
- Creating a Relational Database
(with phpMyAdmin)
- Summary
- Q&A

AGENDA



Let's Begin!



Relational Database Management System



Relational Database Management System

is the most popular persistent storage system in use today, and is based on the relational model

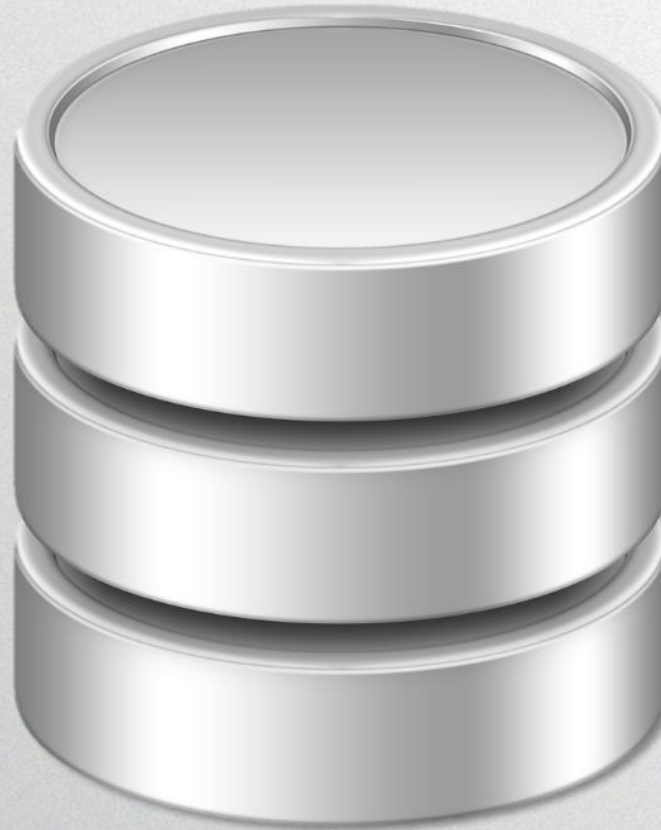
SQL-based databases account for the vast majority of RDBMSes



How Relational Databases Work

Review

Organized storage
of information on
the server



Tables are divided
into columns and
rows

Typical database
can store 2^{32}
records (rows)

(Most) Can be
queried using the
SQL language



How Relational Databases Work

Review



How Relational Databases Work

Table 1

Field1
Field2
Field3

Table 2

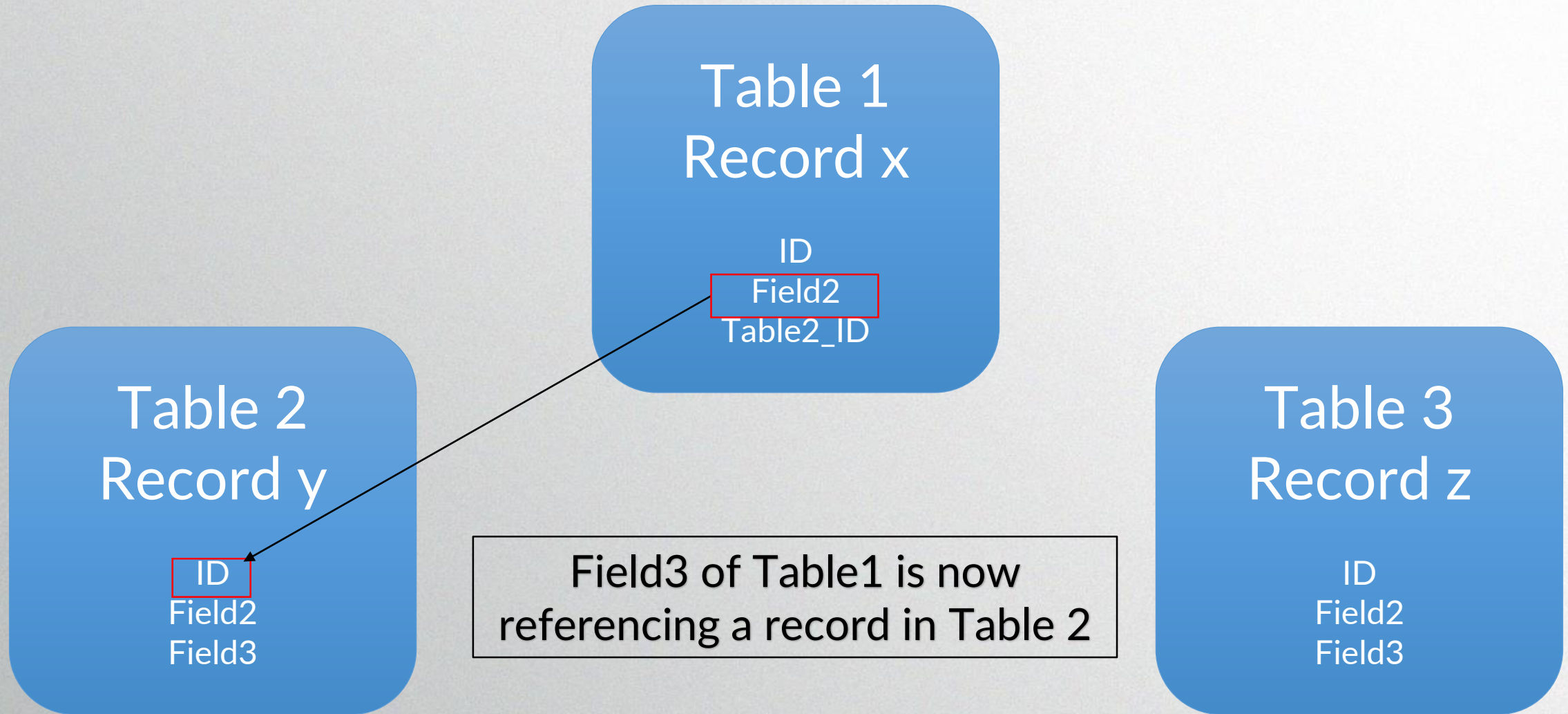
Field1
Field2
Field3

Table 3

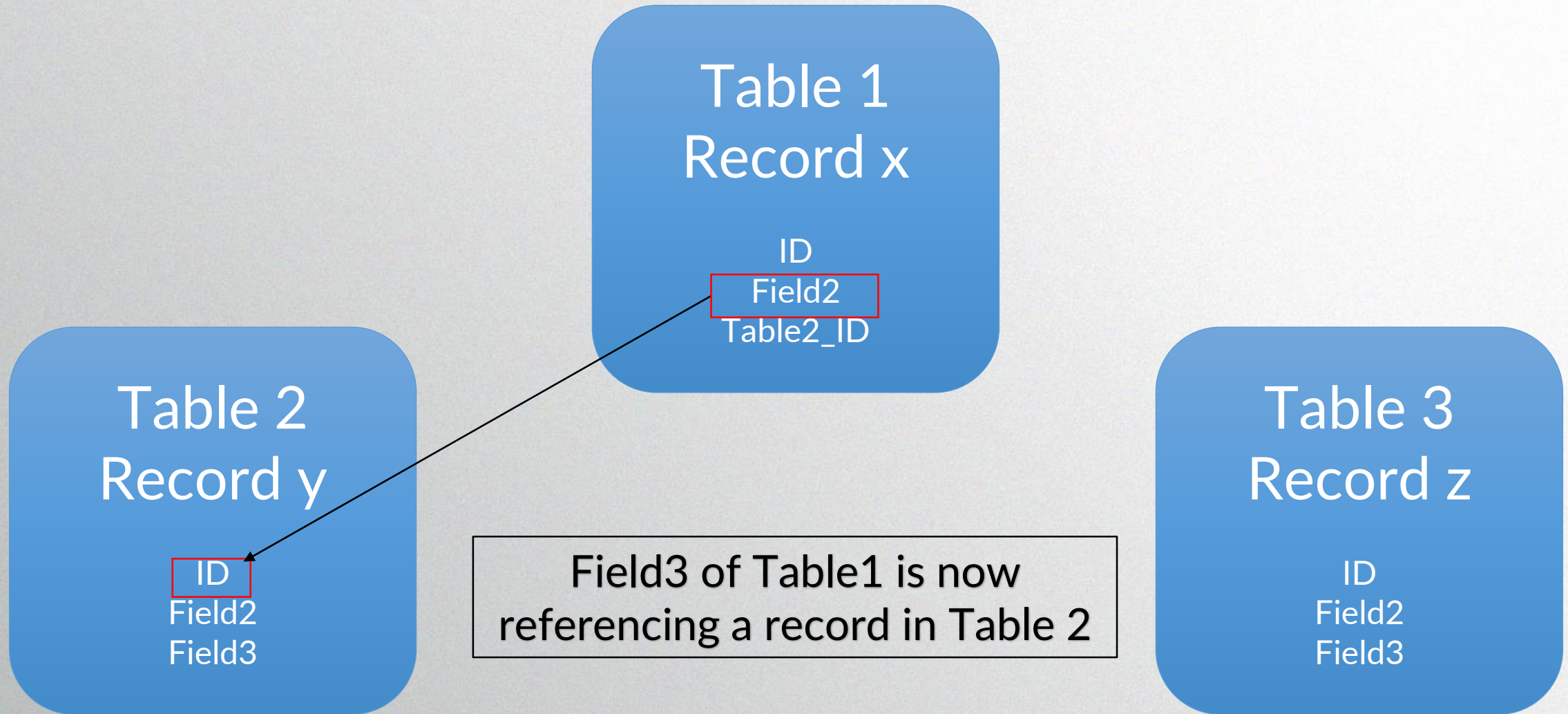
Field1
Field2
Field3



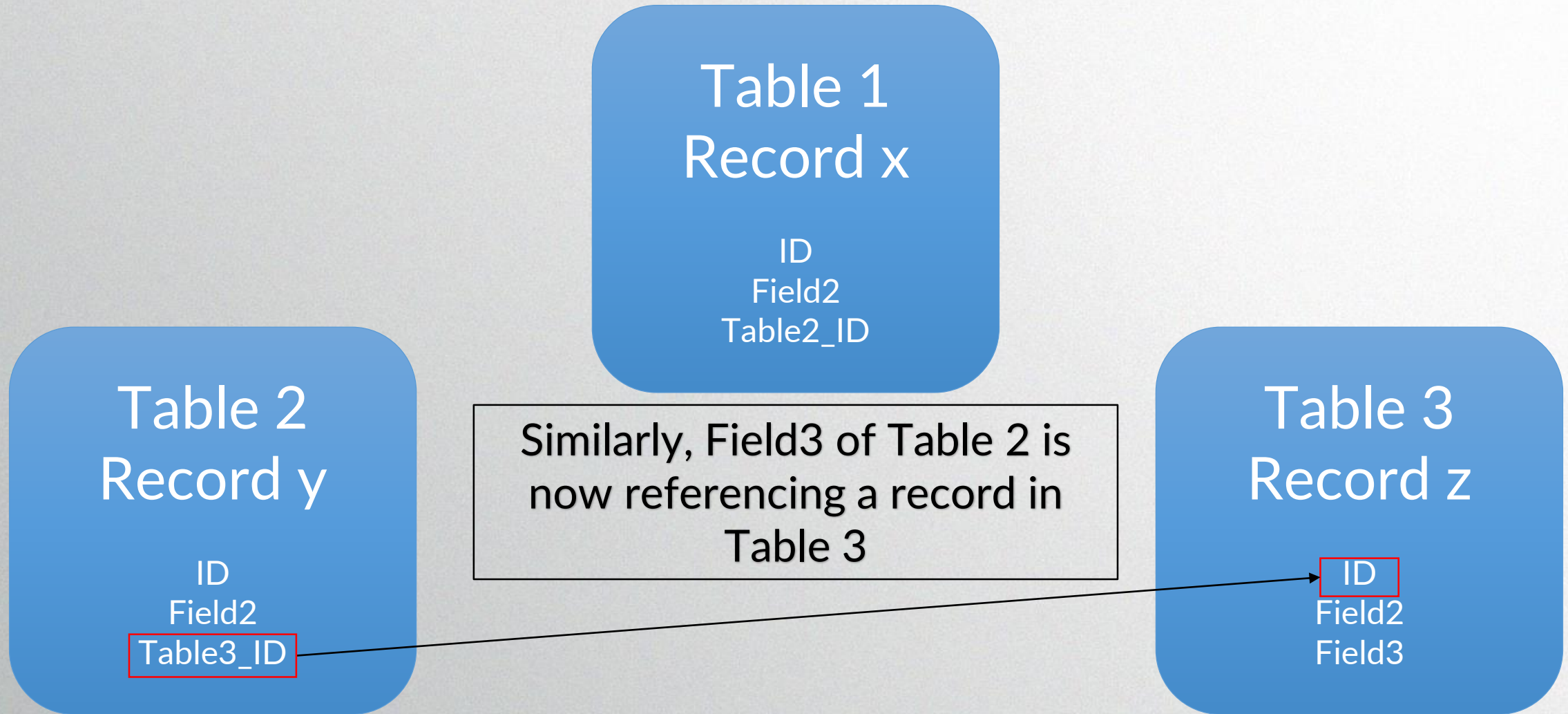
How Relational Databases Work



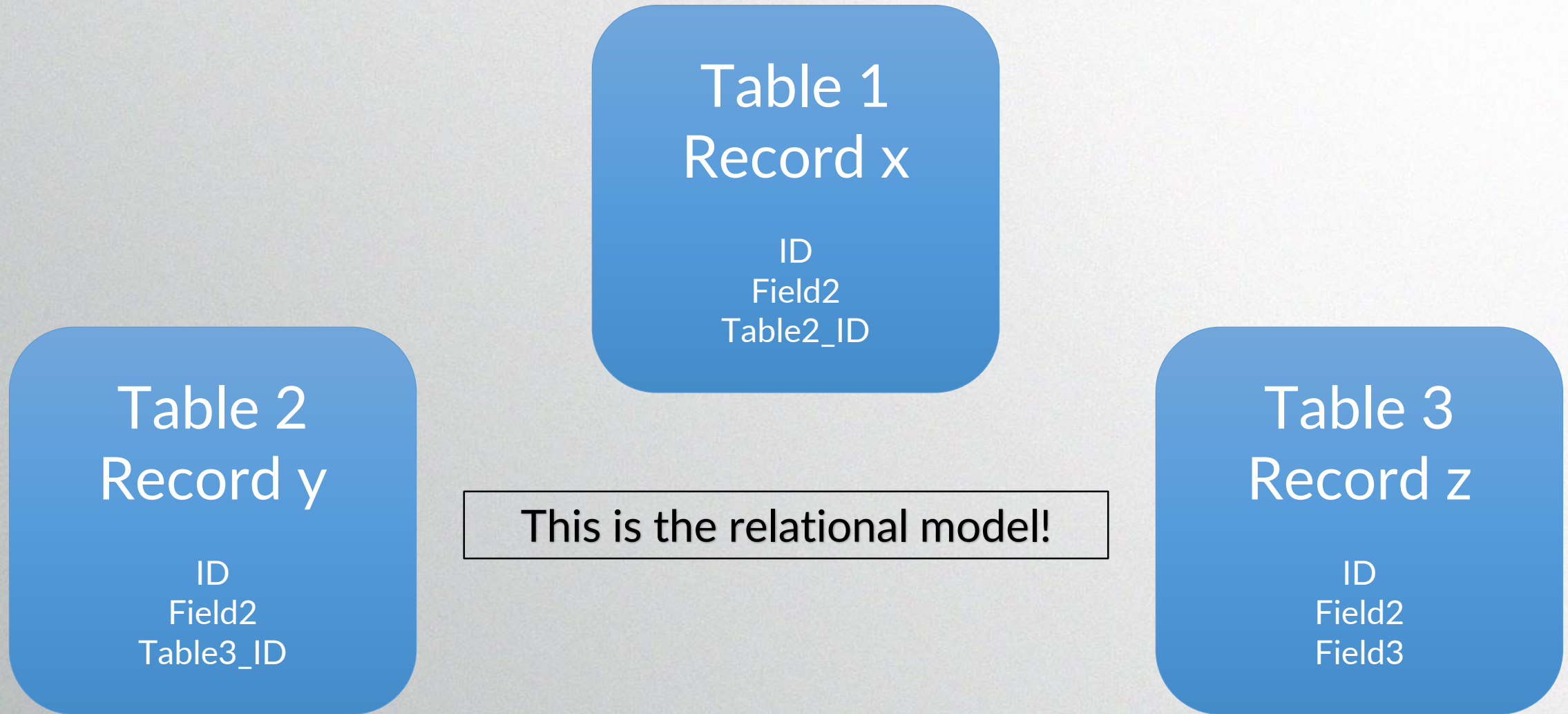
How Relational Databases Work



How Relational Databases Work



How Relational Databases Work



Create a logical web of *interconnected* database tables



Unique Key



Unique Key

is a set of fields in a relational database table that can uniquely identify any given record in that table



Primary Key



Primary Key

is a single field in a relational database table that can uniquely identify any given record in that table

Unique Key fields are commonly integers, with the name “ID”



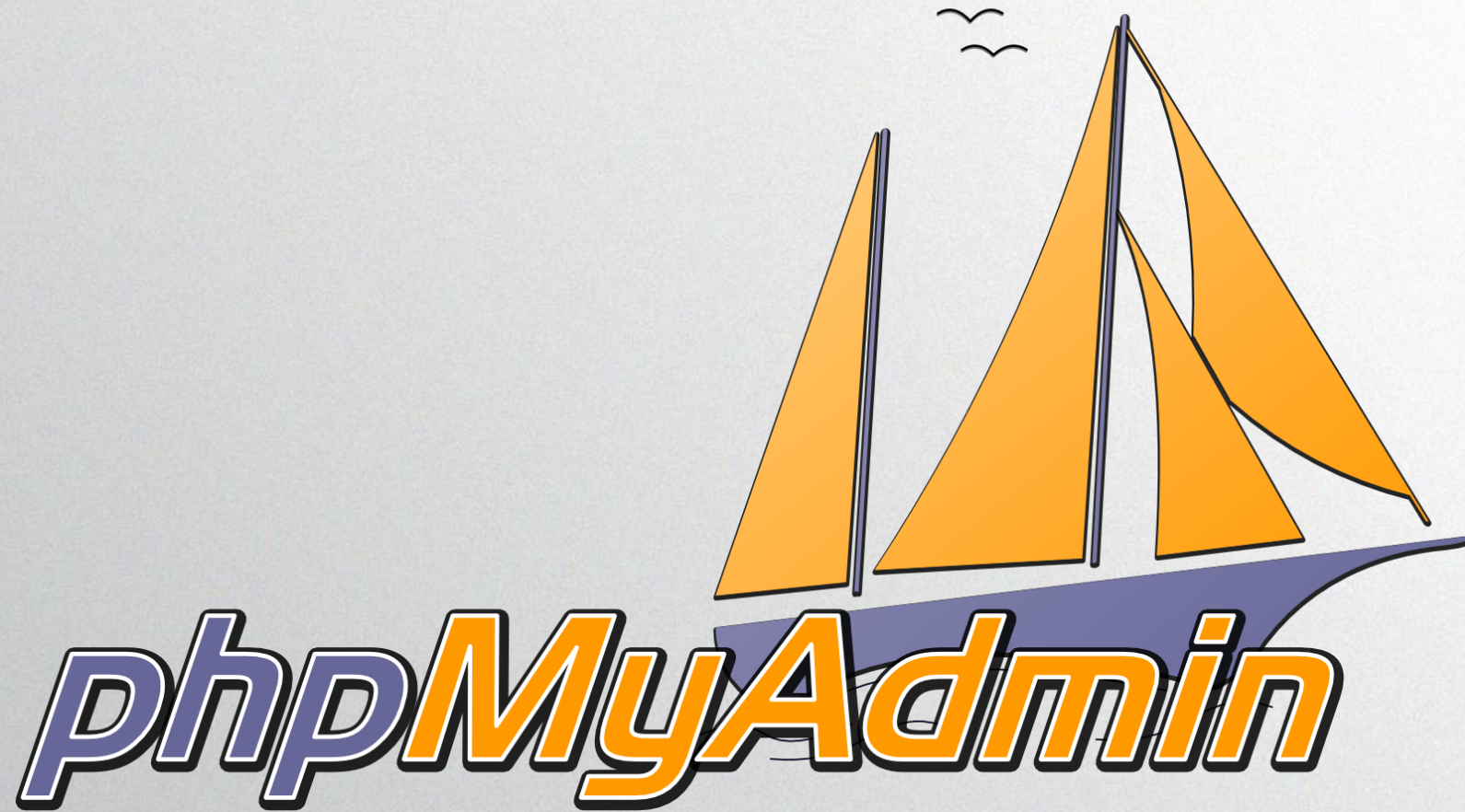
Field & Multi-field Keys

Primary Keys

- **Unique value** for each record
- Special purpose field
- Type of **Unique Key**
- Other tables can reference record using primary key
 - Known as a **Foreign Key**



Creating a Relational Database



Servers & Databases Semester

- The next session is “Advanced SQL”
 - Reintroducing SQL
 - Introducing CRUD
 - Filtered SQL Queries
 - SQL Functions

- Recordings are available within 24 hours after the live webinar
 - Go to www.shawacademy.com and then the Top Right Corner – **Members Area**



Next Lesson is

Advanced SQL

- Learn how SQL can be used to return the data that you want
- You will understand the value of using an **organised persistent storage system** such as a **relational database**



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