Databases, Express Sessions

CS 390 – Web Application Development

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November 15, 2023

Outline

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WIWYT – Databases

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- Scalable, reliable data updates and queries.

WIWYT – Sessions (Recap)

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- Prevents unnecessary / repititive user-inputs.

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There are two main languages we will discuss today: **SQL** and **NoSQL**.

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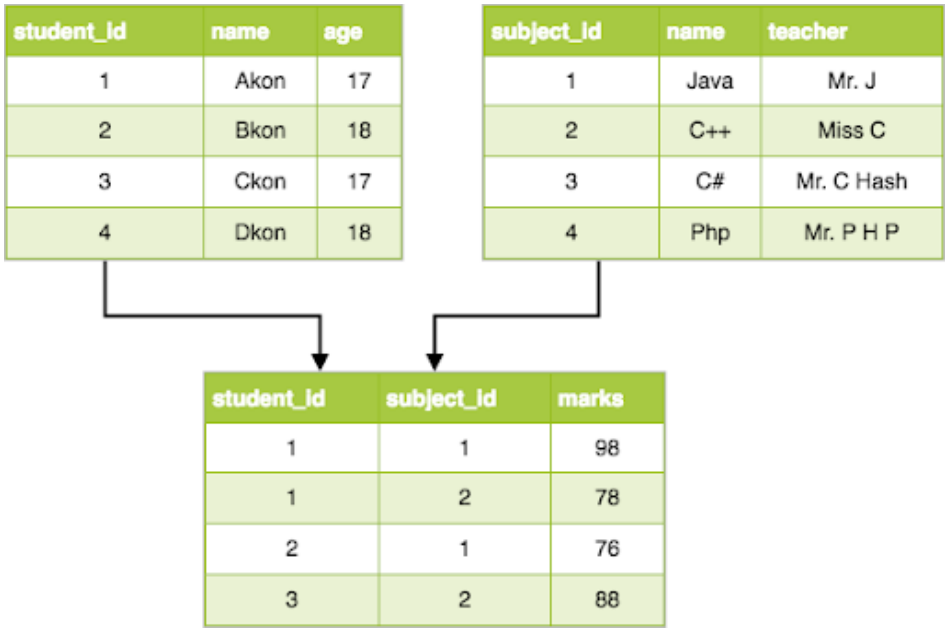
This database is structured to store **relationships between properties**.



student_id	name	age
1	Akon	17
2	Bkon	18
3	Ckon	17
4	Dkon	18

subject_id	name	teacher
1	Java	Mr. J
2	C++	Miss C
3	C#	Mr. C Hash
4	Php	Mr. P H P

student_id	subject_id	marks
1	1	98
1	2	78
2	1	76
3	2	88

MariaDB – Setup

Post installation:

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# mariadb-install-db --user=mysql --basedir=/usr  \
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initializes the database.

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Finally, we setup the user:

```
# mariadb
MariaDB> CREATE USER ‘cs390’@‘localhost’ IDENTIFIED BY  \
‘password’;
MariaDB> GRANT ALL PRIVILEGES ON *.* TO ‘cs390’@‘localhost’;
```

MySQL – Data Operations

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5. **Lists:** `SHOW tables;`

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Important:

Queries made to the server are **asynchronous**, and returned as promises.

Let's Setup an SQL Database! (+ attendance)

If you can view this screen, I am making a mistake.

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NoSQL also has a **flexible schema**. This results in records being localized, making *reads* incredibly fast at scale.

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Mongoose introduces optional schema to correct this.

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This exposes sensitive information; both to the client and malicious actors.

Sessions solve this! The relevant information is stored **server-side**, with an identifier cookie that enables the client-server association.

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We can setup persistence using a **Session Store**. The default implementation of `MemoryStore` includes persistence, but is not meant for production.

It only runs a *single* thread, *leaks* memory, and does *not* scale well.

Instead, we can use **MongoDB** as the session store using `connect-mongo`.

Let's Setup a NoSQL Database!

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Thank you!

Have an awesome rest of your day!

Slides:

`https://cs.purdue.edu/homes/jsetpal/slides/databases.pdf`

If anything's incorrect or unclear, please ping `jsetpal@purdue.edu`
I'll patch it ASAP.

Note:

No class next Monday. Enjoy the Thanksgiving break!