



Contribution ID: 47

Type: **not specified**

Application development with relational and non-relational databases

Tuesday, September 8, 2015 1:00 PM (5 hours)

In this workshop, the students will learn how to use relational and non-relational databases to build multi-threaded applications. The focus of the workshop is to teach efficient, safe, and fault-tolerant principles when dealing with high-volume and high-throughput database scenarios.

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A basic understanding of the following things is required:</br>

- A programming language (preferably Python or any C-like)</br>
- Basic SQL (CREATE, DROP, SELECT, UPDATE, DELETE)</br>
- Linux shell scripting (bash or zsh)</br>

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The course will cover the following three topics:

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- When to use relational databases, and when not</br>

- * Relational primer</br>

- * Non-relational primer</br>

- * How to design the data model</br>

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- Using SQL for fun and profit</br>

- * Query plans and performance analysis</br>

- * Transactional safety in multi-threaded environments</br>

- * How to deal with large amounts of sparse metadata</br>

- * Competitive locking and selection strategies</br>

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- Building a fault-tolerant database application</br>

- * Distributed transactions across relational and non-relational databases</br>

- * SQL injection and forceful breakage</br>

- * Application-level mitigation for unexpected database issues</br>

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Session Classification: Application development with relational and non-relational databases

Track Classification: Big Data