CSCI235 Database Systems

Subject overview

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This presentation is intentionally NOT recorded

CSCI235 Database Systems

Subject overview

Lecturer

Subject contents

Subject outline

Software used

Other important information

Subject motto

Lecturer

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Office hours:

- Tuesday 11.30am - 1.30pm
- Friday 11.30am - 1.30pm

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Subject contents

The subject presents advanced topics in the modern relational database technology and it introduces the new non-relational (NoSQL) database technologies

The relational database technology component of the subject includes:

- database normalization,
- introduction to indexing in relational database systems
- programming of relational database server with stored PL/pgSQL procedures, functions, and triggers
- concurrency control and database recovery techniques
- design and programming of distributed database systems

The relational database component of the subject uses a database management system PostgreSQL

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The non-relational (NoSQL) database technology component of the subject includes:

- a review of non-relational data models such as the key-value data model, document-oriented model, column-family stores, and graph data model,
- new approaches to database design, data distribution, consistency preserving, and transaction processing in distributed and clustered database systems,
- design of NoSQL database (JSON/BSON data model)
- programming of NoSQL database server (data definition, data manipulation, and query languages)
- indexing of NoSQL database
- design and implementation of replication and sharding in NoSQL database

The non-relational (NoSQL) database component of the subject uses a NoSQL database management system MongoDB ver 4.2.2 or MongoDB ver 5.0.5

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Subject outline

Subject outline contains information about:

- Subject organization
- Subject materials
- Attendance requirements
- Assessment
- Student academic consideration policy
- Plagiarism - University's Academic Integrity Policy

You must read the subject outline for CSCI235 !

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Software used

Two PostgreSQL database servers (weeks 1-7):

- host: `db1teach.adeis.uow.edu.au` port: 5432 user name, password and database name send to you over SOLS mail
- host: `db2teach.adeis.uow.edu.au` port: 5432 user name, password and database name send to you over SOLS mail

Virtual machine with `PostgreSQL`

Database clients for both database servers and database clients installed on VM based server:

- Command line client psql
- GUI client pgAadmin 4

Virtual machine with `MongoDB 4.2.8` or `MongoDB 5.0.5` (weeks 8-13)

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Other important information

Make sure that the submissions of your coursework items (implementations of laboratories and assignments) are correct:

- read and follow the submission procedures
- make sure that your submissions do not contain error messages
- make sure that you submit correct files
- make sure that your submission is on time
- Compressed (zipped, rared, etc) files will not be evaluated
- Email submissions will not be evaluated

Evaluation of coursework items (implementations of laboratories and assignments) will not be discussed over email, in all such matters please contact the tutors or a lecturer during laboratory time or lecturer's office hours

Please remember and please apply a principle: it is better to submit a coursework task (lab/assignment) one hour too early than one second too late

Other important information

Laboratory classes supposed to be used for working on the solutions of the coursework tasks

Attendance in the laboratory classes is very important, however, attendance is not compulsory, good news, no need to sign a list :) !

Please do not try to join the face-to-face laboratory class if you are not enrolled in the laboratory class

It is all right to join online laboratory class you are not enrolled in if you have some coursework related questions to ask

Try to solve the problems included in the specifications of laboratory tasks and assignments before joining a class in order to efficiently use supervised time

Please, remember about the lecturer's consulation time and please efficiently use this time

In all requests about special consideration please follow the University regulations

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Subject motto

If we only hear a thing,
we soon forget it !

If we see it,
we remember it !

If we do it ourselves,
we know it !

Do you have any questions ?