

CMPT506– Advanced Database

Fall 2016

Review paper, presentation and discussion leading

The review paper and presentation must be submitted to Blackboard by 4pm on 23rd October 2016

(Presentations will be organized and the schedule posted)

Presentation and discussion leading: each group will do some research based on recent research papers, write a review paper and present it in class and lead the discussion.

You need to prepare a literature review paper to survey state-of-the-art results related to your topic and presented in major Database conferences and journals. Then you will present and discuss your findings in class using effective presentation techniques. Each presentation will be given 10 minutes per team member and 10 minutes questions and answers. The paper and presentation must be the student's original work. The written paper should be at least 8 pages (typewritten, 12 point Times Roman font). The key objective of this assignment is that you gain experience researching an advanced topic by gathering **multiple authoritative** academic sources and integrating your findings **into a well-structured paper and presentation** with the highest possible academic standards. In addition to learning about advanced topics in NoSQL databases, this assignment will also give you the opportunity to practice important research skills:

- You will gain experience reading and critically evaluating research papers.
- You will practice communicating complex technical material, both orally and in writing.

Submitted review papers and presentations will be made available to all students. This will enable everyone to learn from the efforts of all the other students.

Each team is required to select **at least three to six academic papers** (or you can choose 3 large papers > 20 pages) relevant to their topic, summarize, synthesize and analyze them and present them to the class.

The students will present a summary of their research after the lecture according to the schedule to be advertised.

1. Guidelines for structuring your review paper

This section gives further guidance on how you could structure your literature review paper:

- Abstract
- Brief history of the selected NoSQL technology
- Database architecture
- Data model
- Storage Engine physical structures (e.g., indexes, hash tables)
- Query language / Programming Language Interface
- Querying capabilities
- **Database strategies for Scalability, High Availability and Consistency**: investigate features driving the ability to scale read requests and write requests, or scaling data storage, in particular partitioning, replication, distributed data processing, consistency, and concurrency control. Focus more on **HOW** Scalability, High Availability, and Consistency are achieved. Have a separate subsection for each.
- Discuss use cases and scenarios where your assigned NoSQL DB can be used and examine its suitability for different sets of applications.
- Present in details a real case study where it has been used
- Deep evaluation: advantages and limitations

- Use cases you plan to design and implement for your project
- Conclusion
- Bibliography

2. Other guidelines

Grading schema:

Beside the above guidelines, this is what I will focus on during grading:

- Depth of literature review and adequate level of detail
- Emphasis database related issues
- Paper and presentation organization, i.e., logical order and transitions
- Clear, concise and accurate writing
- Conclusion justified and logically sound
- Well Prepared presentation and high level of confidence during the presentation delivery
- Quality of PowerPoint slides
- **Presenting NOT reading** – student just reading their presentation will have lower grade
- Time management during the presentation
- **Demo of your selected NoSQL**
- **Present the use cases you plan to design and implement for your Project.**
- Adequately answering the questions during/after the presentation

Here are more general considerations:

- *The more in-depth and specific the better.*
- Avoid vague generalities.
- Referring to concepts or points made in our course content is a plus.
- Do not plagiarize. Quote and cite sources where necessary.

What should you submit?

You should submit to Blackboard a **zip file containing:**

- PDF copy of the reviewed papers
- Your review paper as a Word document
- Your PowerPoint presentation

On the day of the presentation, you should also submit a hardcopy of your review paper and a hardcopy of your presentation.

How to locate academic papers?

- Google Scholar <http://scholar.google.com/> - it works best if you use within QU campus because you can go straight to the full text via QU library.
- QU Library Online Databases <http://library.qu.edu.qa/> (then select E-Resources) Email me if need any further guidance or help.

Useful links

- [Tips for Writing Technical Papers](#), by Prof. Jennifer Widom
- [Tips for a Good Conference Talk](#), by Prof. Jennifer Widom

Evaluation Criteria

Evaluation criteria	%
<p>Depth of literature review and adequate level of detail:</p> <p>The more in-depth and specific the better. Clear, concise and accurate reporting of findings. Emphasis database related issues:</p> <ul style="list-style-type: none"> • Abstract (3 pts) • Introduction (3 pts) - include a brief history of the selected NoSQL technology • Database architecture (10pts) • Data model (5pts) • Storage Engine physical structures (6pts) • Query language / Programming Language Interface (3pts) • Querying capabilities (5pts) • Strategies for Scalability (8pts) • Strategies for High Availability (8pts) • Strategies for Consistency (8pts) • Discuss use cases and scenarios where your assigned NoSQL DB can be used and examine its suitability for different sets of applications (4pts) • Case study: Present in details a real case study where it has been used (4pts) • Evaluation: advantages and limitations (4pts) • Use cases you plan to design and implement for your project (4pts) • Conclusion (3pts) 	77
<p>Writing quality and organization of the review paper:</p> <ul style="list-style-type: none"> - Well-structured: each section has a clear and unique function. Hierarchy of sections is correct. Ordering of sections is logical. - Appropriate writing style, grammar, spelling and proper citation of references. - Level of detail is appropriate throughout. - Appropriate and correct use of technical terms. - All figures, equations, graphs, charts, and drawings are accurate, numbered with a title, consistent with the text, and of good quality. They enhance understanding of the text. 	8
<p>Presentation Content:</p> <ul style="list-style-type: none"> - Presentation provides pertinent, concise and clearly explained information - Material is covered with adequate depth - Present the use cases you plan to design and implement for your project 	5
<p>Presentation Organization:</p> <ul style="list-style-type: none"> - Presentation well-organized and clearly structured: information presented in logical and interesting sequence that the audience can easily follow. - Good quality and neat visual aids with good use of graphics. 	5
<p>Presentation Delivery:</p> <ul style="list-style-type: none"> - Relaxed and lively though understandable and engaging talk with high level of confidence and enthusiasm. - Speaks clearly and uses appropriate language such that it keeps audience's attention - Presenter added value to slides (as opposed to merely reading them) - Meets time limit (25 minutes). - Adequately answering the questions: student is able to give appropriate, clear and to-the-point answers to the questions. 	5
Total	100