Query Optimization'14

Exercise Session 1

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Organizational Matters

- Exercise sessions are here to illustrate the material of the course with examples, special cases, etc.
- Homework every week: programming assignment and 2-3 problems
- Do 75% or better and get the bonus for the final grade
- Written exam at the end
- Slides on the website
- Email subject should start with `[qo14]`

Disclaimers

- This course is about how query optimizers work and what are they good for
- That is, about general principles and specific algorithms/techniques that are employed by real database systems
- (With lots of algorithms)
- Sometimes, we will talk about optimization of some specific classes of SQL queries
- Sometimes, we will look at how it is implemented in the open-source DB systems (PostgreSQL)
- However, we will not study system-specific settings (how to tune Oracle/MySQL/PostrgreSQL/etc). Read manuals!

Info for Homework

- You can work in groups with up to two students
- Handwritten (and/or scanned) solutions will not be accepted. Use LaTeX (preferable) or Word.
- only PDF submissions for problems
- Programming assignment:
  - Implement your own query optimizer step by step
  - Initial code base (very simple database system) is available on the website
  - Language: C++11 (great opportunity to learn it btw)
  - Solutions should come with a Makefile and instructions on how to build/run it
  - Future assignments will build upon the current

Info for Homework

C++11:

- Bjarne Stroustrup. *A Tour of C++*: Short and comprehensive reference, available in the library
- `http://en.cppreference.com`: various helpful data structures and alogrithms from Standard Template Library
- `http://isocpp.org/faq`: FAQ covering lots of topics from basics and how to get started over OOP to advanced stuff and a preview of C++14
- Please refrain from using any libraries other than the STL (and googletest for unit testing)
- tutorial on Make: `http://www.cs.umd.edu/class/fall2002/cmsc214/Tutorial/makefile.html`

Homework – Guidelines

- Submit the whole project directory, not just separate source files (no binaries!)
- You can work within the TinyDB directory, changing its structure if needed
- (Briefly) comment the source code: every class, field, method, design choice
- Give examples of the input queries for which you tested. How about unit tests?

Info

- Slides and exercises:
  http://www-db.in.tum.de/teaching/ws1415/queryopt
- Send any questions, comments, solutions to exercises etc. to andrey.gubichev@in.tum.de
- Exercises due: 9 AM, October 20