15V

Lektion 3

Fredag den 2. september 2016

Litteratur: [Ramakrishnan] kapitel 8 og 9 (fraregnet 8.4 og 9.2)
(siderne 273 – 282, 291-299, 304-309 og 316-333) – det vigtigste er de første dele

Emner:

Gennemgang af opgave 1.7 og 1.8.
(forventet lavet færdige hjemme)

Decimaltal og datoer i SQL.

Performance i databaser.

Filorganiseringer
- Index
  - Hashing-baseret
  - Træ-struktur
- Sammenligning af organiseringer

Diske, filer, blokke, records
- Opbygning af diske
- Meget lidt om RAID
- Styring af buffer-poolen
- Opbygning af blokke og records

Opgave

Opgave 2.1, 2.2, 3.1.

Læsning til næste gang:

[Ramakrishnan] kapitel 10 til og med 10.7 (lad være med at gå ned i algoritmerne i 10.4, 10.5 og 10.6)

Bemærkninger:

Exercise 3.1

In this exercise you are asked to work with the script about index (IntroIndexlekt3). Copy the script from fronter.

Exercise A

Make a new database (data-file 50MB), create the table and run my insert-BATCH (in this exercise you **can't** use the tempdb).
Try to run the "select count" – query to check, that there is 40000 records in the database.

Exercise B

Add a command before the selects *set statistics io on* - it will count how many pages are read (the *logical reads* is the total number of pages read).

Run a simple select (select * from big where name = ...) again and note the running time and number of logical reads. Put the results in the schema on next page.

Try the top-query ("select top 25 from big order by name"), note the running time and number of logical io's in the schema on next page.

Clean the buffer and try the simple select again – note the results in the schema on next page.

Exercise C

Keep the statistics io on and the statistics time on.

Make a non-clustered index on name

Try the simple select and the top 25 select – note the running time and number of logical io's

Clean the buffer and try the simple select again – note the results.

Drop the index and create a clustered index on name

Try the simple select and the top 25 select – note the running time and number of logical io's

Clean the buffer and try the simple select again – note the results.

You can put the runtime- and io-results from B and C into this schema:

	Runtime without clean buffers	Runtime with clean buffers	Number of logical io's
Without any indexes (simple select) **1**			
With a non-clustered index on name (simple select) **3**			
With a clustered index on name (simple select) **5**			
Without any indexes (select top) **2**		Don't	
With a non-clustered index on name (select top) **4**		Don't	
With a clustered index on name (select top) **6**		Don't	

Look at the attributes in the table – can you explain the number of pages read. (it is a bit of calculation – you might not be able to explain it 100% but close to).