Institut for Matematik og Datalogi
Odense Universitet

February 28, 2000
JFB

DM11 – F00 – Lecture 4

Lecture, February 15

We finished sections 3.2 through 3.3 of chapter 3, "Structural Induction" from the notes, and section 2.3 of chapter 2. In chapter 3, we skipped sections 3.4 and 3.5.

Lecture, February 22

We will finish sections 2.4 and 2.5 in chapter 2. (Lamé's Theorem from chapter 3 will be covered in connection with section 2.4.)

Lecture, February 29

We will begin on the notes on algebra.

Problems to be discussed in week 9

- Use structural induction to show that if a well-formed formula of variables, numerals, and operators from $\{+,-,*,/,\uparrow\}$ has n operators, the sum of the number of variables and numerals is $n+1$.
- Show that concatenation is an associative operation, i.e. $(x \odot y) \odot z = x \odot (y \odot z)$. Use the definitions given in the course notes.
- Give a recursive definition of binary trees with height h, where the height of the tree is defined to be the number of nodes on the longest path from the root to a leaf. Use structural induction to show that a binary tree of height h has at most $2^h - 1$ nodes.
- From the 3rd edition:
  - 18, 24, 28, 30, (32), 36, and 38 from section 3.3.
    Note that you should use structural induction for 24 and 28.
    Note that a *palindrome* is a string which is the same as its reverse.
  - (5), (6), 13, 21, 22, 23, and 33 from section 2.3.

- From the 4th edition:
  - 18, 24, 28, 30, (32), 36, and 38 from section 3.3.
    Note that you should use structural induction for 24 and 28.
    Note that a *palindrome* is a string which is the same as its reverse.
  - (5), (6), 13, 21, 22, 23, and 35 from section 2.3.

Få indflydelse på studenterlivet!

De studerendes talerør på Institut for Matematik og Datalogi er fagrådet. Det er stedet, hvor de studerende mødes, for at gøre studiemiljøet så godt som muligt på vores institut. Det er gennem fagrådet, at vi som studerende bliver hørt på instituttet. Meld dig til mail-listen på vores hjemmeside, så vil du modtage materiale om møder og andet pr. e-mail. Gør dit for at forbedre vores studier.

Se mere på: **http://www.imada.sdu.dk/Tutor/**

Næste møde:

Vi skal mødes i mødelokalet lige overfor sekretariatet på IMADA **mandag den 28. februar kl. 12.15**. Jeg opfordrer alle interesserede til at komme. Følgende er et udkast til dagsorden:

1. Godkendelse af dagsorden.
2. Orientering fra studieudvalgsmødet.
3. Drøftelse af kommende fagevaluering.
4. Forårets arrangementer.
5. Hyttetur til efteråret?
6. Eventuelt.

PS: Husk foredrag og film torsdag den 24. februar 16.15 i U110.

Venlig hilsen Erik Vind Nielsen
Faglig tutor