

581365-8
Computer Organization II
(Tietokoneen rakenne)

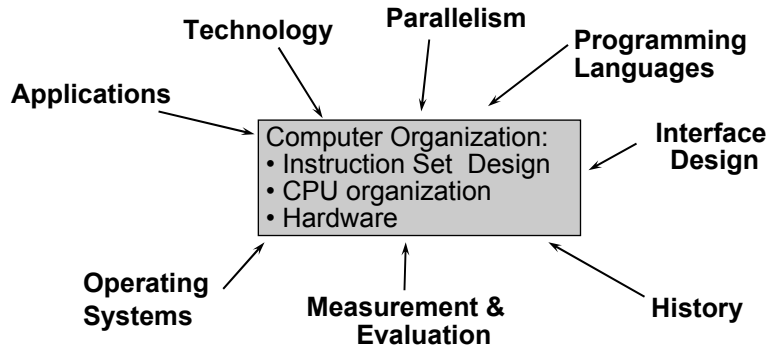
Teemu Kerola
University of Helsinki
Department of Computer Science

Fall 2003

Course Focus

- Understand basic computer system design from the user (human, OS, compiler) viewpoint as well as from the designer viewpoint.
- Understand how a simple hardware clock signal makes a computer to execute programs.

Peripheral topics

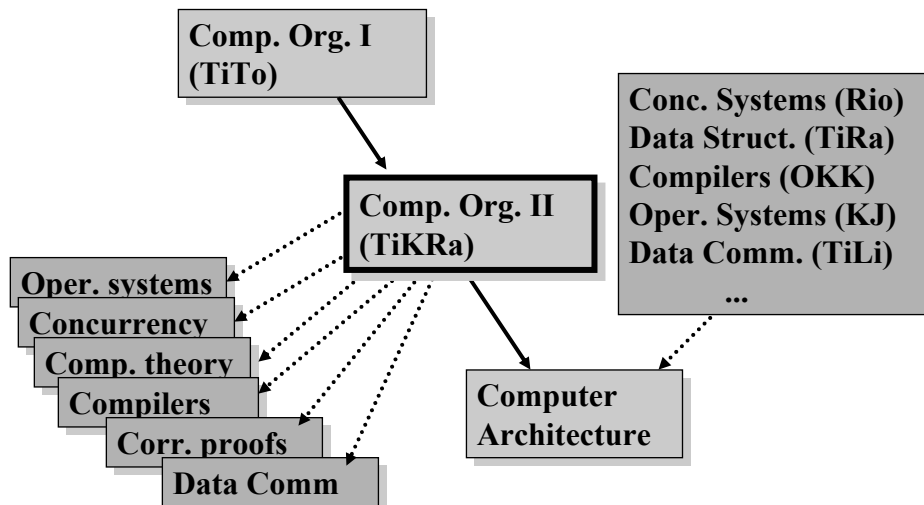


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Related Courses



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Notice

- These slides are made to support lectures and to be used with the text book.
- They do NOT include everything that is covered in the lectures.
- They are NOT a replacement for a text book.
- If you need a self-contained presentation, please use the text book.

Motto

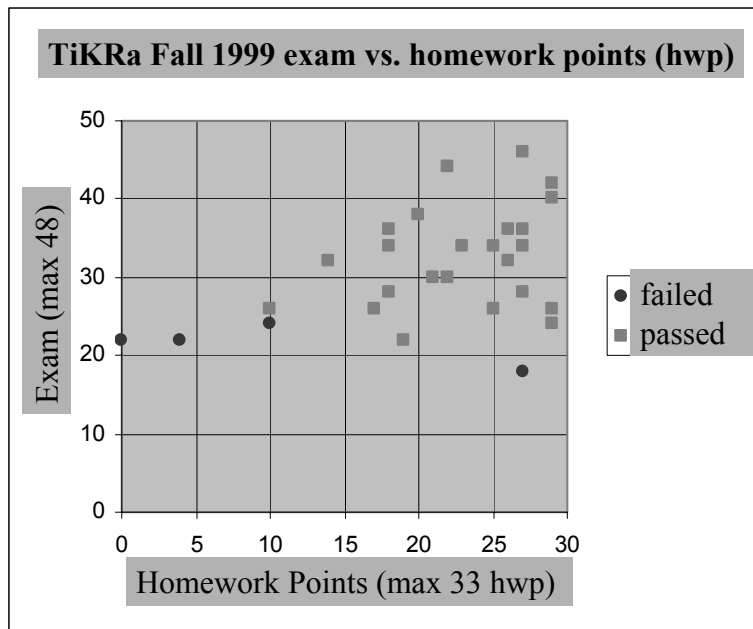
- “It is not good exercise,
if you do not sweat”

(“Kunto ei nouse, jos ei tule hiki”)

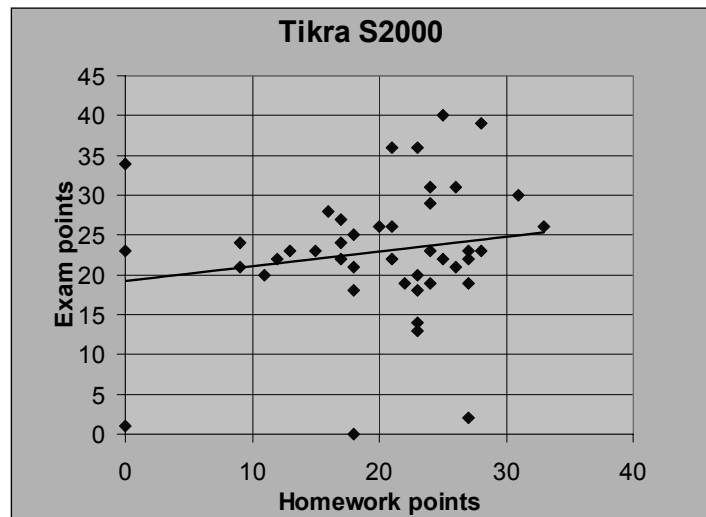
Studying in an Ordinary 2 cr Lecture Course ⁽⁶⁾



- Lectures 4h / w
 - lecture notes in web, make copies in advance
 - learn basics in lecture
- Read same material from text book 6h / wk
 - little bit different approach
- Do homeworks
- Participate in practice sessions 2h / wk
- Read and study independently 8h ?
- Take course exam



TiKRra Fall 2000 exam vs. homework points (hwp)



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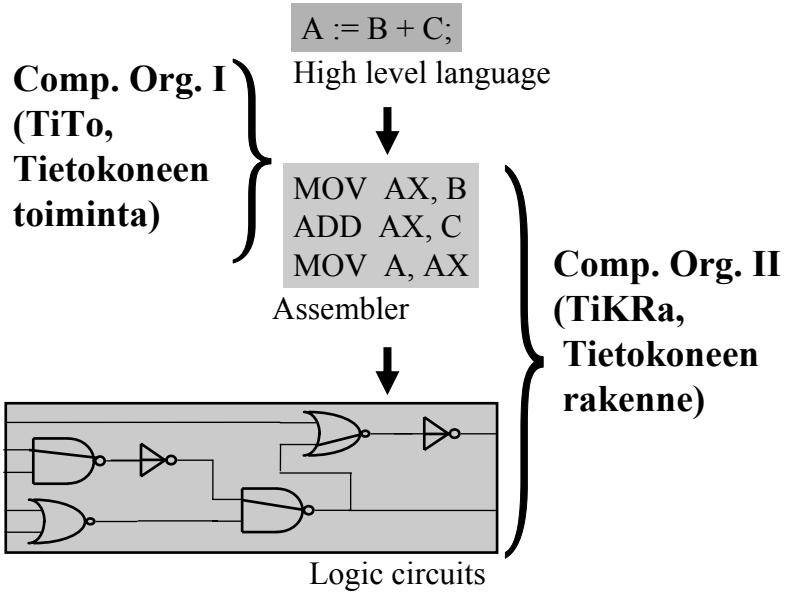
WWW Information

- Course home page
<http://www.cs.helsinki.fi/Teemu.Kerola/tikra/>
- This semester schedule
<.../tikra/S2003/aikataulu.html>
- Lectures *<.../luennot/>*
- Homeworks *<.../laskuharj/>*
- Old exams *<.../tikra/kokeet/>*
- Newsgroup *<hy.opiskelu.tkl.tikra>*

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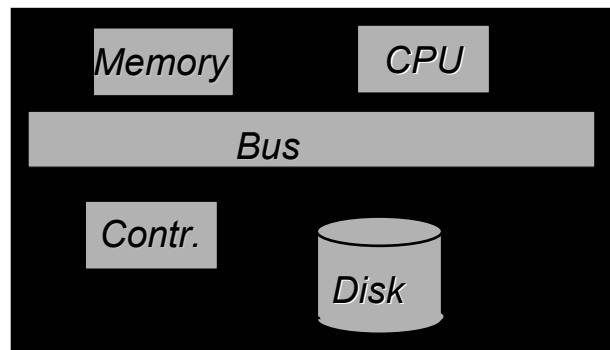
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TiTo: What happens in system

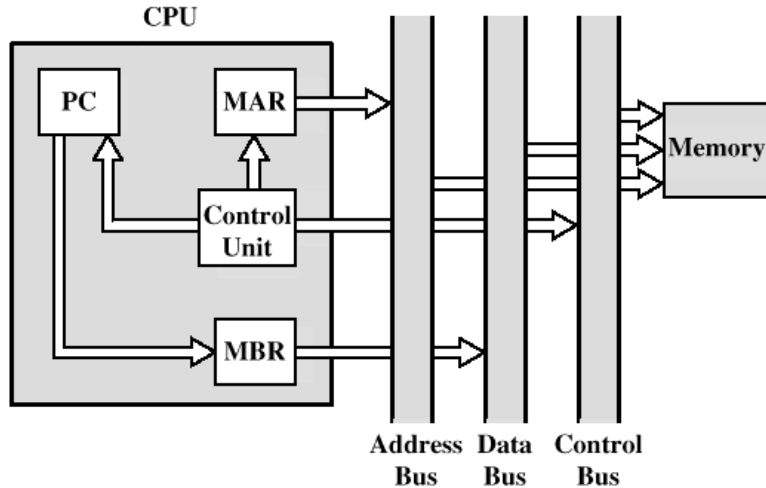
TiKRä: How are CPU & memory implemented?

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The Lowest Presentation Level for Comp Org I (TiTo)

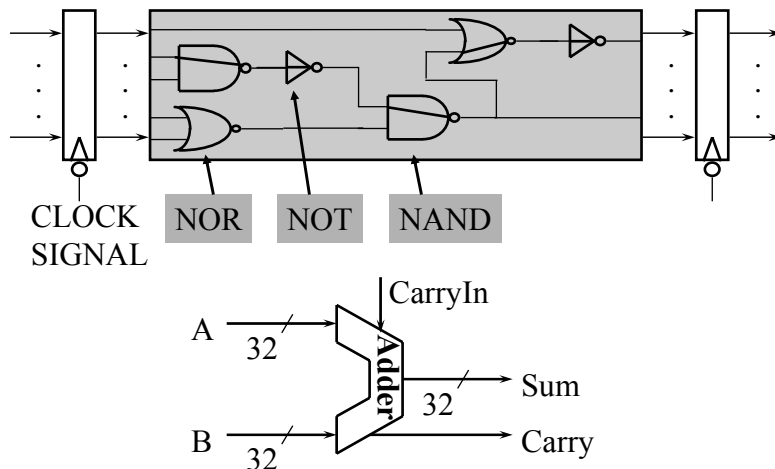


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The Lowest Presentation Level for Comp Org II (TiKR_a)



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Contents

Text book: Stallings, Computer Organization &
Architecture, 6th Ed., 2003

Old text book: 5th Ed, 1999

- Computer system - overall structure (Ch 1-8) (Ch 1-7)
- System buses (Ch 3) (Ch 3) 5th Ed, [Stal99]
- Digital logic (App A) (App A)
- Memory hierarchy (Ch 4.3, 8.3) (Ch 4.3, 7.3)
- Computer arithmetic (Ch 9) (Ch 8)
- Instruction sets (Ch 10-11) (Ch 9-10)
- CPU structure and function (Ch 12) (Ch 10)
- Reduced Instruction Set Computers (Ch 13) (Ch 12)
- Instr. level parall. and superscalar proc. (Ch 14) (Ch 13)
- IA-64 (Ch 15) & Crusoe
- Control unit (Ch 16-17), Summary (Ch 14-15)