

581365-8
Computer Organization II
(Tietokoneen rakenne)

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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.

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Peripheral topics

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graph TD
    CO[Computer Organization:  
- Instruction Set Design  
- CPU organization  
- Hardware] --> Tech[Technology]
    CO --> Par[Parallelism]
    CO --> ProgLang[Programming Languages]
    CO --> IntDesign[Interface Design]
    CO --> Hist[History]
    CO --> ME[Measurement & Evaluation]
    CO --> OS[Operating Systems]
    Tech --> CO
    Par --> CO
    ProgLang --> CO
    IntDesign --> CO
    Hist --> CO
    ME --> CO
    OS --> CO
  
```

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Related Courses

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graph TD
    COI[Comp. Org. I  
(TiTo)] --> COII[Comp. Org. II  
(TiKRa)]
    COII --> CA[Computer Architecture]
    subgraph RelatedCourses [ ]
        direction TB
        RC[Conc. Systems (Rio)  
Data Struct. (TiRa)  
Compilers (OKK)  
Oper. Systems (KJP)  
Data Comm. (TiLi)  
...]
    end
    COI -.-> RC
    COII -.-> RC
  
```

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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.

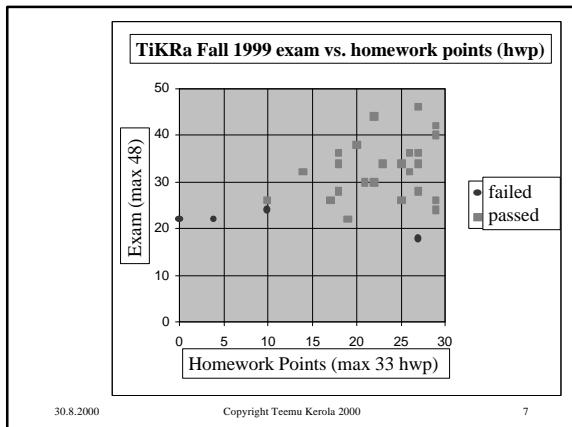
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Motto

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

(“Kunto ei nouse, jos ei tule hiki”)

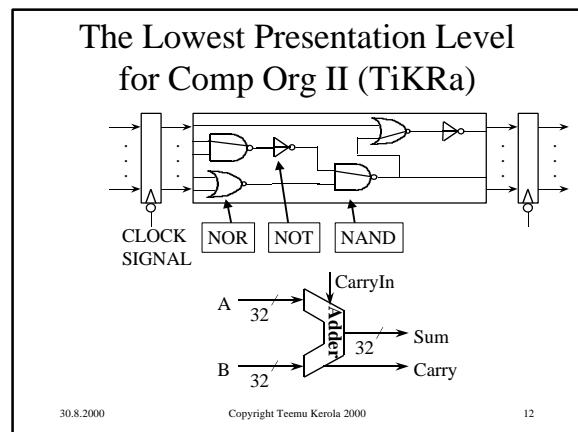
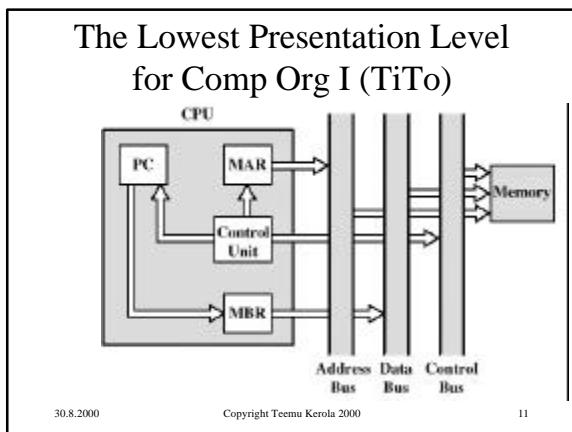
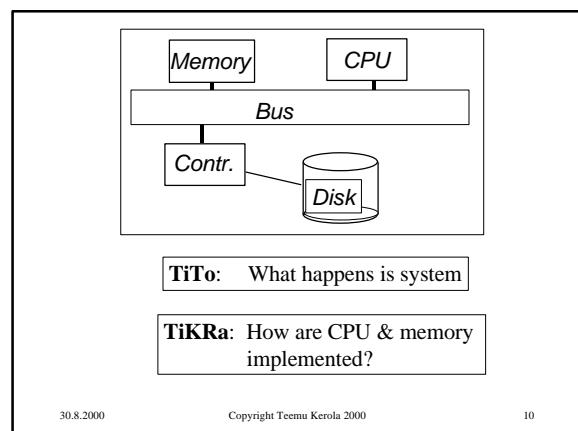
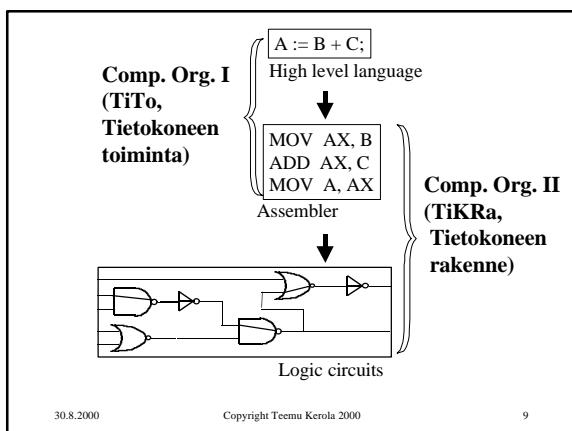
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WWW Information

- Course home page
<http://www.cs.helsinki.fi/Teemu.Kerola/tikra/>
- This semester schedule
[.../tikra/S2000/aikataulu.html](http://tikra/S2000/aikataulu.html)
- Lectures [.../luennot/](http://luennot/)
- Homeworks [.../laskuharj/](http://laskuharj/)
- Old exams [.../tikra/kokeet/](http://tikra/kokeet/)
- Newsgroup hy.opiskelu.tktl.tikra

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Contents

- Computer system - overall structure (Ch 1-7)
- System buses (Ch 3)
- Digital logic (App A)
- Memory hierarchy (Ch 4.3, 7.4)
- Computer arithmetic (Ch 8)
- Instruction sets (Ch 9-10)
- CPU structure and function (Ch 11)
- Reduced Instruction Set Computers (Ch 12)
- Instr. level parallel. and superscalar proc. (Ch 13)
- Control unit (Ch 14-15)