581365-8

Computer Organization II (Tietokoneen rakenne)

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Department of Computer Science

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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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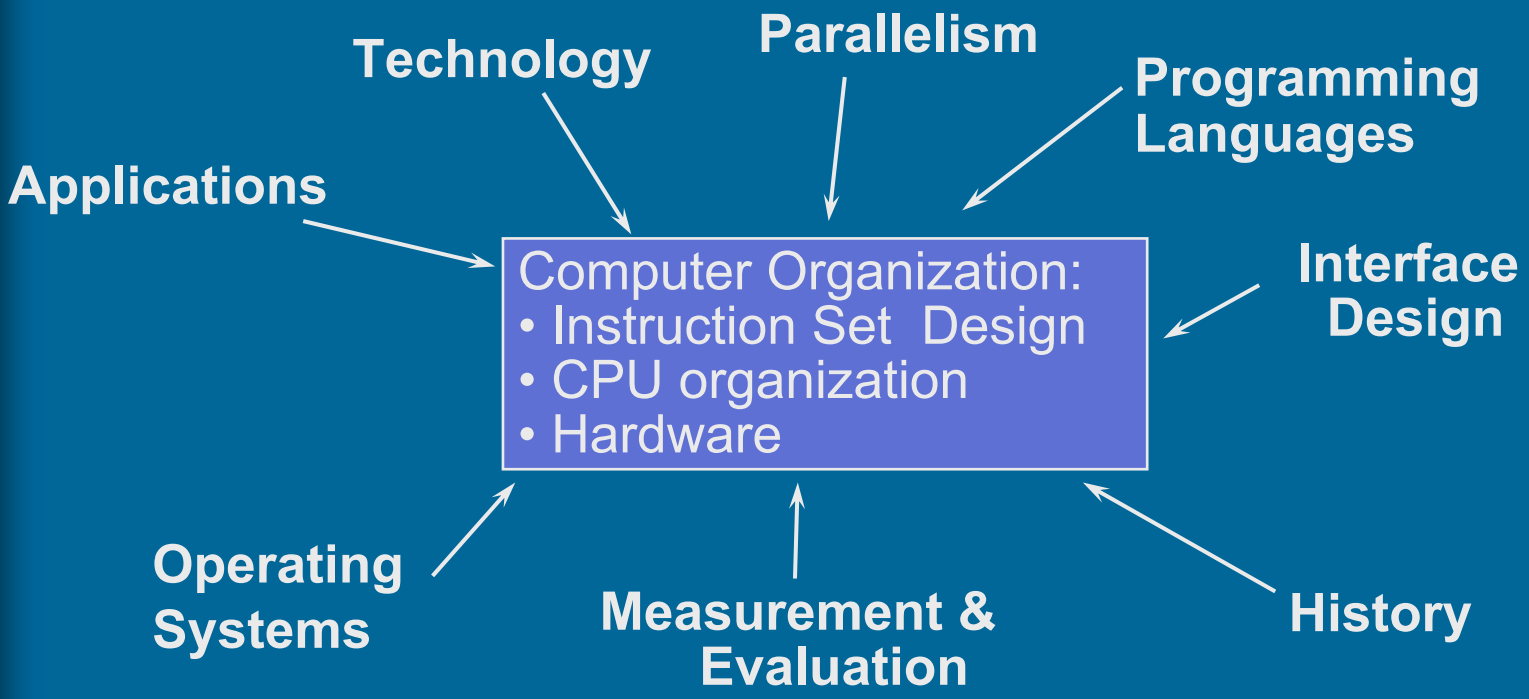
Peripheral topics



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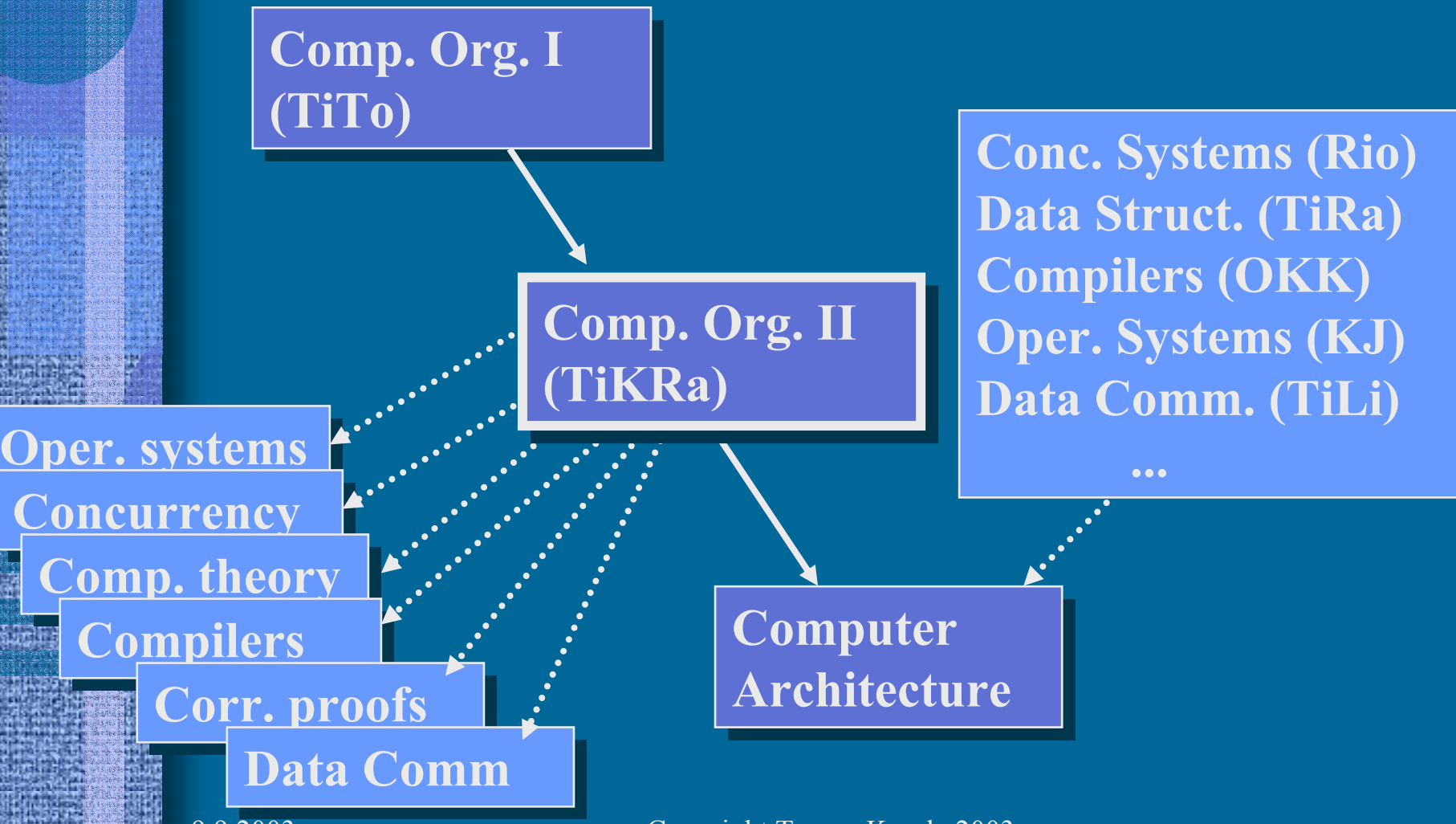
Related Courses



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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.

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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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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
- Take course exam — 8h ?

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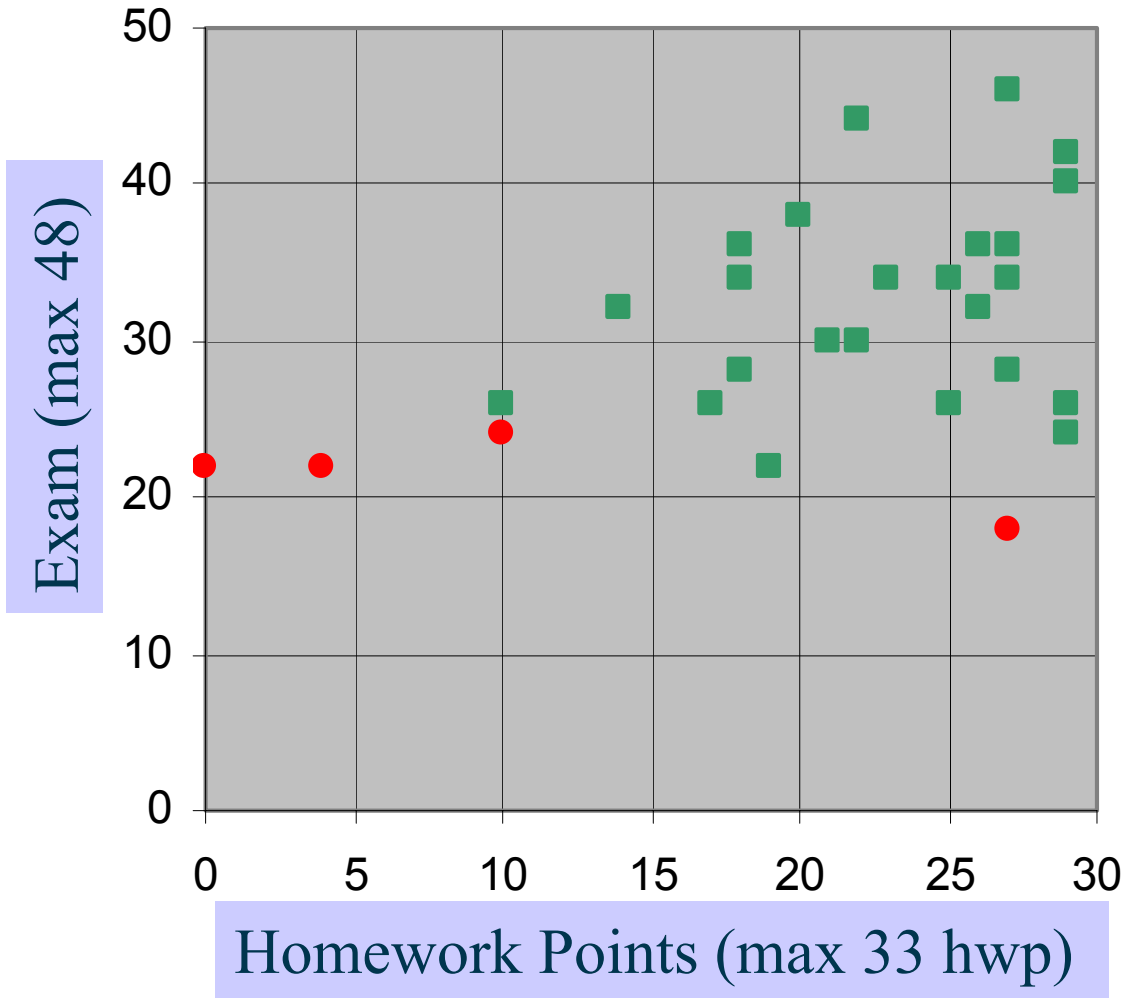
TiKRa Fall 1999 exam vs. homework points (hwp)



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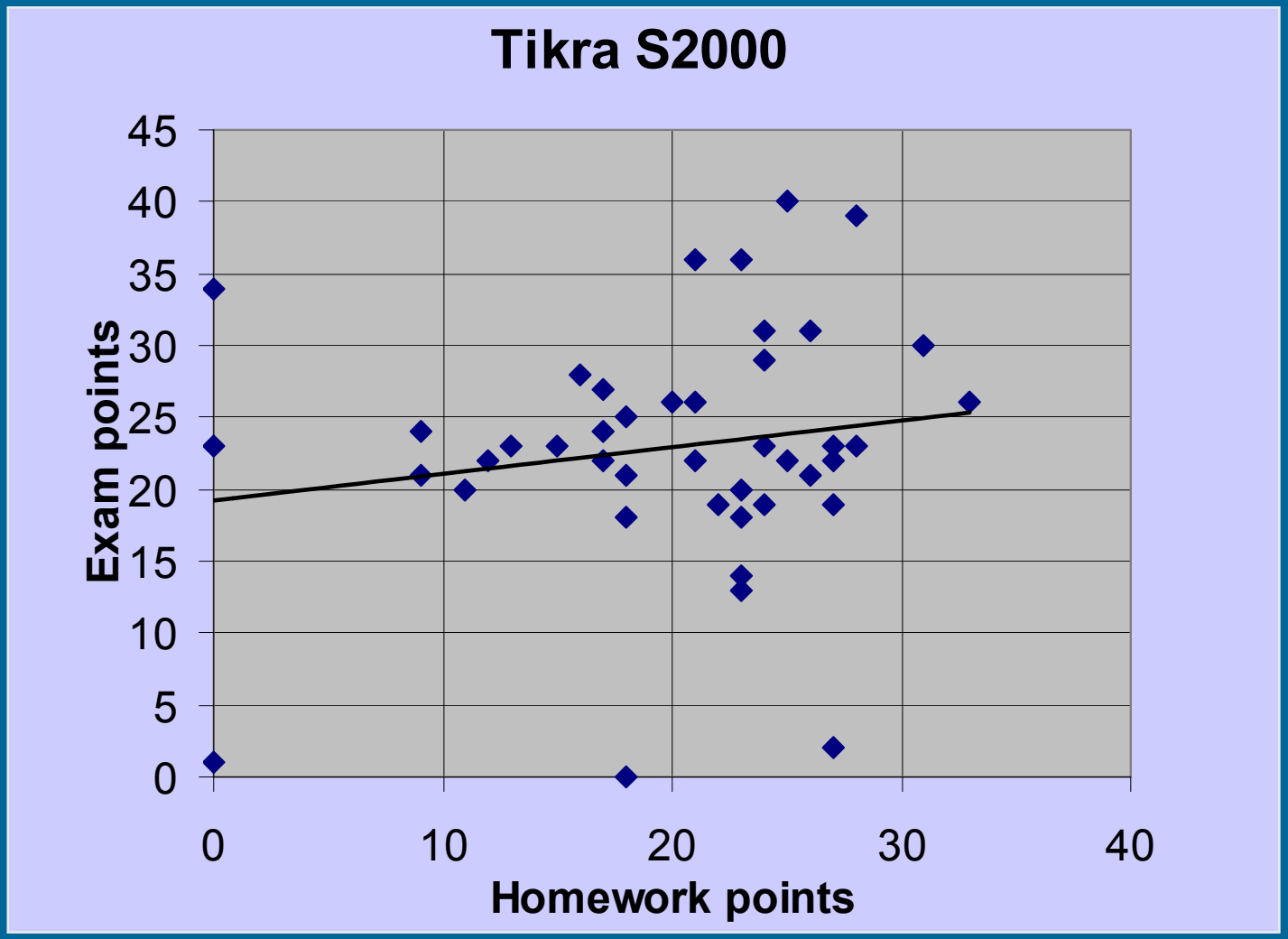
TiKRa Fall 2000 exam vs. homework points (hwp)



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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.tktl.tikra*

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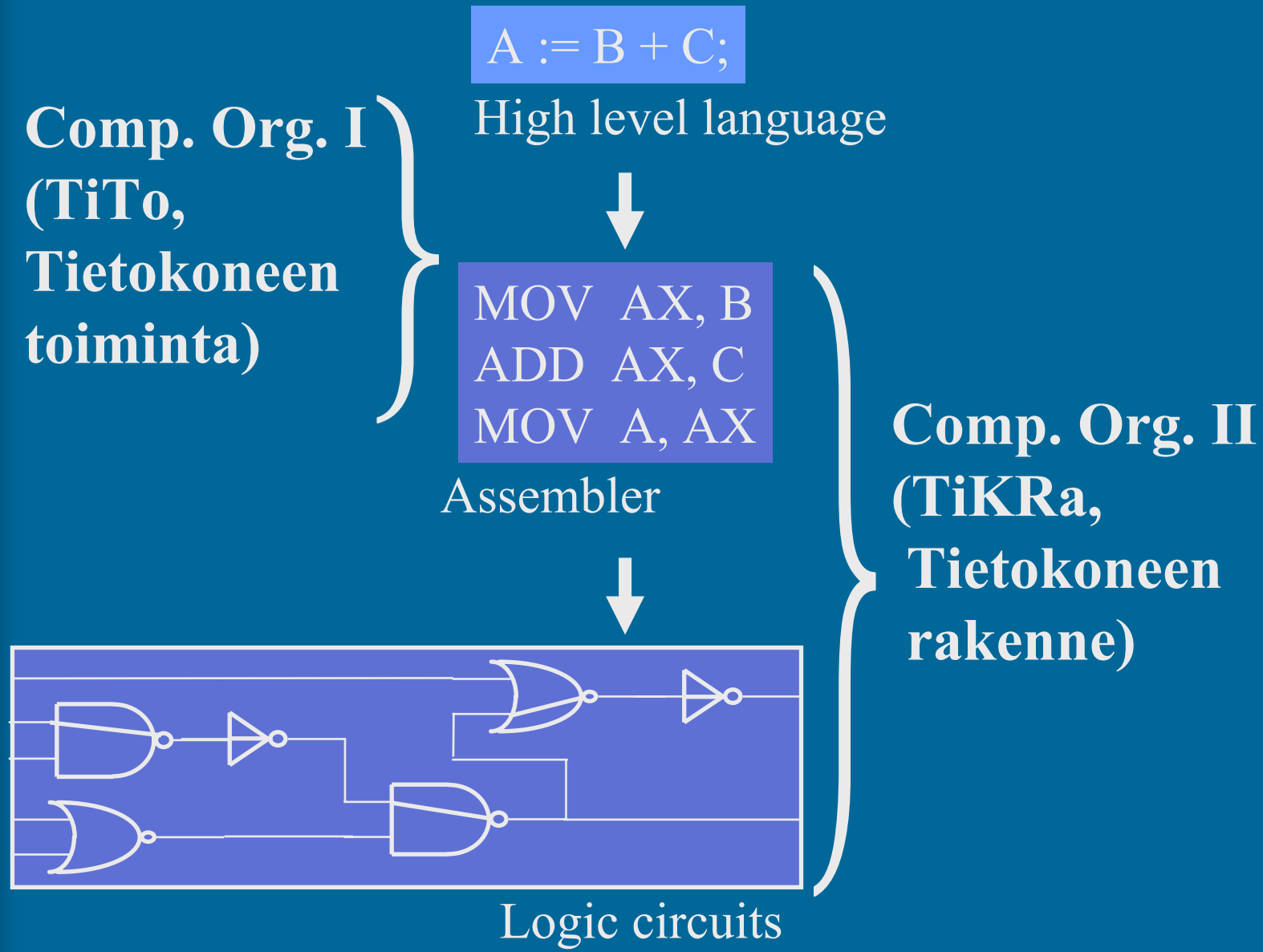

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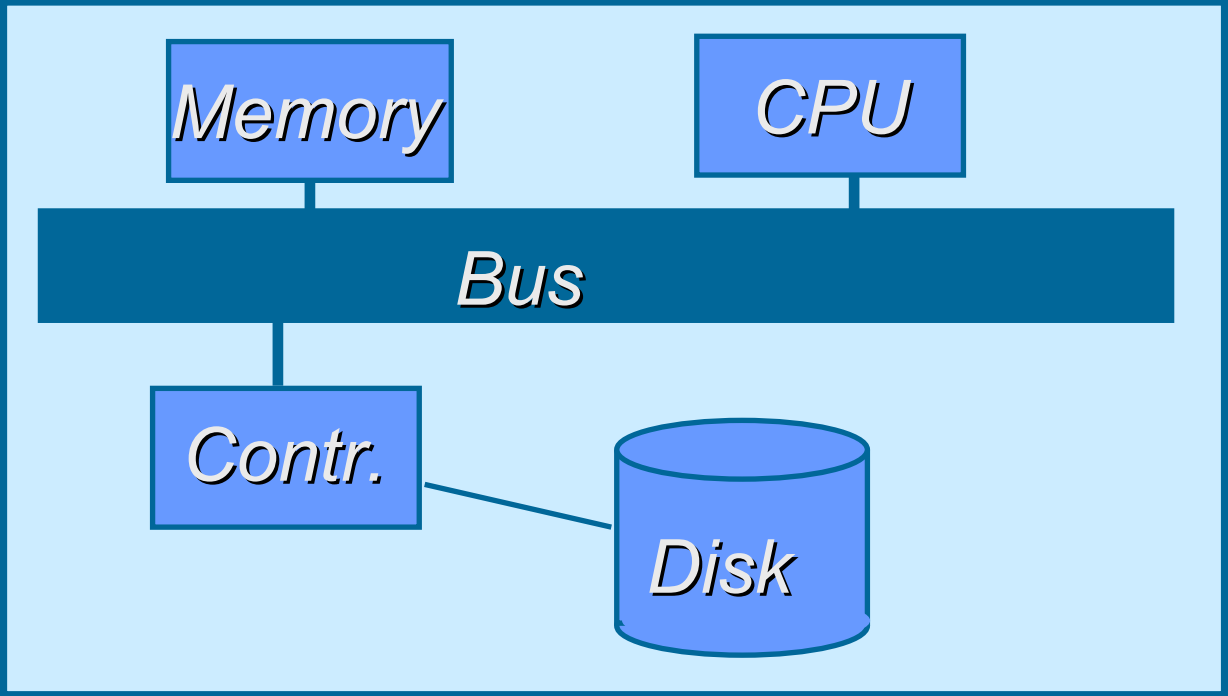

TiTo: What happens is system

TiKRa: How are CPU & memory implemented?

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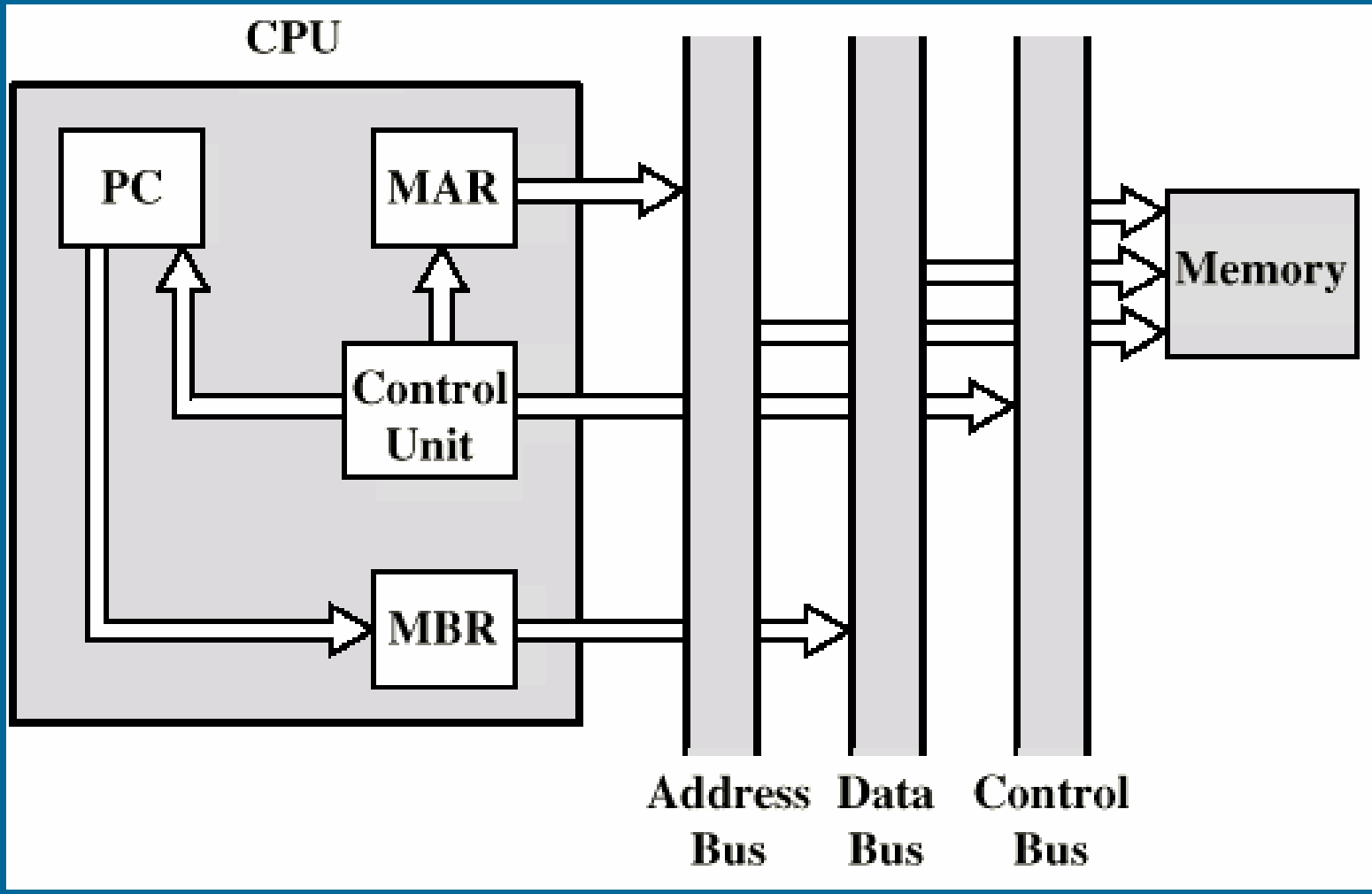
The Lowest Presentation Level for Comp Org I (TiTo)



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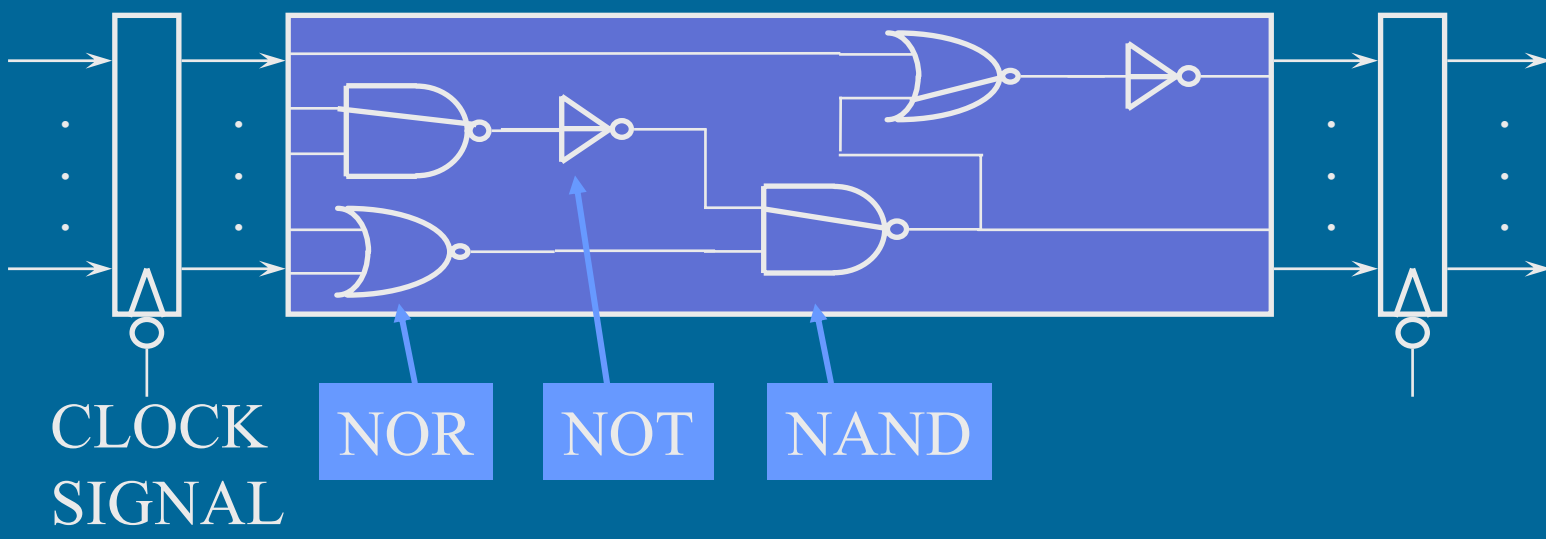
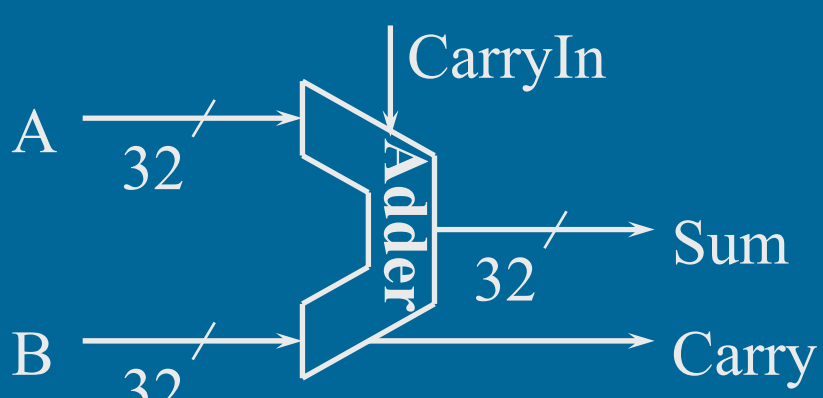
The Lowest Presentation Level for Comp Org II (TiKRa)





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

(Ch 1-7) 5th Ed, [Stal99]

(Ch 3)

(App A)

(Ch 4.3, 7.3)

(Ch 8)

(Ch 9-10)

(Ch 10)

(Ch 12)

(Ch 13)

(Ch 14-15)

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