581365-8
Computer Organization II
(Tietokoneen rakenne)

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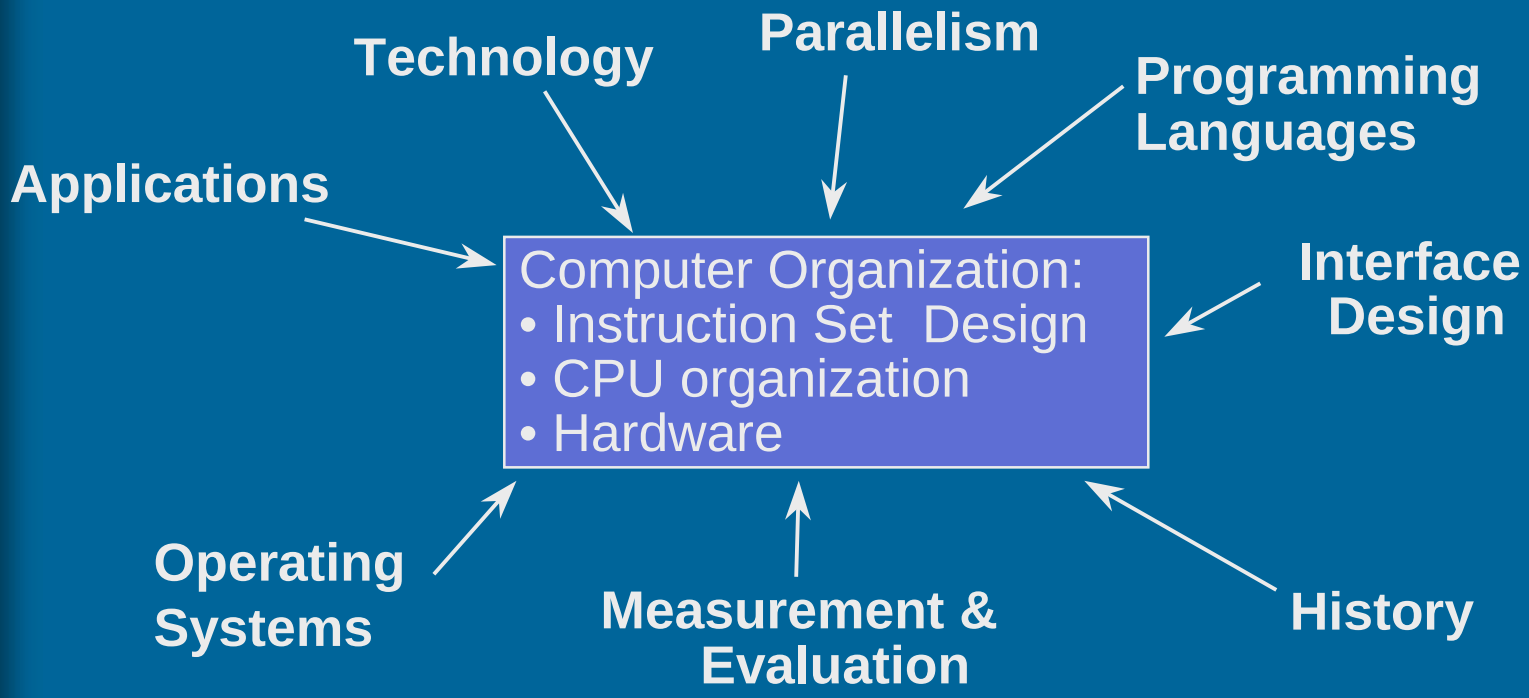
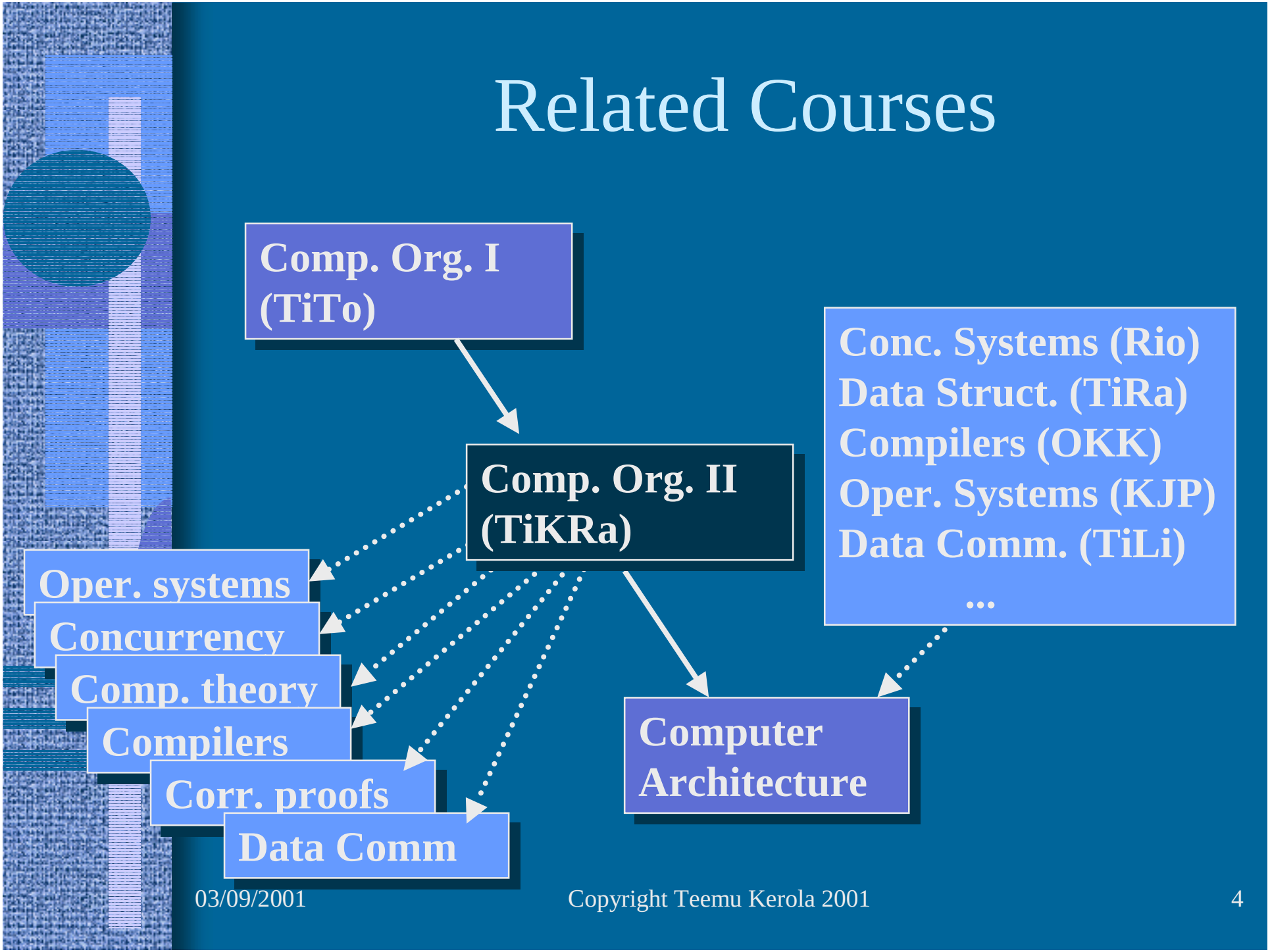
Course Focus

- 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.

Peripheral topics



Related Courses



Notice

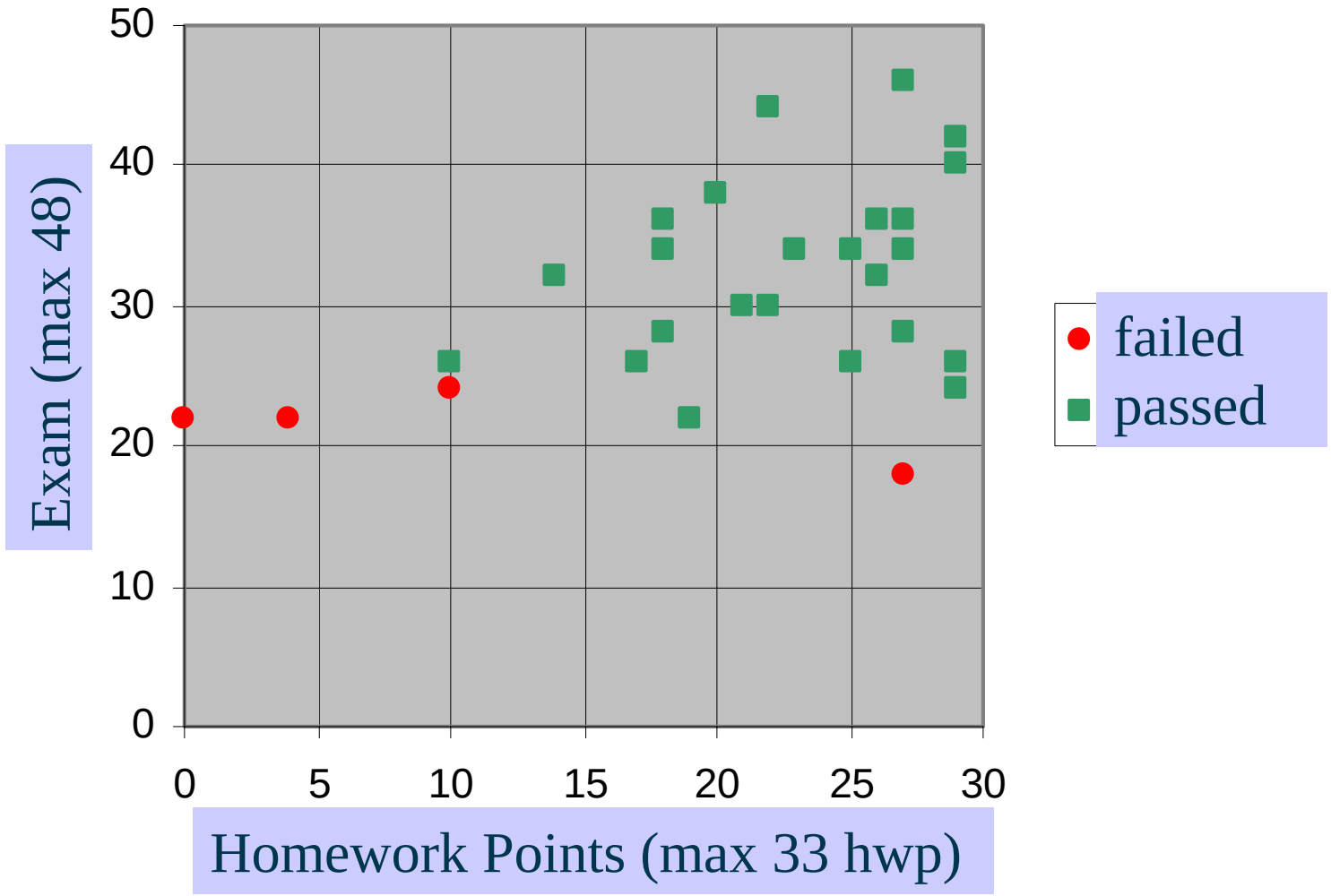
- These slides are made to support lectures and to be used with the text book.
- They do NOT include everything that is covered in the lectures.
- They are NOT a replacement for a text book.
- If you need a self-contained presentation, please use the text book.

Motto

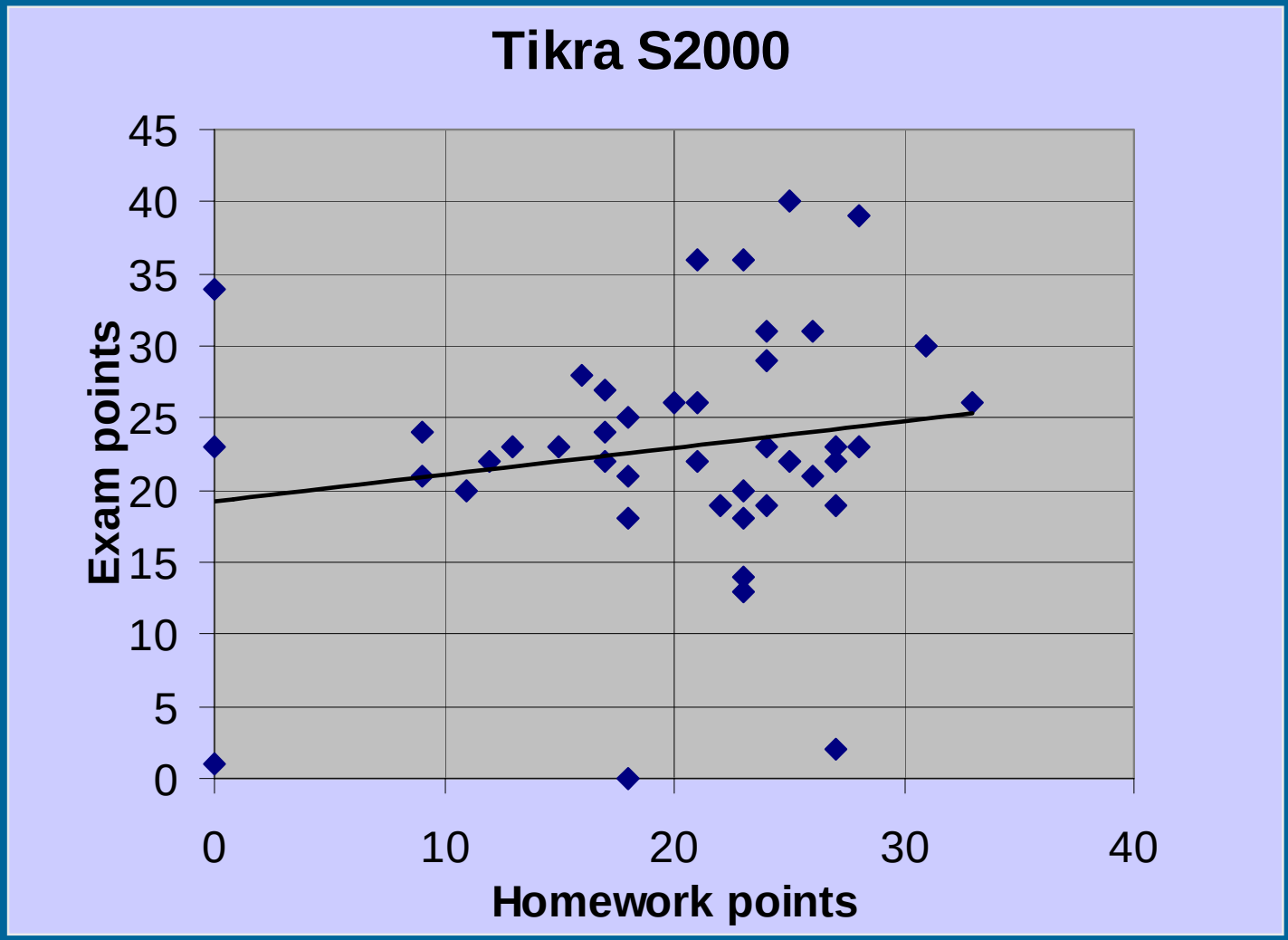
- “It is not good exercise,
  if you do not sweat”

  (“Kunto ei nouse, jos ei tule hiki”)

TiKRa Fall 1999 exam vs. homework points (hwp)



TiKRa Fall 2000 exam vs. homework points (hwp)



WWW Information

- Course home page
  http://www.cs.helsinki.fi/Teemu.Kerola/tikra/
- This semester schedule
  .../tikra/S2001/aikataulu.html
- Lectures *.../luennot/*
- Homeworks *.../laskuharj/*
- Old exams *…/tikra/kokeet/*
- Newsgroup *hy.opiskelu.tktl.tikra*

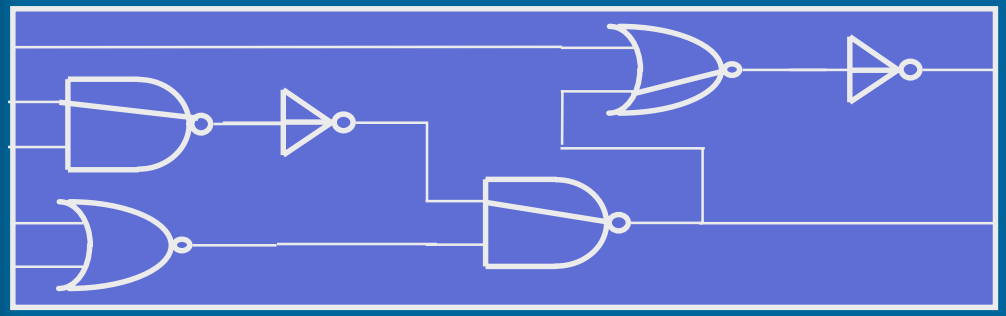
Comp. Org. I (TiTo, Tietokoneen toiminta)

```
A := B + C;
```

High level language

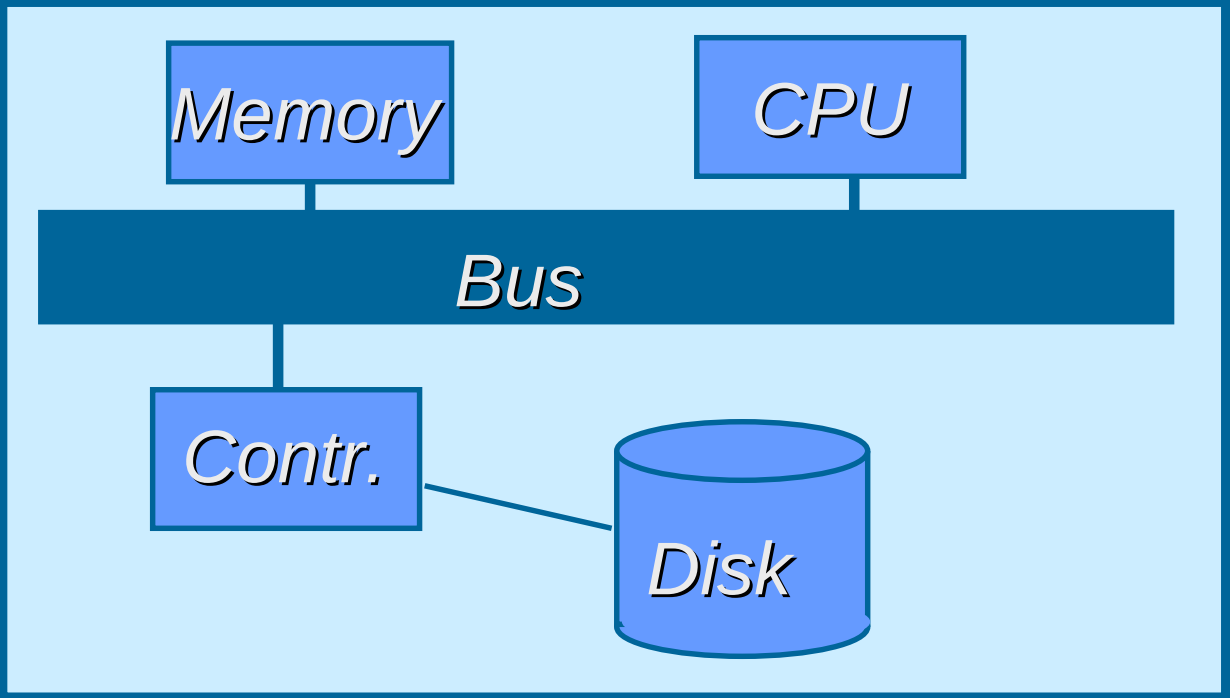
```
MOV  AX, B
ADD  AX, C
MOV  A, AX
```

Assembler



Logic circuits

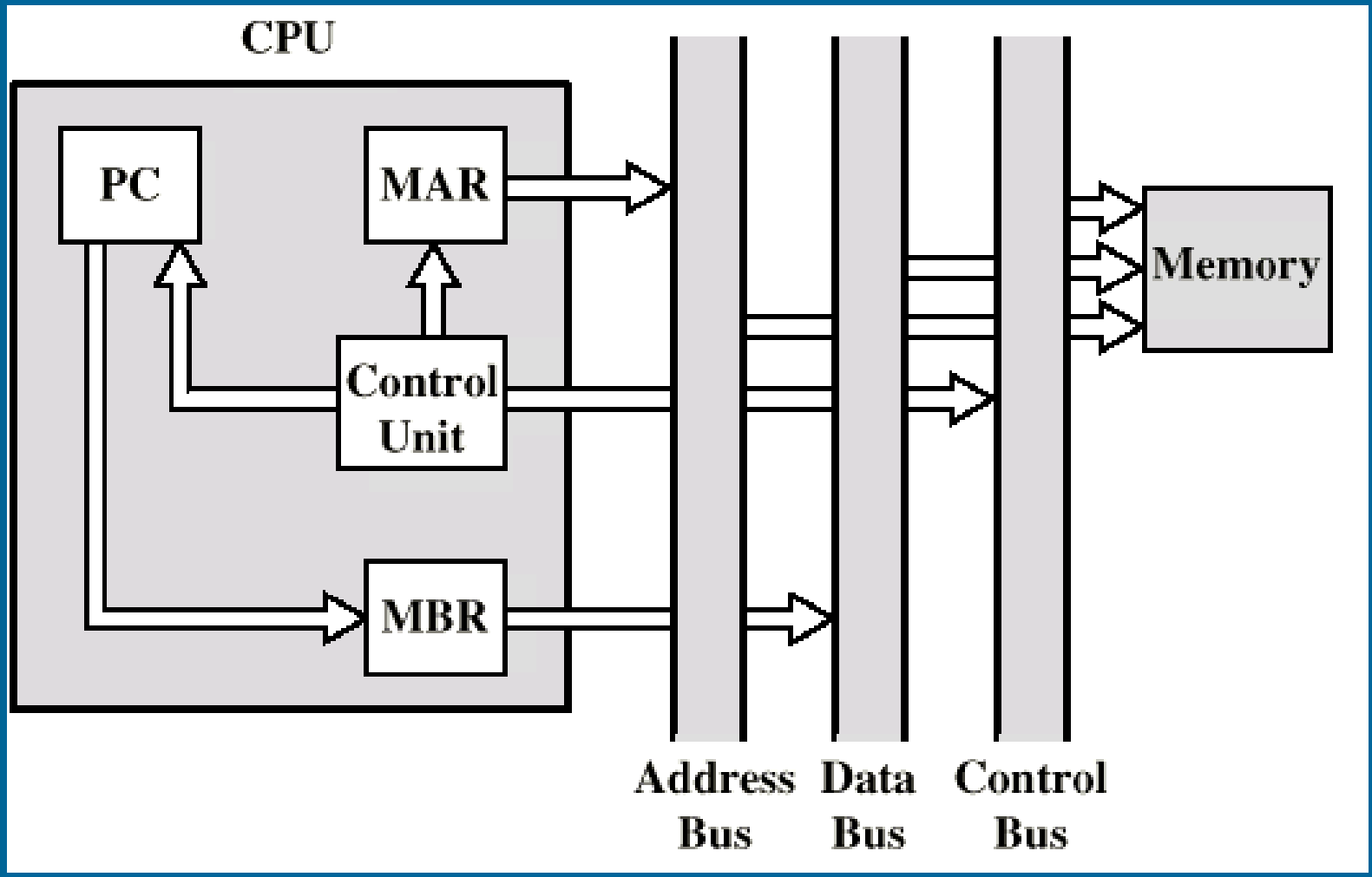
Comp. Org. II (TiKRa, Tietokoneen rakenne)



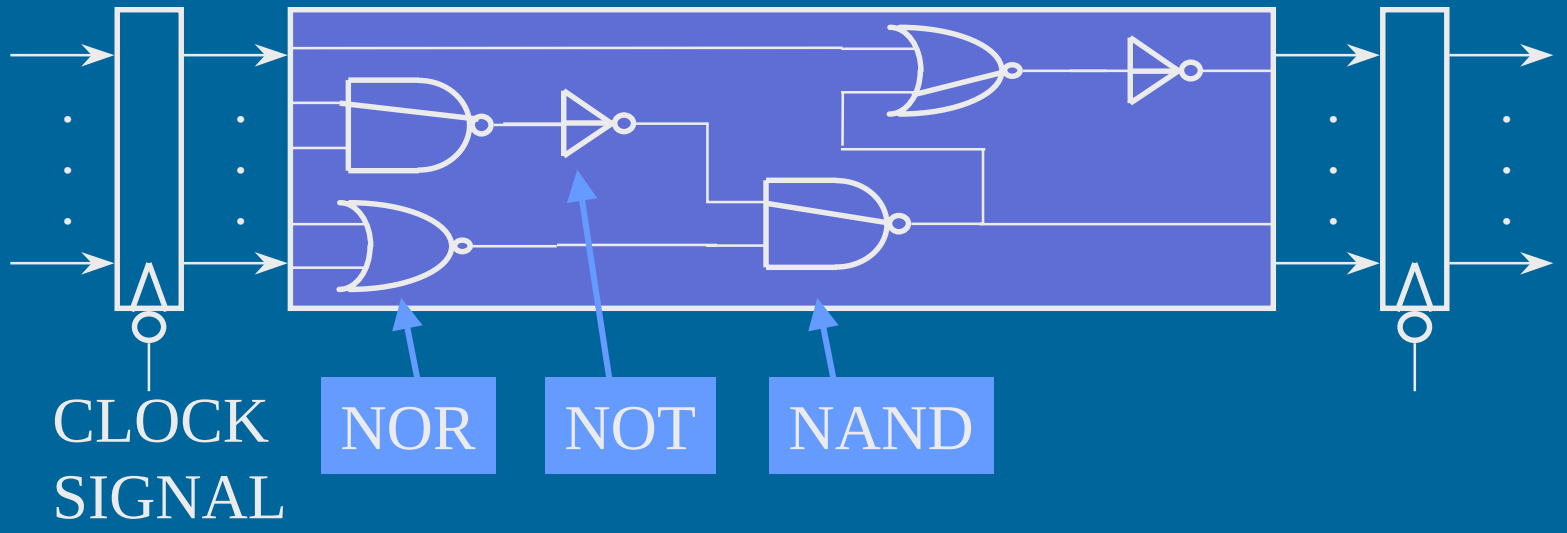
TiTo: What happens is system

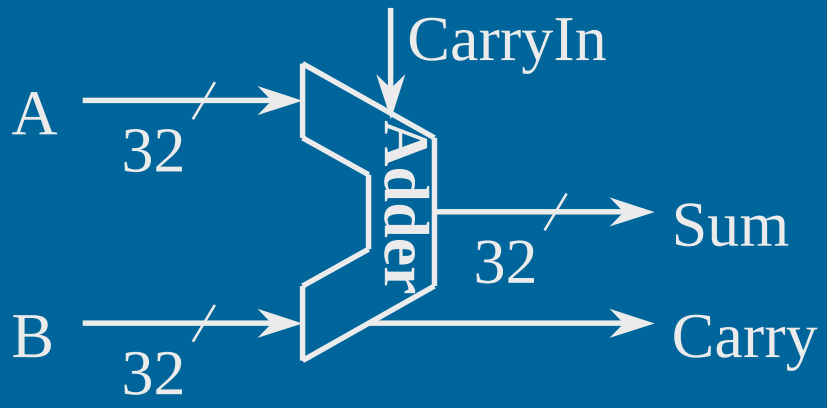
TiKRa: How are CPU & memory implemented?

The Lowest Presentation Level for Comp Org I (TiTo)



The Lowest Presentation Level for Comp Org II (TiKRa)





Contents

- Computer system - overall structure (Ch 1-7)
- System buses (Ch 3)
- Digital logic (App A)
- Memory hierarchy (Ch 4.3, 7.3)
- Computer arithmetic (Ch 8)
- Instruction sets (Ch 9-10)
- CPU structure and function (Ch 11)
- Reduced Instruction Set Computers (Ch 12)
- Instr. level parall. and superscalar proc. (Ch 13)
- Control unit (Ch 14-15)