Lecture 6 Learning outcomes

Upon successful completion of this module, you will be able to:

- Describe the functionality of key building components that make up a CPU
- Build up a datapath for supporting a small set of MIPS instructions
- Trace the datapath for instruction executions
- Design truth tables of control unit for the datapath

Lecture 6 Activities

Lecture 6 study is split into 4-day work.

Day 1

Session I:

View Lecture 6a: Basics for Datapath

Study zyBook 4.1-4.2

Session II:

View Lecture 6b: Datapath for Instructions

Study zyBook 4.3

Session III: Recap and practice

Day 2:

Session I:

View Lecture 6c: A Complete Datapath

Revisit zyBook 4.3

Session II:

Recap and practice

Homework H4 (work on problems related to datapath)

Session III:

Team work on P4

Day 3:

Session I:

View Lecture 6d: ALU Control

Study zyBook 4.4 (ALU control part).

Session II:

View Lecture 6e: Main Control

Study zyBook 4.4.

Session III:

Recap and practice

Complete Homework #4

Day 4

Session I:

Lecture 6e Review and Practice Problem: implementing addi, ori, and bne instructions.

Session II:

Summary and wrap up

Session III:

Work on team project

Assignment Checklist:

P4, Z7 (zyBook 4.1-4.3) -- due Th 6/24

H4, Z8 (zyBook 4.4) -- due Su 6/27