

CS315-02 Instruction Decoding and Control

Lab 05

Tests

Instruction Decoding

IW \rightarrow control signals

Decoders

Reg Decoder - rsl, rs2, rd

Imm Decoder - all immediate types

Inst Decoder

How to add new instructions

- 1) Add any components needs
- 2) Add to the datapath
- 3) Often this will require new MUXes
- 4) Update the Inst Decoder

New control line outputs

Dashboard

x0 D-⓪ zero

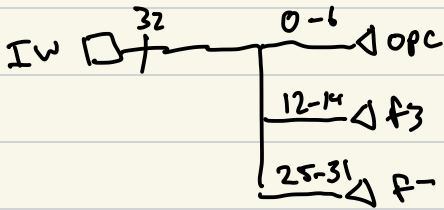
x9 D-⓪ so

x1 D-⓪ ra

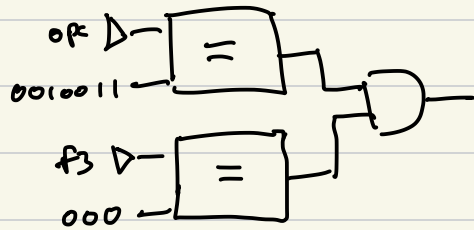
x2 D-⓪ sp

⋮
⋮
⋮
⋮

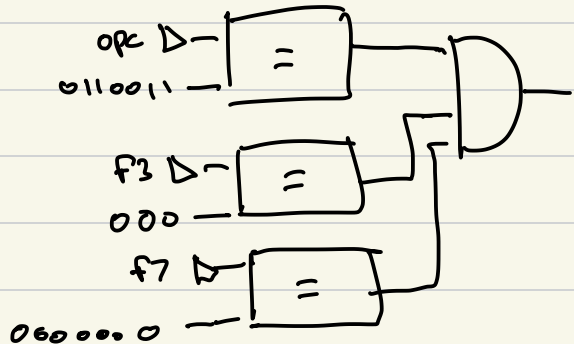
Inst Decoder



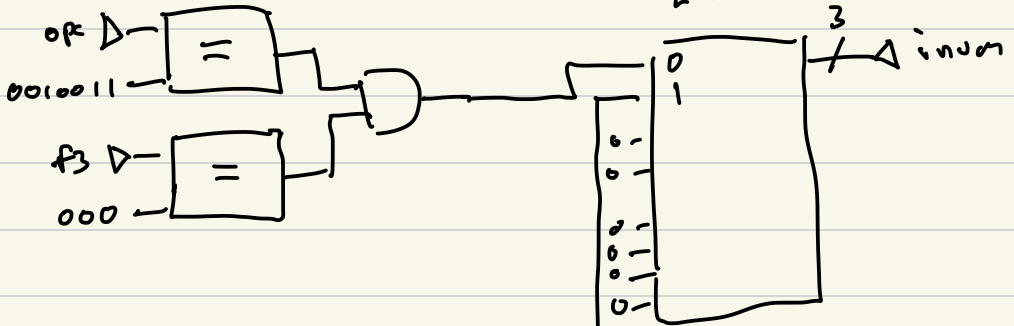
ADDI



ADD



ADDI



ADD

