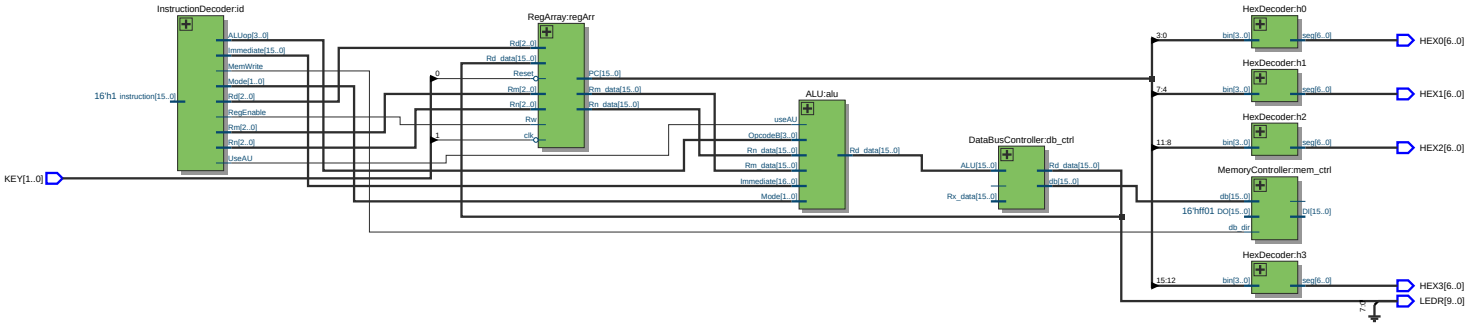
InstructionDecoder:id
16'h1 instruction[15..0]
ALUop[3..0]
Immediate[15..0]
MemWrite
Mode[1..0]
Rd[2..0]
RegEnable
Rm[2..0]
Rn[2..0]
UseAU
KEY[1..0]
RegArray:regArr
Rd[2..0]
Rd_data[15..0]
Reset
Rm[2..0]
Rn[2..0]
Rw
clk
PC[15..0]
Rm_data[15..0]
Rn_data[15..0]
0
1
ALU:alu
useAU
OpcodeB[3..0]
Rn_data[15..0]
Rm_data[15..0]
Immediate[16..0]
Mode[1..0]
Rd_data[15..0]
DataBusController:db_ctrl
ALU[15..0]
Rx_data[15..0]
Rd_data[15..0]
db[15..0]
HexDecoder:h0
3:0
bin[3..0]
seg[6..0]
HEX0[6..0]
HexDecoder:h1
7:4
bin[3..0]
seg[6..0]
HEX1[6..0]
HexDecoder:h2
11:8
bin[3..0]
seg[6..0]
HEX2[6..0]
MemoryController:mem_ctrl
db[15..0]
16'hff01 DO[15..0]
db_dir
DI[15..0]
HexDecoder:h3
15:12
bin[3..0]
seg[6..0]
HEX3[6..0]
LEDR[9..0]
GND