

What Does This Instruction Do?

Starting Processor State

PC = 0x3013

NZP = 010

Register File:

R0 = 0x0007

R4 = 0xFFFE

R1 = 0x0010

R5 = 0x0002

R2 = 0x0005

R6 = 0xFFFF

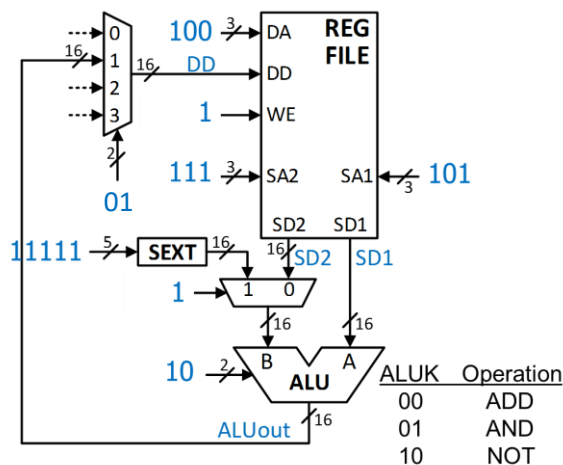
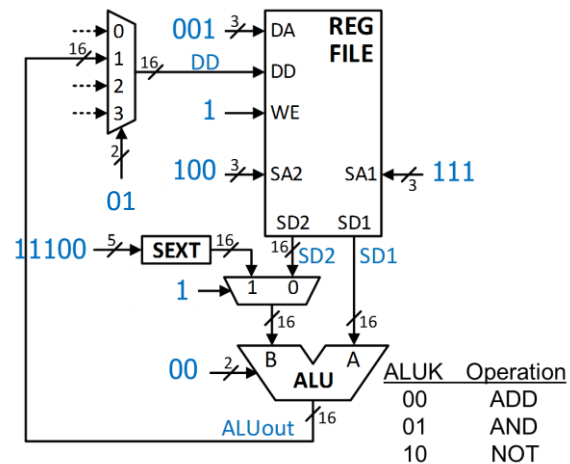
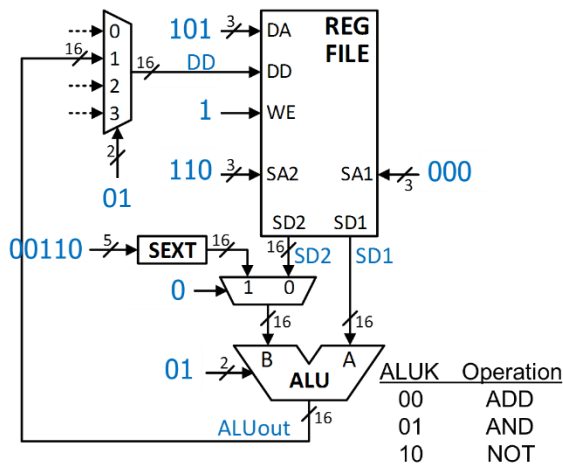
R3 = 0x0001

R7 = 0x0008

IR = 0001 0000 1000 0100

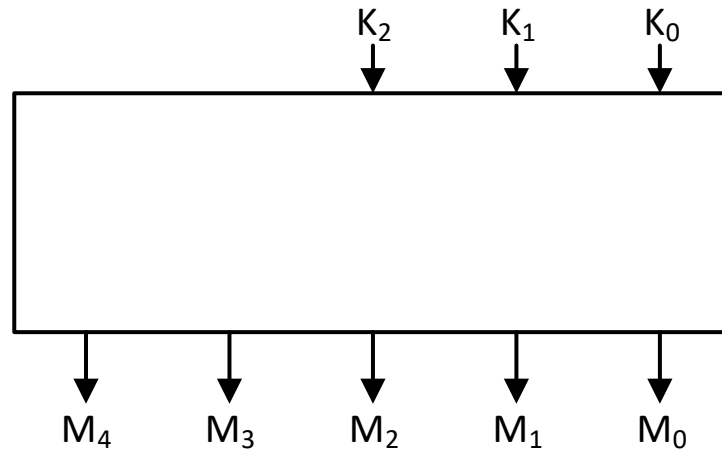
IR = 0101 0010 0011 1111

What Is The Instruction?



Sign-Extension Hardware

Design the hardware to sign-extend a 3-bit 2's-complement number (K) to 5 bits (M)



Programming

Create a program to perform $R4 \leftarrow R3 \times 10_{10}$

Version 1

Version 2