

ECE 376: Handout #6

Assembler Instructions

Assume registers W, X, and Y are have initial values of 5, 6, 7 respectively. Determine the contents of each register after each assembler command.

	W	X	Y
; Start	5	6	7
movlw 13			
movf X,W			
movwf Y			
addwf Y,F			
subwf X,W			
btg X,0			
clrf Y			
incf X,F			
incf Y,W			
andlw 0x03			

Solution

	W	X	Y
; Start	5	6	7
movlw 13 <i>move 13 to W</i>	13	6	7
movf X,W <i>move X to W (read)</i>	6	6	7
movwf Y <i>move W to Y (write)</i>	6	6	6
addwf Y,F <i>Y = Y + W</i>	6	6	12
subwf X,W <i>W = X - W</i>	0	6	12
btg X,0 <i>toggle bit 0 of X</i>	0	7	12
clrf Y <i>clear Y</i>	0	7	0
incf X,F <i>incrment X, result goes in X</i>	0	8	0
incf Y,W <i>increment y, result goes in Y</i>	1	8	0
andwf X,F <i>and W and X, result goes in X</i>	1	0	0