TEJ 4M0 TUTORIAL #6: MORE ON STATUS BITS! Name:

Objective:

To observe the changes of the WREG and GPR registers, STATUS bit Z, DC and C when using various instructions (be able to use your resources (i.e. instruction set sheet) to find answers)

Procedure:

1. For each **Sample Code** below, record the binary contents of the WREG and i registers, then record the status of the Z, DC and C bits for each block of code below. If a bit is not affected by the instruction, then record a N/A ("not affected"). The first one has been done for you. DO NOT use MPLAB to find the answer for you. Do this with only a pencil in hand (and a brain in head!)
2. Now that you have tried each **Sample Code**, verify your answers using MPLAB SIM. Code each sample separately and "Step Into" with *MPLAB SIM* /*Watch* window. Ensure you have the STATUS register open so that you can view the Z, DC and C bits.
3. **Be sure to add the 'goto $' and 'end' lines of code.**

Part	**Sample Code**	**WREG**	**i**	**Z bit**	**DC bit**	**C bit**
a	clrf i movlw 140 addlw 140	b 0001 1000	0000 0000	0	1	1
		d 24	0			
		h 0x18	0 x 0 0			
b	movlw 0x15 movwf i movlw 0x71	b 0000 0001	0001 0101	0	N/A	N/A
		D 1	21			
		H 0x01	0x15			

	andwf i, w					
c	movlw b'10001' movwf i clrf i	B 0001 0001 D 17 H 0x11	0000 0000 0 0x00	0	1	0
d	bsf i, 3 movlw d'8' addwf i,f	B 0000 1000 D 8 H 0x08	0001 0000 16 0x10	0	0	0
e	clrf i movlw d'15' xorlw 0x0F iorlw 0x0F bsf i, 7 btfss STATUS, Z addwf i,w	B 1000 1111 D 143 H 0x8F	1000 0000 128 0x16	0	0	0
f	bsf STATUS, Z bsf STATUS, DC bcf STATUS, C	B 0000 0000 D 0 H 0x00	N/A N/A N/A	1	1	0
g	movlw 0x01	B 0001 1011	0100 0000	0	0	0

	movwf i loop : rlf i,f add wf i,w btfs s i,6 got o loo p	D 27 H 0x1B	64 0x40			

Conclusions: What kind of programming structure (i.e. selection, looping) is part e? part g?