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	0x00			
b	movlw 0x15 movwf i movlw 0x71 andwf i, w	b				
		d				
		h				
c	movlw b'10001' movwf i clrf i	b				
		d				
		h				
d	bsf i, 3 movlw d'8' addwf i,f	b				
		d				
		h				
e	clrf i movlw d'15' xorlw 0x0F iorlw 0x0F bsf i, 7 btfss STATUS, Z addwf i,w	b				
		d				
		h				
f	bsf STATUS, Z bsf STATUS, DC bcf STATUS, C	b				
		d				
		h				
g	movlw 0x01 movwf i loop: rlf i,f addwf i,w btfss i,6 goto loop	b				
		d				
		h				

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