

ECE 376 - Homework #2

Assembler, Flow Charts. Due Monday, January 23rd
Please submit as a hard copy or submit on BlackBoard

Assembler Programming

1) Determine the contents of registers W, A, and B after each assembler command:

Command	W	A	B
; Start	15	7	3
movlw 254			
addwf A,F			
movff A,B			
andlw 0x0F			
andwf A,F			
iorwf B,F			

2) Convert the following C code to assembler (8-bit operations)

```
unsigned char A, B, C;  
  
A = 2*B + 6*C + 3;
```

3) Convert the following C code to assembler: (16-bit operations)

```
unsigned int A, B, C;  
  
A = 2*B + 6*C + 3;
```

4) Convert the following C code to assembler (if-statements)

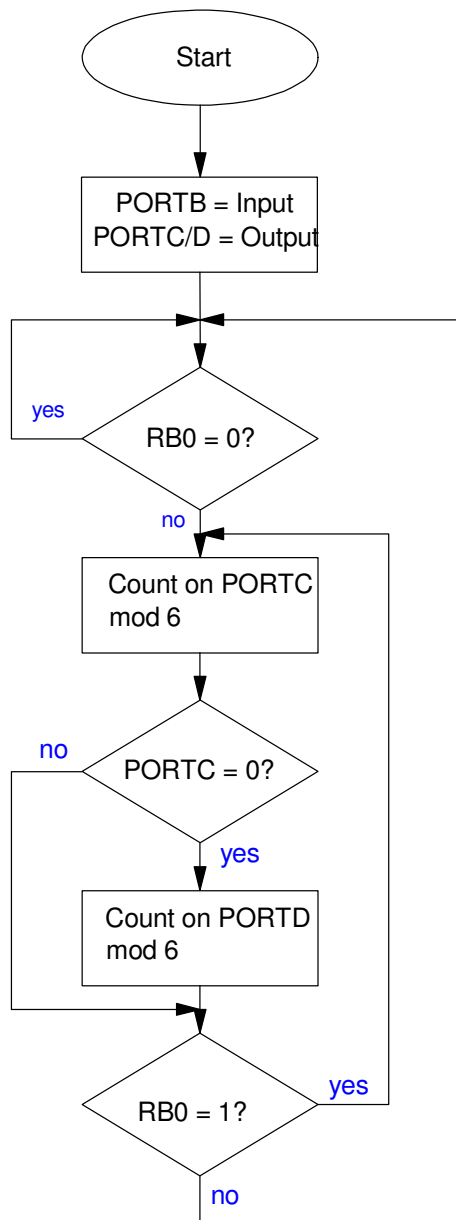
```
unsigned char A, B;  
  
A = A & 0x0F;  
if(A == 0) B = 1;  
if(A == 1) B = 2;  
if(A == 2) B = 4;  
if(A == 3) B = 8;
```

5) (20 points) The flow chart below rolls two six-sided dice

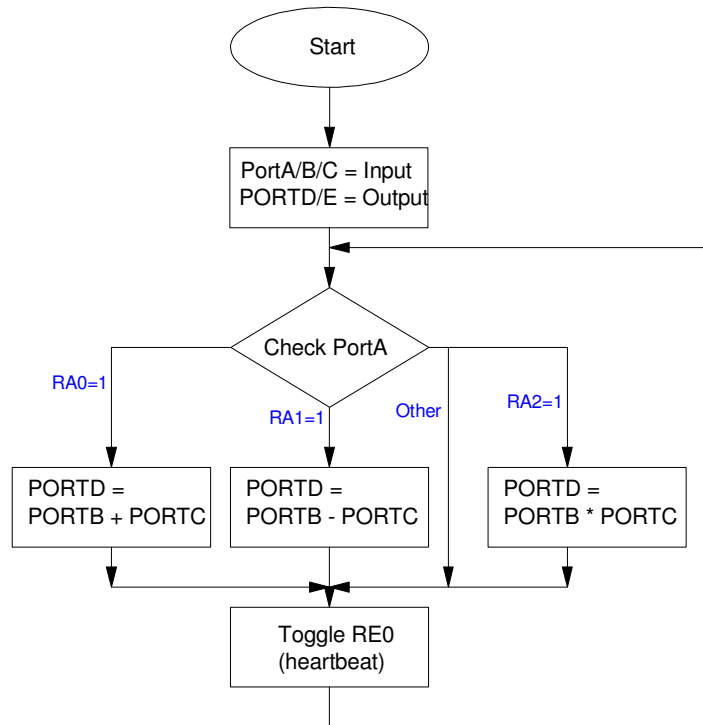
- Press RB0 to roll the dice (count really fast)
- Release RB0 to see the result on PORTC and PORTD

Write the corresponding assembler code.

6) (20 points) The flow chart below turns your PIC into an 8-bit calculator that adds, subtracts, and multiplies. Write the corresponding assembly code



Problem 5: Roll 2d6



Problem #6