ECE 376 - Homework #2

Assembler, Flow Charts. Due Monday, January 25th

Please make the subject "ECE 376 HW#2" if submitting homework electronically to Jacob_Glower@yahoo.com (or on blackboard)

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

unsigned char A, B, C; A = 2*B + 3*C + 4;

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

unsigned int A, B, C; A = 2*B + 3*C + 4;

3) Convert the following C code to assembler (traffic light controller: output green, yellow, red)

```
unsigned char A, B;
A = A + 1;
if(A > 2) A = 0;
if(A == 0) B = 1;
else if(A == 1) B = 2;
else B = 4;
```

4) Convert the following C code in to assembler

```
unsigned char A, B, C;
A = 0;
while(A < 10) {
    B = B + C;
    A = A + 1;
  }
```

- 5) The flow chart below turns your PIC into an electornic slot machine:
 - Press RB0 to play RB0 is PORTB pin 0 (RB0 is the name for that pin in C code)
 - If the number 5 comes up (1 in 8 chance), you win \$7. Otherwise you lose \$1

Write the corresponding assembler code.

6) The flow chart below turns your PIC into an electronic voting machine

- On reset, all votes are set to zero (Va = Vb = Vc = 0)
- When RB0 is pressed, one vote is counted for candidate A
- When RB1 is pressed, one vote is counted for candidate B
- When RB2 is pressed, one vote is counted for candidate C

Write the corresponding assembler code

