## 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 $\quad$ RBO is PORTB pin 0 ( $R B 0$ 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 $(\mathrm{Va}=\mathrm{Vb}=\mathrm{Vc}=0)$
- 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


Problem 6: Votina Machine

