Lab 6 Pseudocode

//Function Prototypes

void Port_Init(void), void PCA_Init (void), void XBR0_Init(), void SMB_Init(void), void ADC_Init(void), unsigned char read_AD_input(unsigned char n), void PCA_ISR (void) __interrupt 9,
void tiltConfig(void), unsigned int RangerRead(void), void pause(unsigned char m), void ErrorandHeading(void), void Setup(void), unsigned int CompassRead(void), void updateFans(long fanPW);

//Global Variables

unsigned int __xdata PCA_start = 28672, signed int __xdata PW_FAN_C = 2750, signed int __xdata PW_FAN_R = 2000, signed int __xdata PW_FAN_F = 3500 signed int __xdata NOM_DIST = 75,
signed int __xdata NOM_SPEED = 100, char new_range = 0, char new_compass = 0, char RangerCount = 0, char CompassCount = 0, signed int Kp = 0, signed int Kd = 0, signed int desired,
signed int new_desired, char input, int counts = 0, char display_count = 0, int mult, int heading, int old_heading, unsigned int PW, long tmp_pw, signed int new_error = 0,
signed int old_error = 0, signed int speed, signed int range = 50, int volt

//Main Function

call Inits (Sys Init, putchar, Port Init, XBRO Init, PCA Init, SMB Init, ADC Init)
pause(50) //long pause for things to warm up
call "setup" function to set gains and desired heading
define the values to be printed
while(1)
    if(new_range)
        range = ranger value
        new_range = 0
    if(new_compass)
        heading = compass value
        call "ErrorandHeading" function to calculate error and change desired heading based off range
        tmp_pw = motor neutral + kp*error/10 + kd*change in error
        make sure tmp_pw within range
        set motor pulsewidth
        reset motor pulsewidth based off rotational speed if need be
        new_compass = 0
    if(display_count >=10)

calculate voltage
printf necessary values
lcd print heading, range, and voltage
display_count = 0