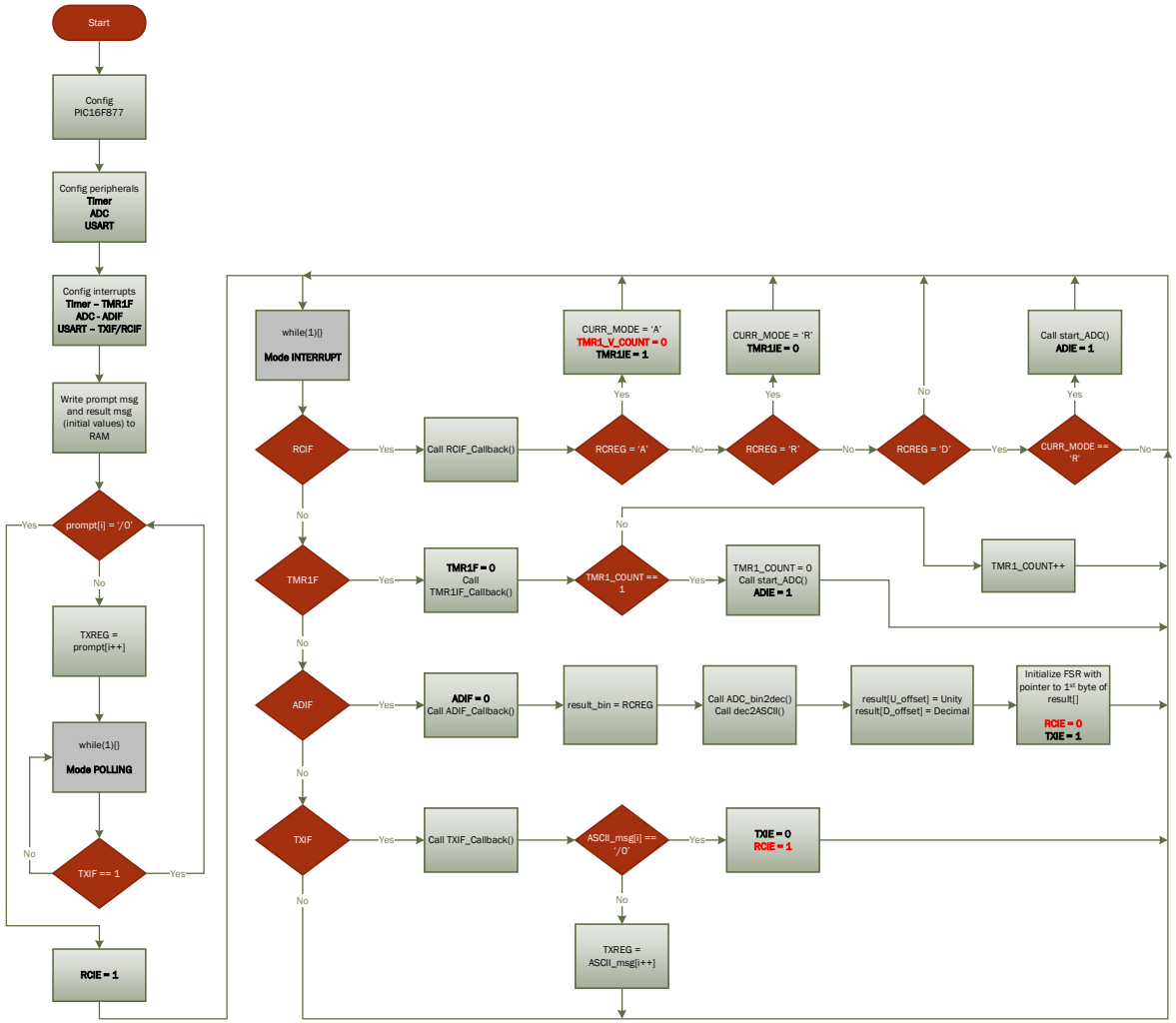
Start
Config PIC16F877
Config peripherals
Timer
ADC
USART
Config interrupts
Timer – TMR1F
ADC - ADIF
USART – TXIF/RCIF
Write prompt msg and result msg (initial values) to RAM
prompt[i] = '/0'
Yes
No
TXREG = prompt[i++]
while(1){}
Mode POLLING
TXIF == 1
No
Yes
RCIE = 1
while(1){}
Mode INTERRUPT
RCIF
Yes
Call RCIF_Callback()
RCREG = 'A'
Yes
CURR_MODE = 'A'
TMR1_V_COUNT = 0
TMR1IE = 1
No
RCREG = 'R'
Yes
CURR_MODE = 'R'
TMR1IE = 0
No
RCREG = 'D'
Yes
CURR_MODE == 'R'
Yes
Call start_ADC()
ADIE = 1
No
TMR1F
Yes
TMR1F = 0
Call TMR1IF_Callback()
TMR1_COUNT == 1
No
Yes
TMR1_COUNT = 0
Call start_ADC()
ADIE = 1
TMR1_COUNT++
No
ADIF
Yes
ADIF = 0
Call ADIF_Callback()
result_bin = RCREG
Call ADC_bin2dec()
Call dec2ASCII()
result[U_offset] = Unity
result[D_offset] = Decimal
Initialize FSR with pointer to 1st byte of result[]
RCIE = 0
TXIE = 1
No
TXIF
Yes
Call TXIF_Callback()
ASCII_msg[i] == '/0'
Yes
TXIE = 0
RCIE = 1
No
TXREG = ASCII_msg[i++]
No