

8-bit binary temperature value from ADC in Celsius
Temperature values range from 0-45 degrees Celsius
Array called Celsius_Temps carry the 16 bytes of temperature values

Registers:

R0-R3 pass parameters or pointers to procedure
R0 used to pass back parameter to calling program
R4-R10 must be saved by procedure
R13 stack pointer
R14 link register

First program objective: To calculate the rounded average of the 16 bytes and store it into Celsius_Av

Algorithm:

Initialize a counter to 16 for the amount of temperature values
Initialize a pointer to temperature values(Celsius_Temps)
If counter not equal to 0 repeat
 Load value from Celsius_Temps and increment pointer
 Add values to perform an average calculation
 Decrement counter
End repeat
Right shift by 4 to divide by 16
Store value into Celsius_Av
End program