```
/*
  Initiating ADC Conversion:
    1. Writing to ATD0CTL5
    2. Edge on external trigger
    3. Level on external trigger

  Completed Conversion
    1. Reading ATD0STAT1
    2. Interrupt when complete
*/

#include <hidef.h>      /* common defines and macros */
#include <mc9s12dp512.h>     /* derivative information */
#pragma LINK_INFO DERIVATIVE "mc9s12dp512"

#define PROCEDURE 2
#include "PLL.h"
#include "ADC.h"
#include "OC.h"
#include "lcd.h"
#include "temperature.h"
#include <stdio.h>

#if PROCEDURE == 1
#include "SCI0.h"

unsigned short DataBuffer[100];
unsigned short Count=0;
void back(void) {
  unsigned short data;
  if(Count<100) {
    data = ADC0_In(0x80); // your program that samples channel 5
    DataBuffer[Count++] = data;
  }
}
void main(void){unsigned short i;
  PLL_Init(); // 24 MHz
  ADC0_Init(); // your module
  SCI0_Init(115200); // SCI output to PC
  OC0_Init(1000,&back); // your module sampling at 1000 Hz

  asm cli;
  while(Count<100) {}; // copy ADC to buffer in background
  for(i=0; i<100; i++) {
    SCI0_OutUDec(DataBuffer[i]); SCI0_OutChar(10);SCI0_OutChar(13);
  }
  for(;;){};
}

#else
#include "FIFO.h"

void getData(void) {
  unsigned short data;
  data = ADC0_In(0x82);
  while(!Fifo_Put(data)) {}
}

void main(void) {
  char buffer[10] = "";
  // Initialize needed modules
  DDRP |= 0x80;
  PLL_Init();
  Fifo_Init();
  ADC0_Init();
  OC0_Init(100, &getData);
  LCD_Open();

  LCD_Clear();
  sprintf(buffer, "     %cC", 223);
  LCD_OutString(buffer);

  asm cli

  for(;;) {
    unsigned short data;
    unsigned short temperature;
    while(!Fifo_Get(&data)) {}
```

```
 79:
 80:     temperature = Temp_Data(data);
 81:     sprintf(buffer, "%2d.%02d", temperature/100, temperature%100);
 82:     //sprintf(buffer, "%4d", data);
 83:     LCD_GoTo(0,0);
 84:     LCD_OutString(buffer);
 85:
 86:   }
 87: }
 88: #endif
```