Real Time Systems Assignment 1.2


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Class: DCOM4

Problem 1.2 Code

Using alarm cycle to iterate through an array to simulate reading in from a sensor. _os_alarm_cycle sends a signal after the specified time interval has elapsed and then resets the alarm. The purpose of this is that it provides a recurring periodic signal. The minimum time interval allowed is two system clock ticks.

Diagram

P1_2
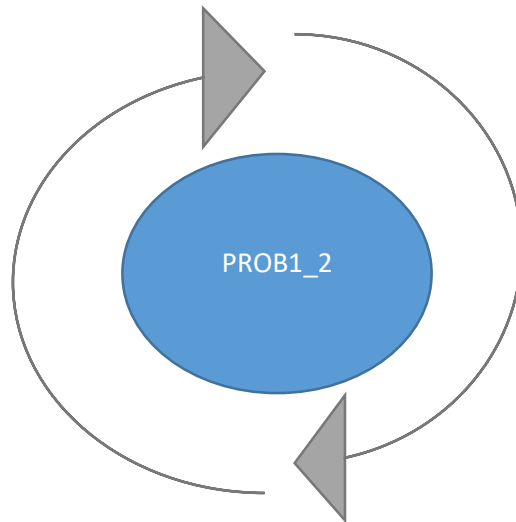
Code

```c
#include <alarm.h>
#include <types.h>
#include <signal.h>
#include <stdio.h>
#include <errno.h>
#include <cglob.h>


main(){
        signal_code ReceivedSginal;
        u_int32 SleepValue;

        alarm_id MyAlarm;
        signal_code WakeupSignal;

        u_int32 TimeToDelay;
        u_int32 i;

   int    reads[] = {2, 4, 6, 8, 10};
        i = 0;

        TimeToDelay = 3900;
        WakeupSignal = 1;

        if ((errno = _os_alarm_cycle(&MyAlarm, WakeupSignal, TimeToDelay)) != 0)
                {
                        printf("error creating alarm\n");
                }

        SleepValue = 0; /* Infinite loop, sleep forever */


        while (1){
                _os_sleep(&SleepValue, &ReceivedSginal);
                if(ReceivedSginal ==0){
                        printf("P1_2: %d\n", reads[i]);
                        if(      i==4)
                                i=0;
                        else
                                i= i +1;
                }
                else
                        printf("P1_2: The signal value which caused the alarm is %d\n",
ReceivedSginal);

                }
        }
```
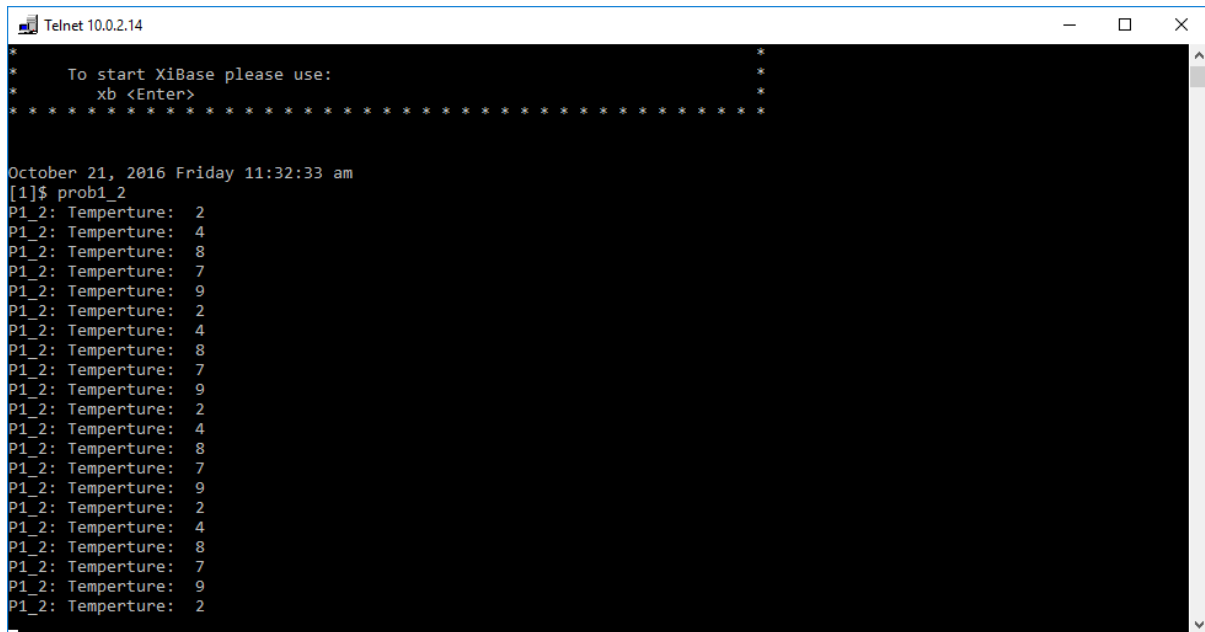
Output

October 21, 2016 Friday 11:32:33 am

[1]$ prob1_2

P1_2: Temperture: 2

P1_2: Temperture: 4

P1_2: Temperture: 8

P1_2: Temperture: 7

P1_2: Temperture: 9

P1_2: Temperture: 2

P1_2: Temperture: 4

P1_2: Temperture: 8

P1_2: Temperture: 7

P1_2: Temperture: 9

P1_2: Temperture: 2

P1_2: Temperture: 4

P1_2: Temperture: 8

P1_2: Temperture: 7

P1_2: Temperture: 9

P1_2: Temperture: 2

P1_2: Temperture: 4

P1_2: Temperture: 8

Status: 100%

Declaration of work

This report has been constructed and produced by Michael O' Sullivan. I declare that the report and its contents have been produced by Michael O Sullivan and is entirely his own work.

Mr. Michael O'Sullivan

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X_____Michael O Sullivan_____

Date: 21   / 10   / 16