Objective:

Understand the basic handling of a real-time operating system.

Preparation:

2.1. Prepare the code of the tasks below.

2.2. Set up a graphic representation of tasks, semaphores, variables.

Task:

3.1. Set up a program using means (tasks, semaphores) offered by VxWorks.

3.2. The first task shall do the following:
- It creates and starts all the other tasks.
- It creates semaphores (if needed).
- It goes into the suspended state.

3.3. The second task shall do the following:
- It starts counter a as an auto-reload timer with a period of 50 ms.
- The interrupt generated by this counter activates the task.
  This shall be done with a semaphore.
- The task reads the analog inputs of both the potentiometer and the temperature.
- If the values have changed compared to the previous ones, these shall be written into global variables (AIn).
- A hysteresis of e.g. 10 – 20 bit is necessary due to the noise of the analog inputs.

3.4. The third task shall do the following:
- It writes the values of the global variables (AIn) onto the display.
- This shall happen approx. each 100 ms.

Report:

Not requested.

Notes:

5.1. Use the hardware access functions supplied (See HwFunc.pdf).

5.2. You have to include the following header files:
- #include <stdlib.h>
  #include <stdio.h>
  #include <intLib.h>
  #include <taskLib.h>
  #include <sysLib.h>