Exercise 12 Multiplex

In this exercise we will look at using a semaphore to control access to a function by creating a multiplex.

 In the Pack Installer select "Ex 12 Multiplex" and copy it to your tutorial directory.

The project creates a semaphore called semMultiplex which contains one token. Next, six instances of a thread containing a semaphore multiplex are created.

Build the code and start the debugger

Open the Peripherals → General Purpose IO → GPIOB window

Run the code and observe how the tasks set the port pins

As the code runs only one thread at a time can access the LED functions so only one port pin is set.

Exit the debugger and increase the number of tokens allocated to the semaphore when it is created

        semMultiplex = osSemaphoreNew(5, 3,&semAttr_Multiplex);

Build the code and start the debugger

Run the code and observe the GPIOB pins

Now three threads can access the led functions 'concurrently'.