

Introduction to Embedded Systems – Exercise #2

Remember the Fibonacci numbers:
$$F(n) = \begin{cases} 0 & \text{if } n = 0 \\ 1 & \text{if } n = 1 \\ F(n-2) + F(n-1) & \text{if } n > 1 \end{cases}$$

Tasks:

- Download the software *LeviKPN* from <http://bit.ly/2rvLeZ0> in order to specify and simulate your Kahn process network. For installation, you just need to unpack the zip file.
- Create the following simple processes:
 - **Process Init1(input A, output B):** At the start, it sends just once the integer value “1” on its output channel. Afterwards, it executes in an infinite loop: Read one value from the input channel and put it on the output channel.
 - **Process Init0(input A, output B):** At the start, it sends just once the integer value “0” on its output channel. Afterwards, it has the same behavior like process init1.
 - **2 x Process Dup(input A, output B, C):** It executes in an infinite loop: Read one value from the input channel and put the value on both output channels.
 - **Process Add(input A, B, output C):** It executes in an infinite loop: Read one value from each input channel. Add the two values. Put the result on its output channel.
 - **Process Sink(input A):** In an infinite loop, this process reads one value from the input channel per cycle.
- Develop a process network which produces the sequence of the Fibonacci numbers. Use the processes created in the previous task.
- Start the visualization and check if your process network is correct.

Hints:

- Use the online help of *leviKPN* to find details about the usage of this software.