

# Real Time Systems, 10c

## Lab1

To run one of the programs, navigate to the folder "lab1". Execute "make partX" from the terminal to compile and run part X. For example "make part1" will compile and run the first part of the lab.

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### Part1 - Cyclic Scheduler

```
F1 executing, time is now: 1.000913000
F2 executing, time is now: 1.000955000
  F3 executing, time is now: 1.501676000
F1 executing, time is now: 2.003221000
F2 executing, time is now: 2.003249000
F1 executing, time is now: 3.005168000
F2 executing, time is now: 3.005181000
  F3 executing, time is now: 3.503962000
F1 executing, time is now: 4.005239000
F2 executing, time is now: 4.005270000
F1 executing, time is now: 5.005174000
F2 executing, time is now: 5.005187000
  F3 executing, time is now: 5.504640000
F1 executing, time is now: 6.001982000
F2 executing, time is now: 6.002012000
F1 executing, time is now: 7.005174000
F2 executing, time is now: 7.005187000
  F3 executing, time is now: 7.505156000
F1 executing, time is now: 8.005226000
F2 executing, time is now: 8.005243000
F1 executing, time is now: 9.005167000
F2 executing, time is now: 9.005179000
  F3 executing, time is now: 9.505159000
F1 executing, time is now: 10.005219000
F2 executing, time is now: 10.005233000
F1 executing, time is now: 11.001046000
F2 executing, time is now: 11.001078000
  F3 executing, time is now: 11.505898000
F1 executing, time is now: 12.002016000
F2 executing, time is now: 12.002031000
F1 executing, time is now: 13.005166000
F2 executing, time is now: 13.005178000
  F3 executing, time is now: 13.505221000
F1 executing, time is now: 14.005160000
F2 executing, time is now: 14.005174000
F1 executing, time is now: 15.005189000
F2 executing, time is now: 15.005204000
```

## Part2 - Watchdog

```
F1 executing, time is now: 1.001350000
F2 executing, time is now: 1.001377000
  F3 executing, time is now: 1.501676000
F1 executing, time is now: 2.000667000
F2 executing, time is now: 2.000681000
F1 executing, time is now: 3.001215000
F2 executing, time is now: 3.001229000
  F3 executing, time is now: 3.501361000
  Warning, F3 still running
F1 executing, time is now: 5.001150000
F2 executing, time is now: 5.001172000
F1 executing, time is now: 6.001154000
F2 executing, time is now: 6.001168000
  F3 executing, time is now: 6.501195000
  Warning, F3 still running
F1 executing, time is now: 9.001162000
F2 executing, time is now: 9.001175000
F1 executing, time is now: 10.001159000
F2 executing, time is now: 10.001175000
  F3 executing, time is now: 10.501531000
  Warning, F3 still running
F1 executing, time is now: 12.001164000
F2 executing, time is now: 12.001178000
F1 executing, time is now: 13.001209000
F2 executing, time is now: 13.001223000
  F3 executing, time is now: 13.501459000
F1 executing, time is now: 14.001182000
F2 executing, time is now: 14.001195000
F1 executing, time is now: 15.001224000
F2 executing, time is now: 15.001237000
  F3 executing, time is now: 15.501462000
  Warning, F3 still running
F1 executing, time is now: 18.001167000
F2 executing, time is now: 18.001181000
F1 executing, time is now: 19.001219000
F2 executing, time is now: 19.001233000
  F3 executing, time is now: 19.501369000
F1 executing, time is now: 20.001222000
```

## Part3 - FIFO

```
Consumed: 24
Produced: 24
    * Total sum is 24
Produced: 11
Consumed: 11
    * Total sum is 35
Produced: 9
Consumed: 9
    * Total sum is 44
Produced: 10
Consumed: 10
    * Total sum is 54
Produced: 3
Produced: 1
Produced: 0
Produced: 0
Consumed: 3
    * Total sum is 57
Produced: 23
Produced: 3
Consumed: 1
    * Total sum is 58
Produced: 22
Consumed: 0
    * Total sum is 58
Consumed: 0
    * Total sum is 58
Consumed: 23
    * Total sum is 81
Produced: 22
Produced: 0
Produced: 5
Consumed: 3
    * Total sum is 84
Consumed: 22
    * Total sum is 106
Task Buffer is terminated
Task Producer was terminated
Total sum is over 100
```

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Part4 - FIFO protected

```
Produced: 22
Consumed: 22
  * Total sum is 22
Produced: 6
Produced: 4
Produced: 9
Consumed: 6
  * Total sum is 28
Produced: 4
Consumed: 4
  * Total sum is 32
Consumed: 9
  * Total sum is 41
Consumed: 4
  * Total sum is 45
Produced: 23
Consumed: 23
  * Total sum is 68
Produced: 14
Consumed: 14
  * Total sum is 82
Produced: 9
Consumed: 9
  * Total sum is 91
Produced: 20
Consumed: 20
  * Total sum is 111
Task Producer was terminated
Total sum is over 100
```