

MACHINE*scheduler_main***INCLUDES***scheduler***PROMOTES***delete, activate***DEFINITIONS***SET_PREF_MAXINT* == 100000 ;*SET_PREF_MAX_OPERATIONS* == 100 ;**CONSTANTS***time***PROPERTIES***time* ∈ *PID* → **NAT** ∧*time* = {

(process1 ↦ 10),

(process2 ↦ 5),

(process3 ↦ 2),

(process4 ↦ 4),

(process5 ↦ 7)

}

VARIABLES*tic, waiting_time, execution_time***INVARIANT***tic* ∈ **NAT**∧ *waiting_time* ∈ *PID* → **NAT**∧ *execution_time* ∈ *PID* → **NAT****INITIALISATION***tic* := 0 ||*waiting_time* := ∅ ||*execution_time* := ∅**OPERATIONS****start**(*pp*) =**PRE** *pp* ∈ *PID* **THEN****new**(*pp*) || **waiting_time**(*pp*) := 0 || **execution_time**(*pp*) := *time*(*pp*)**END** ;**step** =**BEGIN***tic* := *tic* + 1 ;*execution_time* := *execution_time* ⋈ {*pp, ee* | *pp* ∈ *active* ∧ *ee* = **execution_time**(*pp*) -

1} ;

IF *execution_time*[*active*] = {0} **THEN***waiting_time* := *active* ⋈ *waiting_time* ;*execution_time* := *active* ⋈ *execution_time* ;**swap****ELSE****skip****END** ;

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    waiting_time := (  $\lambda$  pp.(pp  $\in$  PID | waiting_time(pp) + 1))  
  END  
END
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