



POLITECNICO
MILANO 1863

Process Management

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ACSO Tutoring

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General assumptions

- When a new task is created, the creating task proceeds in execution (it remains in running state), if possible
- When the set of tasks in READY state is modified
 - the task undergoing the state transition WAITING READY (if any) is immediately scheduled for RUNNING
 - otherwise, the task scheduled for RUNNING is the one in the READY state from the longest time.
The idle task should be considered for running iff it is the only task in ready state
- When a task switches in WAITING state, the name of the system/library call that caused the state transition has to be specified in brackets.

General assumptions

- In the simulation:
 - consider only the system/library calls **bold** in the code
 - the execution time (in user mode) between one system/library call and the following is equal to 10 udt
 - execution of the `exec` function does not suspend the task
 - execution of the *open*, *read*, *write* and *close* functions always implies access to disk
- PID actually refers to the TID
- TGID actually refers to the PID

Exercise 1 (Thread & Parallelism)

21/02/2013

Condition	<i>local</i> in TH_1	<i>local</i> in TH_9
After stat. A	<i>EXISTS</i>	<i>CAN EXIST</i>
After stat. C	<i>CAN EXIST</i>	<i>EXISTS</i>
After stat. D	<i>CAN EXIST</i>	<i>DOESN'T EXIST</i>

Condition	<i>MIDDLE</i> {0,1}	<i>global</i> {0,1,2,3,4,9}
After stat. A	<i>0 / 1</i>	<i>0 / 3 / 4 / 9</i>
After stat. B	<i>0</i>	<i>1 / 9</i>
After stat. C	<i>0 / 1</i>	<i>1 / 2 / 3</i>
After stat. D	<i>0 / 1</i>	<i>1 / 2 / 9</i>

Exercise 1 (Thread & Parallelism)

21/02/2013

TH_1	TH_9	<i>global</i>
<i>sem_wait (MIDDLE)</i>	<i>mute_lock (INNER)</i>	<i>1</i>

Exercise 3 (Process State)

29/08/2017

Task name		IDLE	P	F1	F2	R
	PID	1	2	3	4	5
	TGID	1	2	3	4	5
	0	READY	EXEC	NOT EXIST		
<i>P-fork</i>	<i>10</i>	<i>READY</i>	<i>EXEC</i>	<i>READY</i>		
Interrupt from RT_clock, time quantum expired for the running task	<i>20</i>	<i>READY</i>	<i>READY</i>	<i>EXEC</i>		
<i>F1-execl</i>	<i>30</i>	<i>READY</i>	<i>READY</i>	<i>EXEC</i>		
<i>F1-read</i>	<i>40</i>	<i>READY</i>	<i>EXEC</i>	<i>WAIT (read)</i>		
<i>P-fork</i>	<i>50</i>	<i>READY</i>	<i>EXEC</i>	<i>WAIT (read)</i>	<i>READY</i>	
<i>P-wait</i>	<i>60</i>	<i>READY</i>	<i>WAIT (wait)</i>	<i>WAIT (read)</i>	<i>EXEC</i>	
<i>F2-execl</i>	<i>70</i>	<i>READY</i>	<i>WAIT (wait)</i>	<i>WAIT (read)</i>	<i>EXEC</i>	
5 interrupts from standard input, all data have been read	<i>80</i>	<i>READY</i>	<i>WAIT (wait)</i>	<i>EXEC</i>	<i>READY</i>	
<i>F1-fork</i>	<i>90</i>	<i>READY</i>	<i>WAIT (wait)</i>	<i>EXEC</i>	<i>READY</i>	<i>READY</i>
<i>F1-exit</i>	<i>100</i>	<i>READY</i>	<i>EXEC</i>	<i>NOT EXIST</i>	<i>READY</i>	<i>READY</i>