

HW3

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References used:

<https://www.youtube.com/watch?v=21SVYiKhcwM> – **Very helpful**

<https://www.youtube.com/watch?v=fEnWqibCwo0>

<https://moodle.tau.ac.il/course/view.php?id=512440201>

<https://pdos.csail.mit.edu/6.828/2018/xv6/book-rev11.pdf>

Makefile

Added `_ps\` to UPROGS so the user space will include this capability when calling `ps` in the command line.

defs.h

Added declaration of struct processInfo which is implemented in its header file.

Added the required system calls to proc.c block so they will be available to the user space.

proc.c:

Included the processInfo header.

Initiated nrswitch to zero.

Incremented nrswitch whenever switch() function was called (sched and scheduler).

Implemented getNumProc():

- Runs over the processes list and counts the amount of living processes.
- Uses lock to hold the status since it began executing.
- For debug purposes the if states are explicit (was easier that way to add prints).

Implemented getMaxPid():

- Runs over the processes list and returns the max pid of all living processes.
- Uses lock to hold the status since it began executing.

Implemented getProcInfo():

- Given both process pid and processInfo pointer, if the process is not alive returns -1, otherwise updates the processInfo and returns 0.
- Uses lock to hold the status since it began executing.

proc.h

Added a nrswitch attribute to the struct proc.

processInfo.h:

Created a new file containing declaration of processInfo as instructed.

ps.c:

Created new file containing implementation of the ps call using command line:

- Uses `getNumProc()`, `getMaxPid()`, `getProcInfo()` syscalls.
- Exit the program after finishing the prints and releasing the used memory.

syscall.c:

Added the declaration of the new required functions to the syscall lists.

syscall.h:

Added definition of the new required syscalls as the new biggest numbers.

sysproc.c:

Added the translation from the syscalls to the implementations with the appropriate argumanets for each one.

user.h:

Included the processInfo header file.

Added the new required system calls to the syscalls declarations.

usys.S:

Added the new required system calls to the source file.