**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 nrswich to zero.

Incremented nrswitch whenever swtch() 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.