

## Lab 4 (CS): Processes & Threads

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## Exercise 1

- Create a program that declares a variable  $n$ , forks a new process and prints “Hello from parent [PID -  $n$ ]” and “Hello from child [PID -  $n$ ]” from parent and child processes respectively. Run it 10 times and explain the output
- Hint: to run it  $N$  times you must write a shell script

## Exercise 2

- Write a program that calls `fork()` in a loop 3 times and sleeps for 5 seconds. Run the program in background and run **pstree** command several times. Look at the output and tell how many processes are created. Explain the result
- Change the program so that it would call `fork()` 5 times. See how the result changes

## Exercise 3

- Write your own simplistic shell. It should read user input and be able to run a command without parameters, such as `pwd`, `ls`, `top`, `pstree` and so on
- Hint: use `man system`

## Exercise 4

- Extend your previous code to handle commands with parameters and running processes in background
- Hint: use `man fork` and `man execve`

End of lab 4 (CS)