# Lab Assignment 2: Hands-on with xv6 OS

Individual Assignment

**Task-0.1: Install tools necessary for downloading and booting xv6 OS**
Reference: **https://pdos.csail.mit.edu/6.828/2023/tools.html**

**Task-0.2: Download and run (boot) xv6 teaching OS on your Linux machine**

```
$ git clone https://github.com/mit-pdos/xv6-riscv.git
$ cd xv6-riscv
$ make qemu #boots xv6 teaching OS
```

**Task-1.1: Write user-level sleep program for xv6**

Implement a user-level program in C for xv6, along the lines of the UNIX sleep command. Your sleep should pause for a user-specified number of ticks as the command-line argument. A tick is a notion of time defined by the xv6 kernel, namely the time between two interrupts from the timer chip. Your program should be in the file user/sleep-<RollNo>.c.

**Task-1.2: Write pingpong for IPC between two processes for xv6**

Write a user-level program in C that uses xv6 system calls to "ping-pong" a byte between two processes over a pair of pipes, one for each direction. The parent should send a byte to the child; the child should print "<pid>: received ping", where <pid> is the process ID of the child, write the byte on the pipe to the parent, and exit; the parent should read the byte from the child, print "<pid>: received pong", and exit. Your program should be in the file user/pingpong-<RollNo>.c.

**Deliverables:**

- **Submit a report with your solution methodology and screenshots of outputs for tasks 1.1 and 1.2 along with well documented source codes of your user-level programs {**pingpong-<RollNo>.c and sleep-<RollNo>.c**} written to complete these tasks in a tar ball.**
- **Also show your outputs to the TAs before leaving the lab session.**

**Due by 7PM today. Late submissions attract a penalty of 25% per day!**

## References:


- https://pdos.csail.mit.edu/6.828/2023/labs/util.html
- https://pdos.csail.mit.edu/6.828/2023/xv6/book-riscv-rev3.pdf
- https://github.com/mit-pdos/xv6-public
- https://pdos.csail.mit.edu/6.828/2023/tools.html

- https://pdos.csail.mit.edu/6.828/2023/labs/guidance.html