The ICS Compute Swarm for CMSC 180 Laboratories

- The Swarm has *n* drones. Currently (Tuesday, 23 April 2024), *n* = 18.
- A drone is a processor in the Swarm and can be accessed via its IP address.
- So that the students do not need to remember the IP address of each drone, the drones can be referenced by their respective aliases. The aliases of each is either (say for drone01):
  - `drone01.swarm.ics.uplb.edu.ph` or
  - Simply `drone01` or
  - `computeling01`
- The students need to update the `/etc/hosts` file of their respective laboratory PCs so they can access the drones via the aliases:
  - Download the hosts file unto the lab PCs (say in `~user/Downloads`).
  - Overwrite the PCs `/etc/hosts` using:
    - `$ sudo cp ~user/Downloads/hosts /etc/hosts`
- To copy the student's client program (compiled object code if C or java), say in Drone01, do from a terminal:
  - `$ scp my_client_app cmsc180@drone01:/home/cmsc180`
  - Replace `my_client_app` with name of the program
  - The password is the same password for the user `user` in the lab PCs
- To run the my_client_app in Drone01, do from a terminal in lab PC:
  - `$ ssh cmsc180@drone01`
  - `cmsc180@drone01 $ my_client_app`
- A student may open as many connections to as many compute drones as long as the number of connections is $\leq n$. This means that as many number of terminals could be opened on one's lab PC. One can determine which drone a terminal is connected to by looking at the `$` prompt of the terminal:
  - In drone01, the prompt is `cmsc180@drone01 $`
- Alternatively, one can do `$ uname -a`.
- A student may use the `/etc/hosts` to hardcode the IP address even if the IP addresses will change everyday.