**MIP 280A4: Microbial Sequence Analysis**

**Computer Architecture and Computing Environments, In-class exercise questions**

1. What is the function of a CPU in a computer? (1 pt)
2. Describe three ways that memory (RAM) differs from hard drives (HDD) (1 pt each):
3. Answer the following questions about the laptop you are currently using (1 pt each):
   1. What OS is it running?
   2. How many cores does it have?
   3. How much memory (RAM) does it have?
   4. How much storage does it have?
   5. What type of storage does it have (SSD, HDD)?
4. Attempt to login to the thoth01 server, which we will be using in class (1 pt for attempting). To do this you will need a program on your computer that will allow you to open a secure shell (ssh) connection to this server. Appropriate programs include:

* On Mac OS: the built-in Terminal app
* On Windows [option 1]: Ubuntu for Windows terminal.
* On Windows [option 2]: MobaXterm: https://mobaxterm.mobatek.net/

Note that this server is inside of the CSU firewall. To connect to it you will have to be either:

* Be on the CSU ethernet (ethernet cable plugged in to your computer)
* Be on the csu-net wifi network
* Be connected through a virtual private network (VPN). See:

https://www.acns.colostate.edu/security/#1478123291089-f3918698-6eec

Connect to thoth01 by typing:

ssh your\_csu\_eid@thoth01.cvmbs.colostate.edu

For instance, I would type:

ssh mdstengl@thoth01.cvmbs.colostate.edu

Note that you may have to answer “yes” to the question about whether you are sure you want to connect to this server (this only appears the first time you connect).

Your password will be the same as your CSU EID password.

1. Answer the following questions about the thoth01 server (1 pt each):
   1. What OS is it running?
   2. How much memory (RAM) does it have? [hint, run: htop]
   3. How many cores does it have? [hint, run: htop]
   4. How much storage does it have? [hint, run: df -h and pay attention to the partition on /home]
2. Once logged into to thoth01, run the command:

cat /tmp/welcome\_students.txt

and report the message that is output to your terminal (1 pt).