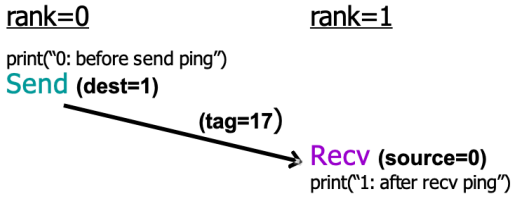
Assignment 5

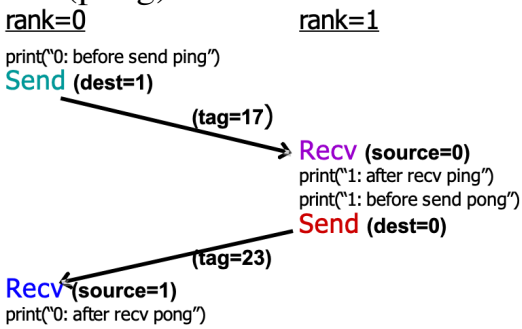
Due: 11:59 PM, March 20

A. Write an MPI program according to the timeline diagram: Process 0 sends a message to Process 1 (ping). You may just send a `None` in Python to Process 1.



Use the attached startup code `ping-skel.py`. Run with only 2 processes such as "`mpirun -np 2…`" Submit your code and a screenshot of the output.

B. Write an MPI program according to the timeline diagram. Process 0 sends a message to Process 1 (ping). After receiving this message, Process 1 sends a message back to Process 0 (pong).



Use `pingpong-skel.py` as your startup code. Submit your code and a screenshot of the output.

C. Write an MPI program according to the timeline diagram: Process 0 sends a message to process 1 (ping). After receiving this message, process 1 sends a message back to process 0 (pong). Repeat this ping-pong with a loop of length 50. Add timing calls before and after the loop: `time = MPI.Wtime()`. `MPI.Wtime()` returns a wall-clock time in seconds. Only at process 0, print out the average transfer time of a message in μs, i.e., `delta_time / (2*50) * 1e6`. Use `pingpong-bench-skel.py` as your startup code. Submit your code and a screenshot of the output.