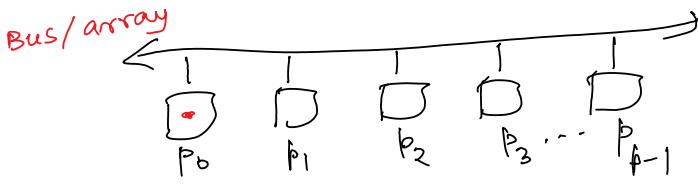


MPI: Permutations

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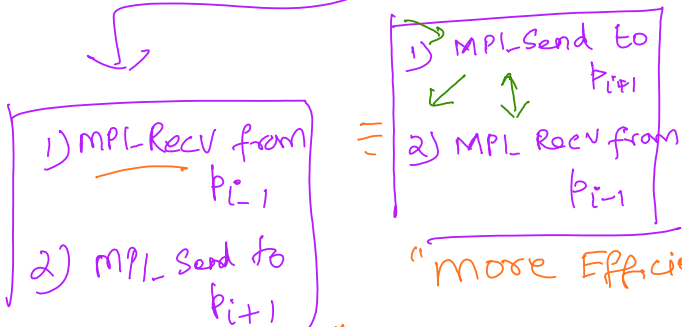
1) Array Permutation:



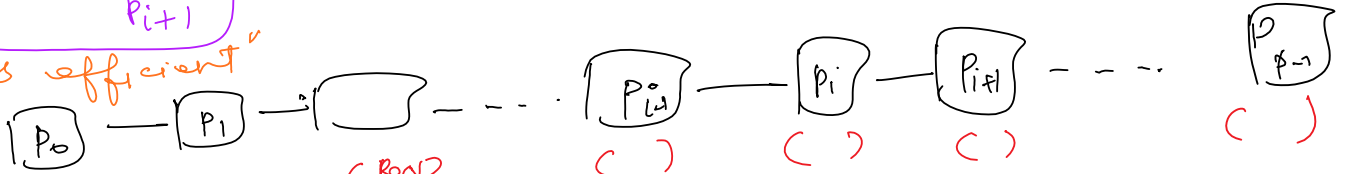
// $i > 0$
// $i < p-1$

// if $i = 0$
(send)

// if $i = p-1$
(recv)



"less efficient"



$O(p)$
time steps

Point to point comm.

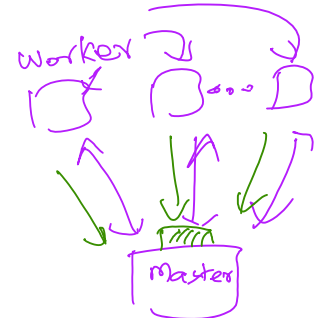
MPI-Send

MPI-Recv

→ MPI-Ssend

MPI-Irecv

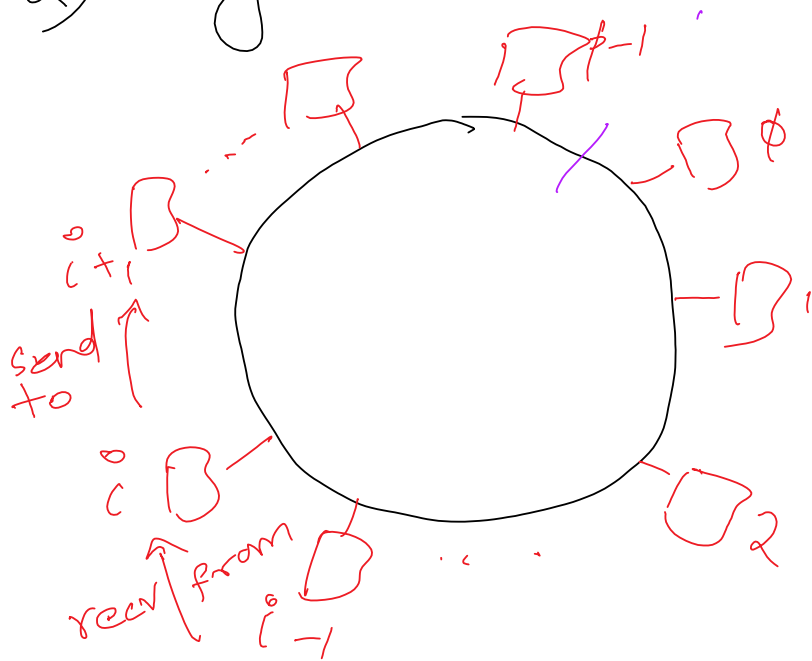
↓
synchronized



MPI: ring

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2) Ring Permutation



(good)

- 1) Send to $i+1$
- 2) Recv from $i-1$

(bad)

- 1) Recv from $i-1$
- 2) send to $i+1$

\Rightarrow dead lock

