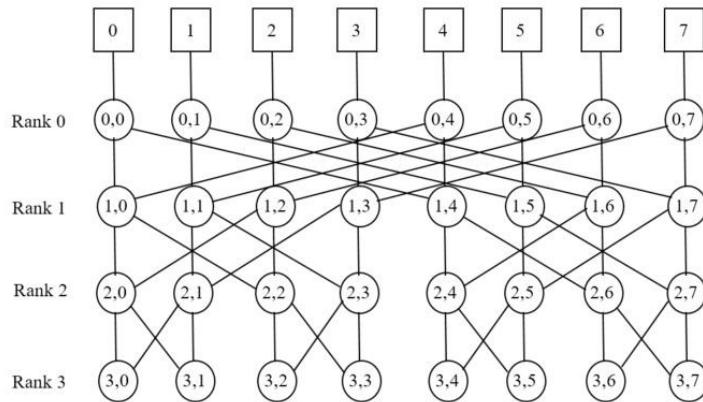


CSE 531
Homework-1 Solution

1.
(a) Butterfly Network with 8 processing elements



- (b) Yes, Omega Network can be rearranged to a Butterfly Network, which means these networks are isomorphic.

2.
`int arr[arr_size];`

`For stride in [1, 2, 4, 8, 16]:`
 `t0 = time()`
 `For run in range(total_runs):`
 `For idx in range(total_iters):`
 `dummy += arr[idx * stride % arr_size]`
 `t1 = time()`
 `print(stride, (t1-t0)/total_runs)`

Reference

- <https://gist.github.com/chengscott/bd99de0e8c5fc41d7c8706104ee3157e>
- <https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=467697>
- <https://lwn.net/Articles/252125>