Partitioning

- PageRank

Links
(url, neighbors)

Ranks
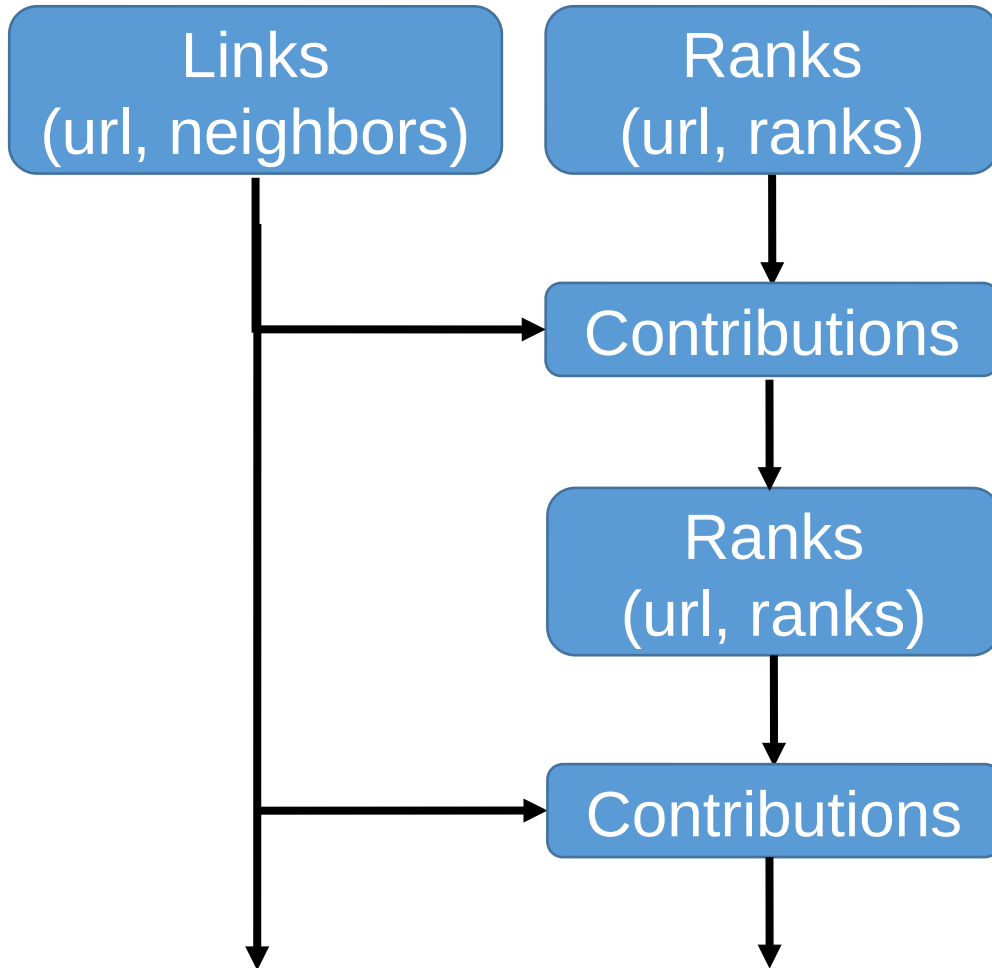(url, ranks)

Contributions

Ranks
(url, ranks)

Contributions

Joins take place repeatedly

Good partitioning reduces shuffles