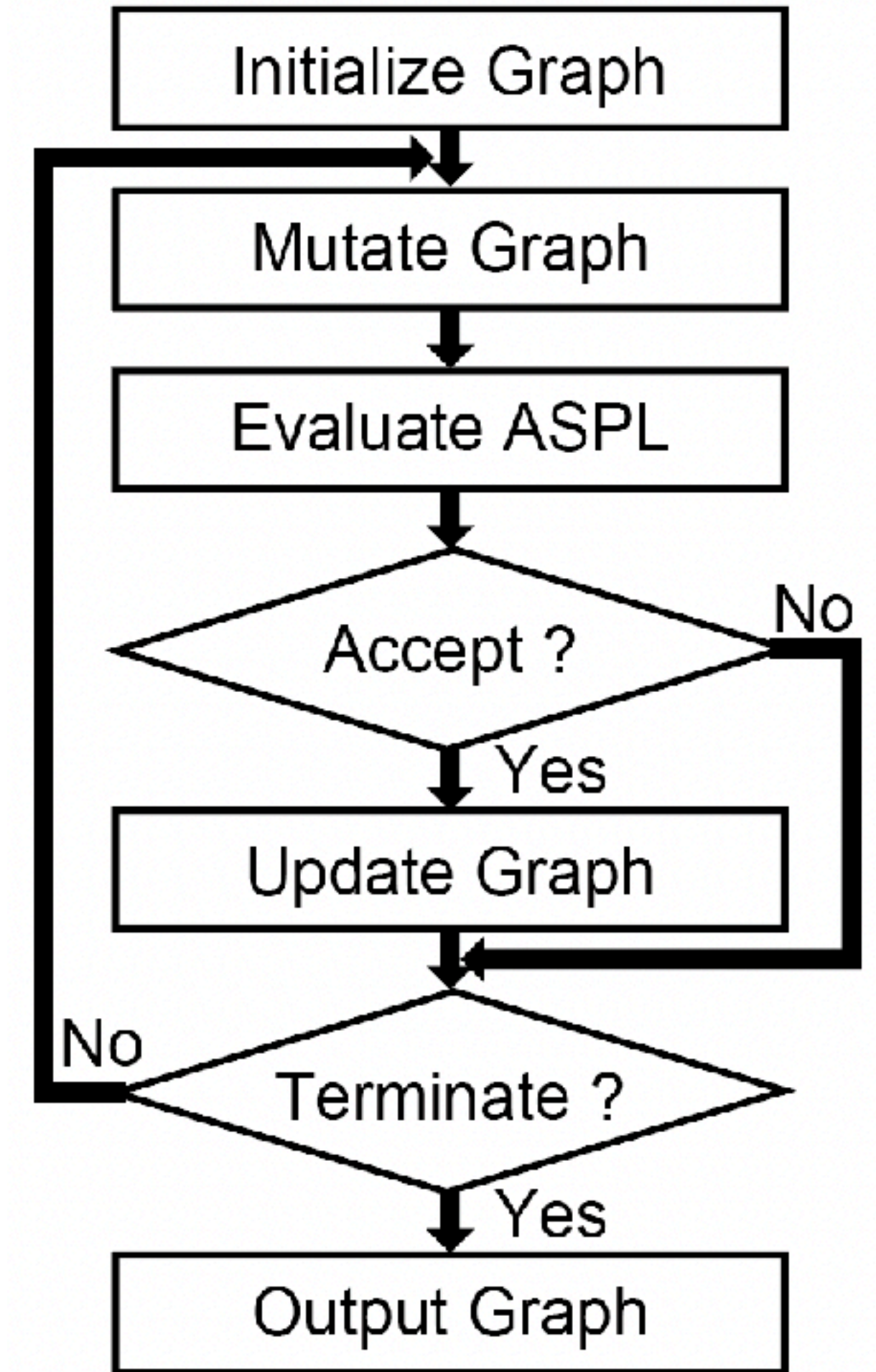


Development of Graph Library and Optimization Algorithm for Order/Degree Problem



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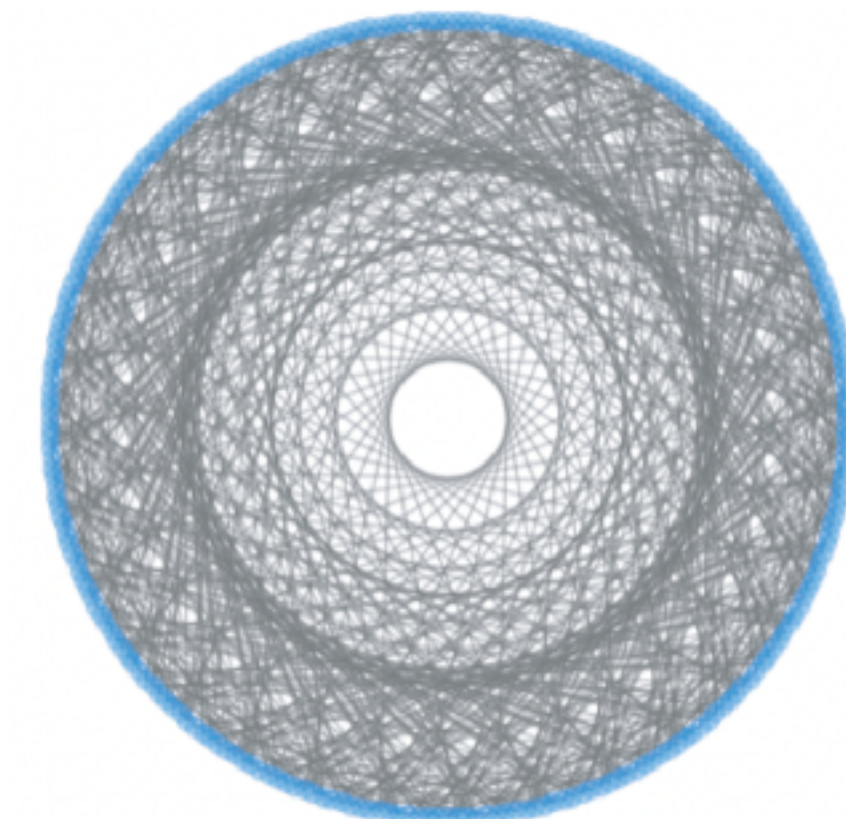
- Research on designing optimal network topologies for distributed memory systems based on graph theory
- The Order/Degree Problem involves finding a graph with the minimum ASPL (Average Shortest Path Length)
- Develop optimization algorithm based on simulated annealing
 - Improving search performance by giving symmetry to a graph
 - Use 128 GPUs on Cygnus for ASPL computation



Award in Graph Golf

Processor	Time (sec.)
1 CPU core	3779.38
12 CPU cores	474.53
1 GPU	28.71
128 GPUs	0.28

13,500 times faster !!



Nodes = 256, Degree = 5