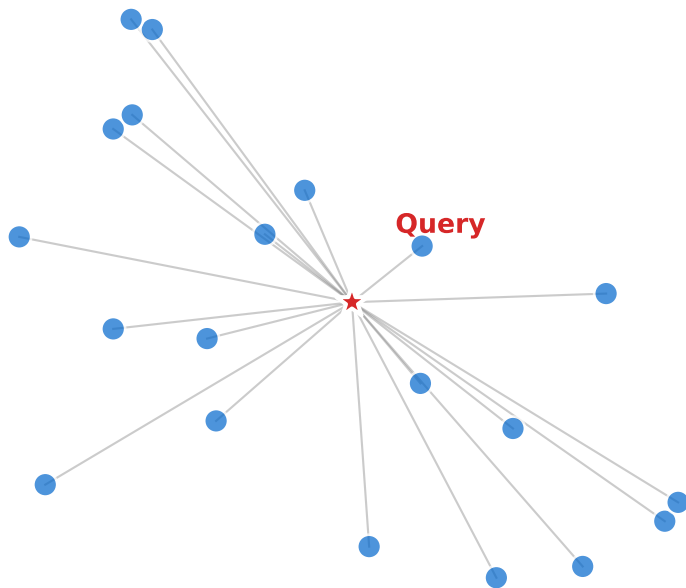# Exact Search vs HNSW: Why Approximate is Faster

Exact Search (Brute Force)
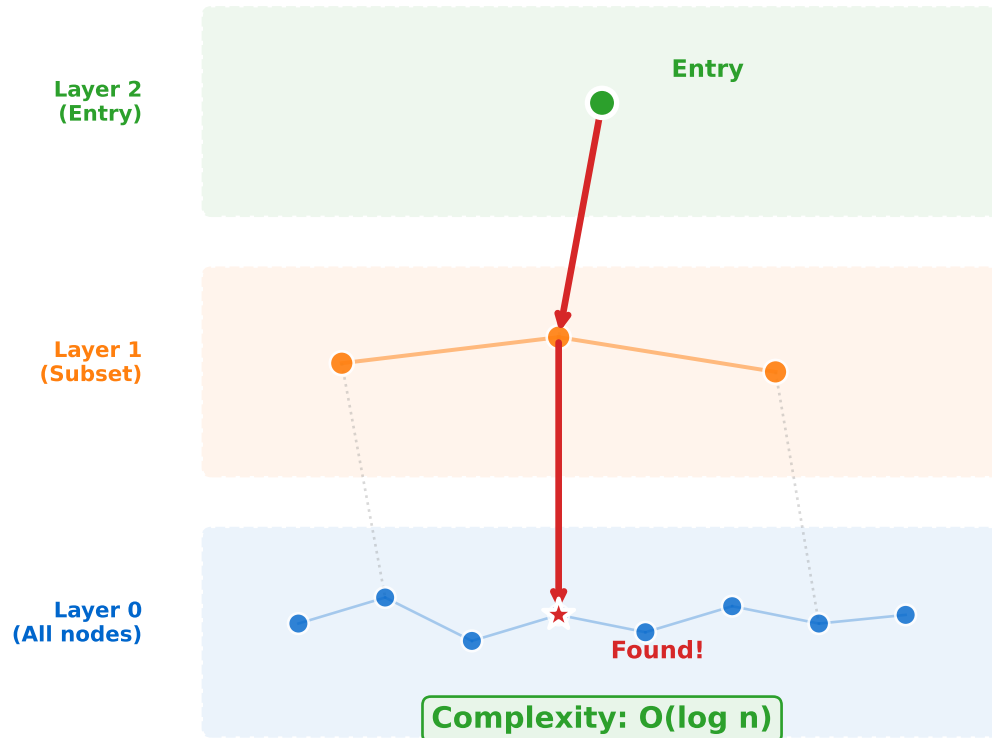
Compare query to ALL documents

Query

Complexity: O(n)

HNSW (Hierarchical Navigable Small World)

Navigate graph: sparse top -> dense bottom

Layer 2 (Entry)

Entry

Layer 1 (Subset)

Layer 0 (All nodes)

Found!

Complexity: O(log n)

Trade-off: HNSW achieves 95-99% recall with 100-1000x speedup over exact search