**Johnson's algorithm** is a way to find the [shortest paths](https://en.wikipedia.org/wiki/Shortest_path) between [all pairs of vertices](https://en.wikipedia.org/wiki/All-pairs_shortest_path_problem) in a [sparse](https://en.wikipedia.org/wiki/Sparse_graph), [edge-weighted](https://en.wikipedia.org/wiki/Weighted_graph), [directed graph](https://en.wikipedia.org/wiki/Directed_graph)