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Solving Process:

To generate the new graphs in this randomized minimum cut implementation through edge contraction, in each iteration, one edge is selected uniformly at random from the current edge list. Suppose the chosen edge connects vertices u and v. The algorithm goes through each edge one by one in the current edge list. For every edge, it checks the two endpoints separately. If the starting vertex of an edge is equal to v, it is changed to u. Similarly, if the ending vertex of an edge is equal to v, it is also changed to u. By doing this, all edges that were previously connected to vertex v are now connected to vertex u instead. As a result, vertices u and v are merged into a single super-vertex labeled u, and the graph structure is updated to reflect this contraction. This redirection may create self-loops where both endpoints of an edge become the same vertex. Such self-loops are removed by copying only edges with u!=v into a new edge list. This filtered edge list becomes the edge set of the new contracted graph. After contraction, the vertex count is reduced by one, and the process repeats until there remain only 2 nodes. Thus, the final graph is generated.