EECE 7205 Homework 7

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1. The cost of this operation is O(E+V)
   The main program can be divided into four parts:
   1. Delete all outgoing edges for u, I just remove vertexs[i]. The time cost is O(n).
   2. Delete all ingoing edges for u, I transverse every edges in the node. Due to the adjacent list, I need to transverse every vertex entry, and then transverse the linkedlist. Here the time cost is O(V+E)
   3. Check the target vertex and rename it. Here I need to transverse all the edge in this graph. And the time cost is the same as step 2.
   4. Remove entry from the vertex array. The time cost complexity is the same as the step 1, and it is O(n)

So the total time cost is O(E+V)

2. The time cost of the function getBFT() is the same with the BFS(). It is O(E + V)
   The new function just execute a linear operator in one step of BFS. It will not affect the total time cost. So the time complexity is still O(E + V)