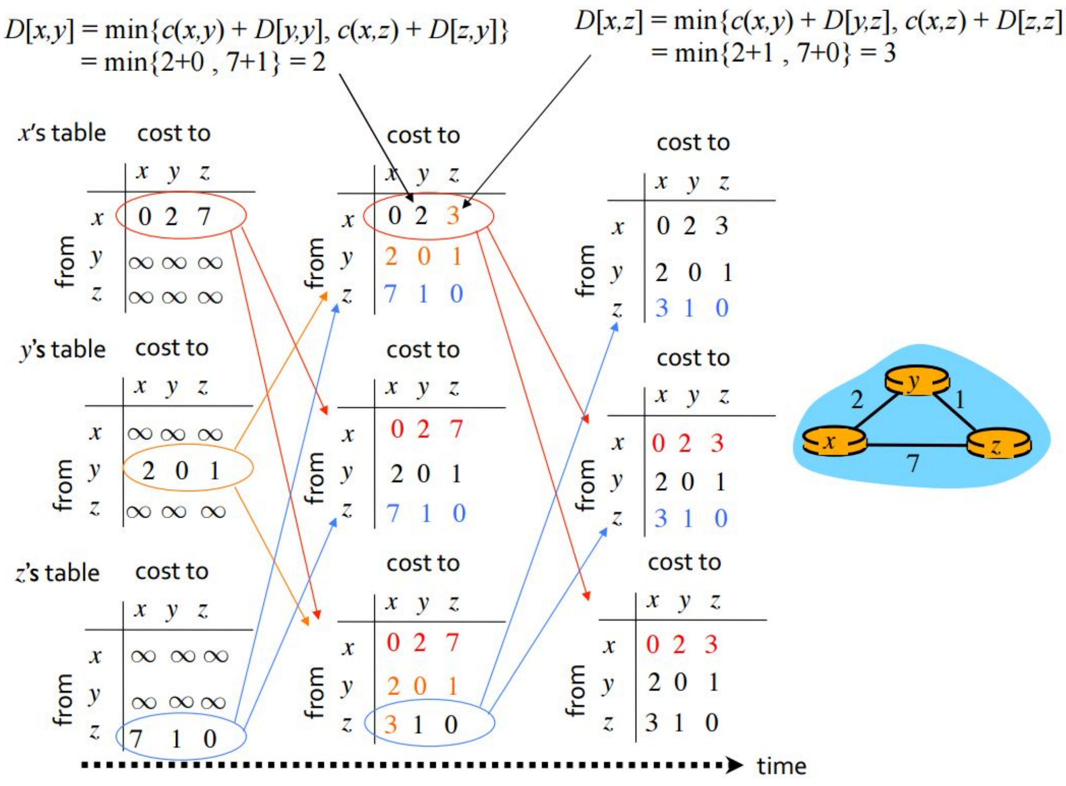
EECS 489 Discussion 7

UDP Demo

Distance Vector Example



Source:http://web.eecs.umich.edu/~sugih/courses/eecs489/lectures/15-RoutingDV.pdf

Q1

Consider the count-to-infinity problem in the distance vector routing. Will the count-to-infinity problem occur if we decrease the cost of a link? Why? How about if we connect two nodes which do not have a link?

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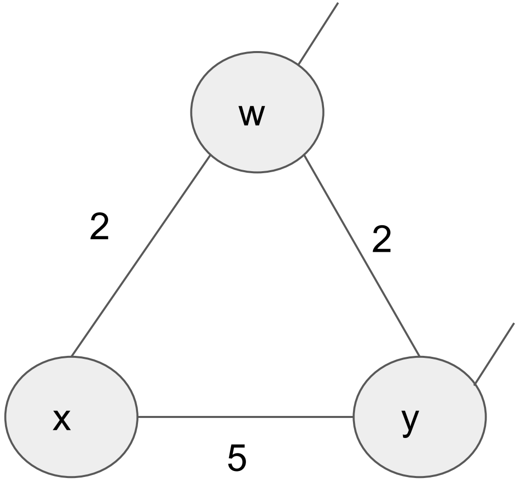
No. Decreasing the cost of a link won’t cause a loop

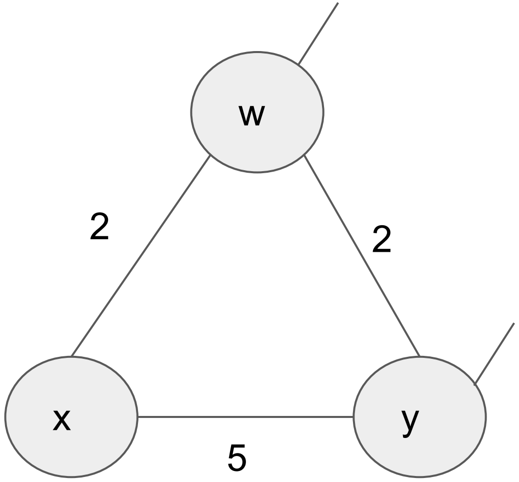
Q2



Consider the network fragment shown below. Node w has a minimum-cost path to destination u (not shown) of 5, and node y has a minimum-cost path to u of 6. The complete paths from w and y to u are not shown. All link costs in the network have strictly positive values

- Give x’s distance vector for destinations w, y, and u
- Give a link-cost change for either c(x, w) or c(x, y) such that x will inform its neighbors of a new minimum-cost path to u as a result of executing the distance-vector algorithm
- Give a link-cost change for either c(x, w) or c(x, y) such that x will not inform its neighbors of a new minimum-cost path to u as a result of executing the distance- vector algorithm

Q2



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- Give x's distance vector for destinations w, y, and u
  $D_x(w) = 2$, $D_x(y) = 4$, $D_x(u) = 7$
- Give a link-cost change for either c(x, w) or c(x, y) such that x will inform its neighbors of a new minimum-cost path to u as a result of executing the distance-vector algorithm
  Change c(x,y) < 1
- Give a link-cost change for either c(x, w) or c(x, y) such that x will not inform its neighbors of a new minimum-cost path to u as a result of executing the distance- vector algorithm
  Make c(x,y) anything greater than 1