

Mokhtari (9831143) – Computer Networks 2 - HW 01

P1 from Chapter 5 of Kurose & Ross's Computer Networking, A Top-Down Approach, 8th edition:

- D-C-A
- D-C-B-A
- D-C-B-E-A
- D-E-A
- D-E-B-A
- D-E-B-C-A
- D-B-A
- D-B-E-A
- D-B-C-A
- D-F-E-A
- D-F-E-B-A
- D-F-E-B-C-A

P3 from Chapter 5 of Kurose & Ross's Computer Networking, A Top-Down Approach, 8th edition:

Step	N'	$D(t), p(t)$	$D(u), p(u)$	$D(v), p(v)$	$D(w), p(w)$	$D(y), p(y)$	$D(z), p(z)$
0	x	∞	∞	3,x	6,x	6,x	8,x
1	xv	7,v	6,v	3,x	6,x	6,x	8,x
2	xvu	7,v	6,v	3,x	6,x	6,x	8,x
3	xvu	7,v	6,v	3,x	6,x	6,x	8,x
4	xvuw	7,v	6,v	3,x	6,x	6,x	8,x
5	xvuwyt	7,v	6,v	3,x	6,x	6,x	8,x
6	xvuwytz	7,v	6,v	3,x	6,x	6,x	8,x

P7 from Chapter 5 of Kurose & Ross's Computer Networking, A Top-Down Approach, 8th edition:

a) It will be:

- $Dx(w) = 5$
- $Dx(y) = 4$
- $Dx(u) = 14$

b) Cost change for either $c(x,w)$ or $c(x,y)$ will inform:

- If $c(x,w)$ becomes larger, the least cost path from x to u will still have cost at least 14.
- If $c(x,w) = \delta < 5$, then the least cost path now passes through w and has cost $\delta + 13$.
- If $c(x,y) = \delta > 5$, then the least cost path now passes through w and has cost 15.
- If $c(x,y) = \varepsilon < 3$, then the least-cost path to u continues to pass through y and its cost changes to $11 + \varepsilon$.

c) Any changes in $c(x, w)$ greater than 5 will not cause the neighbors to be updated, as will changes of $5 > c(x, y) > 4$.

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P8 from Chapter 5 of Kurose & Ross's Computer Networking, A Top-Down Approach, 8th edition:

Node x table

Cost to				
From		x	y	z
	x	0	3	4
	y	∞	∞	∞
	z	∞	∞	∞

Cost to				
From		x	y	z
	x	0	3	4
	y	3	0	6
	z	4	6	0

Node y table

Cost to				
From		x	y	z
	x	∞	∞	∞
	y	3	0	6
	z	∞	∞	∞

Cost to				
From		x	y	z
	x	0	3	4
	y	3	0	6
	z	4	6	0

Node z table

Cost to				
From		x	y	z
	x	∞	∞	∞
	y	∞	∞	∞
	z	4	6	0

Cost to				
From		x	y	z
	x	0	3	4
	y	3	0	6
	z	4	6	0

- One of each node's associated tables has been deleted because the second and third (omitted) table entries for each node contain identical data.