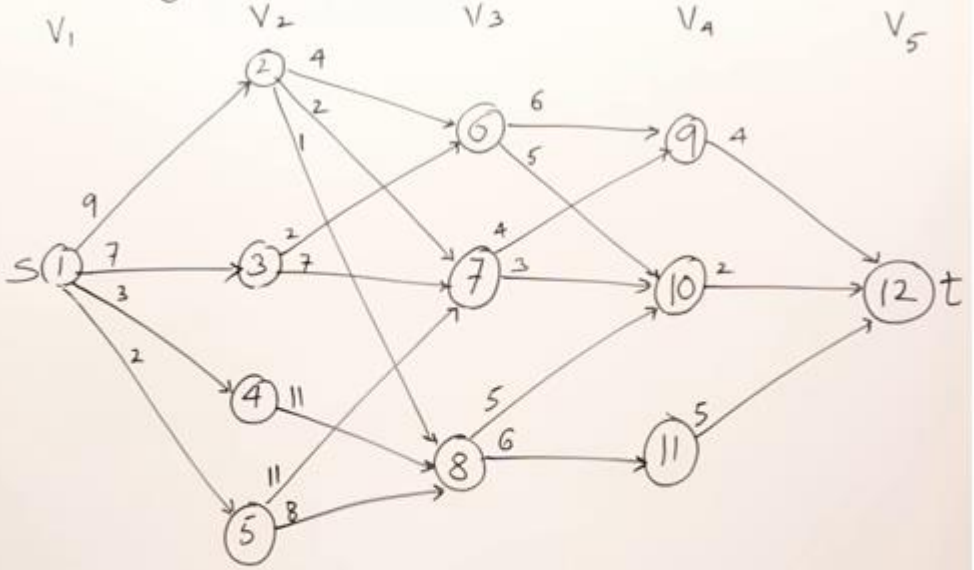
Multistage Graph



V	1	2	3	4	5	6	7	8	9	10	11	12
Cost									4	2	5	0
d									12	12	12	12

$cost[j] = \min_{r \in V_{i+1}} (c[j,r] + cost[r])$

c(5,12)=10

Multistage Graph solved example.

c(12) = 0

c(11) = 5 d(11) = 12

c(10) = 2 d(10) = 12

c(9) = 4 d(9) = 12

c(8) = min{5+2, 6+5} = 7.

d(8) = 10

c(7) = min{5+4, 3+2} = 5

d(7) = 10

c(6) = min{6+4, 5+2} = 7

d(6) = 10

c(5) = min{11+5, 8+7} = 15

d(5) = 8

c(4) = min{11+7} = 18

d(4) = 8

c(3) = min{7+5, 2+7} = 9

d(3) = 6

c(2) = min{4+7, 2+5, 1+7} = 7

d(2) = 7

c(1) = min{9+7, 8+9, 3+18, 2+15}

= 16

d(1) = 2.

1 - 2 - 7 - 10 - 12

minimum cost = 9+7

= 16.

$c(11,12) = \min_{l \in 11} \{c(12,11)$

$$cost(i,j) = \min_{\substack{l \in V_{i+1} \\ \langle j,l \rangle \in E}} \{ c(j,l) + (cost(i+1,l)) \}$$

multistage Graph Exercise 1, fig 5.4

i	cost(j)	D(j)

~~cost (11,12) = min { ot~~

cost (11) = min { cost(11,12) + cost(12,12) }
= min { 5+0 }
= 5
d(11) = 12.

n = 9.
j = n-1 = 8, cost (1:9) = 0
cost (8) = ~~min~~ c(8,9) + c(9)
= 3+0 = 3.
d(8) = 9
cost (7) = c(7,9) + c(9) = 7+0 = 7.
d(7) = 9.
cost (6) = min { cost(6,8) + cost(8), cost(6,7) + cost(7) }
= min { 5, 13 } = 5
d(6) = 8.
cost d(5) = min { cost(5,8) + cost(8), cost (5,7) + cost(7) }
= min { 2+3 , 6+7 } = 5.
d(5) = 8.
cost(4) = min { 7, 8 } = 87, d(4) = 8.
c(3) = min { 2+5, 7+5, 6+8 } = 10
cost(2) = min { 4+10, 2+8 } = 12
d(2) = 8
cost(1) = min { 2+10, 5+8 } = 12
d(1) = 2 or 3
1-3-5-8-9 - 12