0-1 Knapsack Question

Question:
Max capacity = 10
(w,v) = (1,3), (2,4), (3,5), (4,6), (4,7), (6,9).

Solution:

Item	W	V
1	1	3
2	2	4
3	3	5
4	4	6
5	4	7
6	6	9

	0	1	2	3	4	5	6	7	8	9	10
0	0	0	0	0	0	0	0	0	0	0	0
1	0	3	3	3	3	3	3	3	3	3	3
2	0	3	4	7	7	7	7	7	7	7	7
3	0	3	4	7	8	9	12	12	12	12	12
4	0	3	4	7	8	9	12	13	14	15	18
5	0	3	4	7	8	10	12	14	15	16	19
6	0	3	4	7	8	10	12	14	15	16	19

Item1	Item2	Item3	Item4	Item5	Item6
1	1	1	0	1	0

19-7 = 12
12-5 = 7
7-4 = 3
3-3 = 0

Ans: (1,3), (2,4), (3,5), (4,7)

Longest Common Subsequences (LCS) Question

Rules:

1. Same character => diagonally + 1
2. Different character => max from left side and upper side

Question:
X = abbcaac
Y = accbcca

Solution:

		a	b	b	c	a	a	c
	0	0	0	0	0	0	0	0
a	0	1	<= 1	<= 1	<= 1	1	1	<= 1
c	0	1 ^	<= 1	<= 1	2	<= 2	<= 2	2
c	0	1 ^	<= 1	<= 1	2	<= 2	<= 2	3
b	0	1 ^	2	2	<= 2	<= 2	<= 2	3 ^
c	0	1 ^	2 ^	<= 2	3	<= 3	<= 3	3
c	0	1 ^	2 ^	<= 2	3	<= 3	<= 3	4
a	0	1	2 ^	< = 2	3 ^	4	4	<=4
		a	b		c		a	

*Yellow color = Diagonally increasing 1

Length of LCS = 4
LCS = abca

		a	b	b	c	a	a	c
	0	0	0	0	0	0	0	0
a	0	1	<= 1	<= 1	<= 1	1	1	<= 1
c	0	1 ^	<= 1	<= 1	2	<= 2	<= 2	2
c	0	1 ^	<= 1	<= 1	2	<= 2	<= 2	3
b	0	1 ^	2	2	<= 2	<= 2	<= 2	3 ^
c	0	1 ^	2 ^	<= 2	3	<= 3	<= 3	3
c	0	1 ^	2 ^	<= 2	3	<= 3	<= 3	4
a	0	1	2 ^	< = 2	3 ^	4	4	4 ^
		a		b	c			c

Length of LCS = 4
LCS = abcc

Task:
String 1 = abbcaac
String 2 = accbcca