

Longest Common Sequence

→ A subsequence of a given sequence is a list of one or more elements of the given sequence (in the same order).

→ In LCS we are given 2 sequences

$$X = \{x_1, x_2, x_3 \dots \dots \text{num}\}$$

$$Y = \{y_1, y_2, y_3 \dots \dots \text{num}\}$$

our aim is to find a max. length common subsequence of X & Y .

$$X = A, B, C, D, A, B$$

$$Y = B, D, C, A, B, A$$

	Y_0	B_1	D_2	C_3	A_4	B_5	A
X_0	0	0	0	0	0	0	0
A_1	0	0↑	0↑	0↑	1↖	1←	1↖
B_2	0	1↖	1←	1←	1↑	2↖	2←
C_3	0	1↑	1←	2↖	2←	2↑	2↑
D_4	0	1↖	1↑	2↑	2↑	3↖	3←
D_5	0	1↑	2↖	2↑	2↑	3↑	3↑
A_6	0	1↑	2↑	2↑	3↖	3↖	4↖ ✓
B_7	0	1↖	2↑	2↖	3↑	4↖	4↑

Ⓢ
B C B A