

## Largest Common Subsequence

- 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

$$X = \{x_1, x_2, x_3, \dots, \text{num}\} \quad (\text{at } i=1)$$

$$Y = \{y_1, y_2, y_3, \dots, \text{num}\} \quad (\text{at } i=1)$$

Our aim is to find a max. length common subsequence of  $X - Y$ .

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

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

	$y_0$	$0_1$	$0_2$	$0_3$	$0_4$	$0_5$	$A$
$x_0$	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↑

④

B G C A D