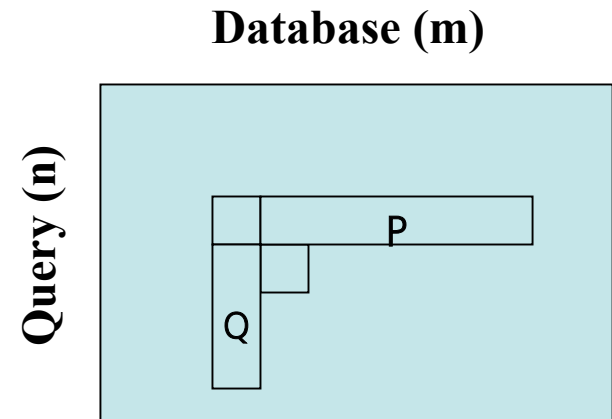


How does it work (score matrix d)

	V	L	L	P	V	L	L	P
V	5	1	1	-3	5	1	1	-3
L	1	5	5	-4	1	5	5	-4
P	-3	-4	-4	10	-3	-4	-4	10
V	5	1	1	-3	5	1	1	-3
L	1	5	5	-4	1	5	5	-4
I	4	2	2	-3	4	2	2	-3
L	1	5	5	-4	1	5	5	-4
P	-3	-4	-4	10	-3	-4	-4	10

Doing it yourself

$$D_{m,n} = \text{Max} \begin{cases} D_{m+1,n+1} + d(m,n), \text{match} \\ P_{m,n}, \text{gap in database} \\ Q_{m,n}, \text{gap in query} \end{cases}$$



$$P_{m,n} = \text{Max} [D_{m+1,n} + w_1, P_{m+1,n} + u]$$

$$Q_{m,n} = \text{Max} [D_{m,n+1} + w_1, Q_{m,n+1} + u]$$

eij = 1 match
 eij = 2 gap-opening database
 eij = 3 gap-extension database
 eij = 4 gap-opening query
 eij = 5 gap-extension query

D is highest
 Q is highest, gap open
 Q is highest, gap extension
 P is highest, gap open
 P is highest, gap extension

D

	V	L	L	P	V	L	L	P	
V	41	39	36	30	20	16	13	7	0
L	35	36	38	31	20	15	15	8	0
P	29	30	31	33	21	15	10	10	0
V	24	21	20	21	23	16	11	5	0
L	18	19	20	16	18	18	12	6	0
I	17	17	14	15	17	17	13	7	0
L	12	13	15	11	12	13	15	8	0
P	6	7	8	10	6	7	8	10	0
	0	0	0	0	0	0	0	0	0

P

	V	L	L	P	V	L	L	P	
V	37	34	28	18	14	11	5	-1	0
L	35	36	29	18	13	13	6	-1	0
P	29	30	31	19	13	8	8	-1	0
V	19	19	20	21	14	9	3	-1	0
L	17	18	15	16	16	10	4	-1	0
I	15	13	14	15	15	11	5	-1	0
L	12	13	10	11	12	13	6	-1	0
P	6	7	8	5	6	7	8	-1	0
	0	0	0	0	0	0	0	0	0

	V	L	L	P	V	L	L	P	
V	33	34	36	30	19	13	13	7	0
L	27	28	29	31	20	14	9	8	0
P	22	19	18	19	21	15	10	4	0
V	16	17	18	14	16	16	11	5	0
L	15	15	12	13	15	15	12	6	0
I	10	11	13	9	10	11	13	7	0
L	4	5	6	8	4	5	6	8	0
P	-1	-1	-1	-1	-1	-1	-1	-1	0
	0	0	0	0	0	0	0	0	0

Q

	V	L	L	P	V	L	L	P	
V	1	1	2	3	1	1	2	3	0
L	5	1	1	2	3	1	1	2	0
P	5	5	4	1	2	3	3	1	0
V	1	1	5	4	1	2	3	3	0
L	1	1	1	4	1	1	1	3	0
I	1	1	5	4	1	1	2	3	0
L	5	1	1	5	5	1	1	2	0
P	5	5	4	1	5	5	4	1	0
	0	0	0	0	0	0	0	0	0

E

The alignment

ALN score 41

QAL Q 0 VL-PVLILP

DAL D 0 VLLPVL-LP