2.4

$$D[i,j] = \min \begin{cases} D[i-1,j] + \text{del-cost}(source[i]) \\ D[i,j-1] + \text{ins-cost}(target[j]) \\ D[i-1,j-1] + \begin{cases} 1 & \text{if } source[i] \neq target[j] \\ 0 & \text{if } source[i] = target[j] \end{cases} \end{cases}$$

Tar →

Src ↓

#	#	0	E	A	L
#	0	1	2	3	4
I	1	(2, 2, 1) ①	(3, 3, 2) ②	(4, 3, 3) ③	(5, 4, 3) 3
E	2	(2, 3, 2) ②	(3, 3, 1) ①	(4, 2, 3) ②	(4, 3, 4) ③
D	3	(3, 4, 2) ②	(2, 3, 3) ②	(3, 3, 2) ②	(4, 3, 3) ③
A	4	(3, 5, 4) ③	(3, 4, 3) ③	(3, 4, 2) ②	(4, 3, 3) ③

Edit-distance of LEDA to DEAL

[3 3 [

↳ insertion cost = 1

↳ deletion cost = 1

↳ Substitution cost = 1

↳ i = rows

↳ j = columns

2.5

$$D[i,j] = \min \begin{cases} D[i-1,j] + \text{del-cost}(source[i]) \\ D[i,j-1] + \text{ins-cost}(target[j]) \\ D[i-1,j-1] + \begin{cases} 2, & \text{if } source[i] \neq target[j] \\ 0, & \text{if } source[i] = target[j] \end{cases} \end{cases}$$

target →

source ↓	#	#	B	R	I	E	F
#	0	1	2	3	4	5	
D	1	2 1 2 ②	3 2 3 ②	4 3 4 ③	5 4 5 ④	6 5 6 ⑤	
R	2	3 2 3 ③	4 3 2 ②	5 4 3 ③	6 5 4 ④	7 6 5 ⑤	
I	3	4 3 4 ④	3 4 3 ③	4 3 4 ②	5 4 5 ③	6 5 6 ④	
V	4	5 4 5 ⑤	4 3 4 ④	3 4 3 ③	4 3 4 ④	5 4 5 ⑤	
E	5	6 5 6 ⑥	5 4 5 ⑤	4 3 4 ④	3 4 3 ③	4 5 4 ④	

From DRIVE to BRIEF is 4

source ↓	#	#	D	I	V	E	R	S
#	0	1	2	3	4	5	6	
D	1	2 1 0 ①	3 2 3 ②	4 3 4 ③	5 4 5 ④	6 5 6 ⑤	7 6 7 ⑥	
R	2	1 2 3 ①	2 3 2 ②	3 4 3 ③	4 5 4 ④	5 6 5 ⑤	6 5 6 ⑤	
I	3	2 3 4 ②	3 4 3 ③	4 3 4 ④	5 4 5 ⑤	6 5 6 ⑥	7 6 7 ⑦	
V	4	3 4 5 ③	4 3 4 ④	3 4 3 ③	4 5 4 ④	5 6 5 ⑤	6 7 6 ⑥	
E	5	4 5 6 ④	5 4 5 ⑤	4 3 4 ④	3 4 3 ③	4 5 4 ④	5 6 5 ⑤	

From DRIVE to DIVERS is 3
thus DRIVE is closer to DIVERS.

DRIVE
BRIEF

12.5 is drive closer to brief or to divers

	#	D	R	I	V	E
#	0	1	2	3	4	5
B	1	(2,2,2) 2	(3,3,3) 3	(4,4,4) 4	(5,5,5) 5	(6,6,6) 6
R	2	(3,3,3) 3	(4,4,2) 2	(5,3,5) 3	(6,4,6) 4	(7,5,7) 5
I	3	(4,4,4) 4	(3,5,5) 3	(4,4,2) 2	(5,3,5) 3	(6,4,6) 4
E	4	(5,5,5) 5	(4,6,6) 4	(5,5,3) 3	(4,4,4) 4	(5,5,3) 3
F	5	(6,6,6) 6	(5,7,7) 5	(4,6,6) 4	(5,5,5) 5	(4,6,6) 4

Edit Distance: 4

Note:
- cost are:
  - insertion = 1
  - deletion = 1
  - Substitution = 2
- Save equations as before
- not writing all cell work cause testing two Grids (may do at end of min in cell)

	#	D	R	I	V	E
#	0	1	2	3	4	5
D	1	(2,2,0) 0	(3,1,2) 1	(4,2,4) 2	(5,3,4) 3	(6,4,6) 4
I	2	(1,3,3) 1	(2,0,2) 2	(3,1,3) 1	(4,2,4) 2	(5,3,5) 3
V	3	(2,4,4) 2	(3,2,3) 3	(2,4,4) 2	(3,3,1) 1	(4,3,4) 2
E	4	(3,5,5) 3	(4,4,4) 4	(3,5,5) 3	(2,4,4) 2	(3,3,1) 1
R	5	(4,6,6) 4	(5,5,5) 3	(4,4,6) 4	(3,5,5) 3	(2,4,4) 2
S	6	(5,7,7) 5	(4,6,6) 4	(5,5,5) 5	(4,6,6) 4	(3,5,5) 3

Edit Distance: 3

DRIVE
DIVERS

DRIVE is closer to DIVERS