10-11-2017 CS 156 HW2

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①

	Path	Cost	
	ABCDE	9+2+3+2 = [16]	
	BACDE	9+7+3+2 = 21	
adjc.	CBADE	2+9+4+2 = 17	
to	EBCDA	1+2+3+4 = 10	
ABCDE	ADCBE ★	4+3+2+1 = [10]	chosen because same starting spot
	ABEDC	9+1+2+3 = 15	
	ABCED	9+2+8+2 = 21	
	ADCEB	4+3+8+1 = 16	
	DACBE	4+7+2+1 = 14	
adjc.	CDABE	3+4+9+1 = 17	
to	EDCBA	2+3+2+9 = 16	
ADCBE	ABCDE	9+2+3+2 = 16	
	ADEBC ★	4+2+1+2 = [9]	

② CBEDA = [9] is a local minimum

BCEDA	2+8+2+4 = 14
EBCDA	1+2+3+4 = 10
ABEDC	9+1+2+3 = 15
CDEBA	3+2+1+9 = 15
CBADE	2+9+4+2 = 17

③	Path	Cost	Path	Cost
	21121		34311	
	BACED	9+7+8+2 = 26	CEDAB	8+2+4+9 = 23
	ABCED	9+2+8+2 = 21	ECDAB	8+3+4+9 = 24
P_1	CABED	7+9+1+2 = 19 ★	DECAB	2+8+7+9 = 26
	DACEB	4+7+8+1 = 20	BEDAC	1+2+4+7 = 14 P_1
P_2	BECAD	1+8+7+4 = 20 ★	CADEB	7+4+2+1 = 14 P_2
	BADEC	9+4+2+8 = 23	CEBAD	8+1+9+4 = 22
	BACDE	9+7+3+2 = 21		
P_1 ★	ACBED	7+2+1+2 = 12 ★	DEBAC	2+1+9+7 = 19
	DABEC	4+9+1+8 = 22	BADEC	9+4+2+8 = 23
	CEBAD	8+1+9+4 = 22	BECAD	1+8+7+4 = 20
	CADEB	7+4+2+1 = 14	BEDCA	1+2+3+7 = 13
P_2	EBCAD	1+2+7+4 = 14	ACDEB	7+3+2+1 = 13
	CEBAD	8+1+9+4 = 22	DACEB	4+7+8+1 = 20
	DECAB	2+8+7+9 = 26	BADEC	9+4+2+8 = 23
	BEDAC	1+2+4+7 = 14	CABED	7+9+1+2 = 19
	BECDA	1+8+3+4 = 16		

tie breaker = # of letters moved from original spot in CEDAB.

④

#1		#2		#3	
B	ACED ⇒ BEDAB x	BA	CED ⇒ BADAB x	BAC	ED ⇒ BACAB x
C	EDAB ⇒ CACED x	CE	DAB ⇒ CECED x	CED	AB ⇒ CEDED x

no crossover point results in a valid path.