Zadání 1. úkolu do předmětu IZU

Jméno: David Příjmení: Hudák

login: xhudak03

Pomocí metody UCS určete **nejkratší** dobu, za kterou čtyři lidé přejdou most. Máme most, přes který mohou jít jen dva lidé zaráz a přitom musí nést pochodeň. Každý jde jinou rychlostí, pokud jsou dva lidé spolu, jdou rychlostí pomalejšího. Doba přechodu mostu pro jednotlivé osoby viz tabulka, rychlosti u operátorů doplňte. Operátory používejte podle jejich pořadí. V jednotlivých krocích uvádějte obsahy zásobníků Open a Closed. Jako cestu vypište pořadí použitých operátorů.

Pochodeň je označena "*", číslo udává dobu cesty, osoby (A, B, C, D) nalevo od čísla jsou na jedné straně mostu, osoby napravo od čísla jsou na druhé straně mostu. "X" značí dobu, za kterou se všichni lidé dostanou na druhou stranu.

Start: [*ABCD0]

Cíl: [XABCD*]

Časy:

A:1

B:2

C:4

D:5

Operátory:

1. A <- 1

5. AB -> 2

9. BD -> 5

2. B <- 2

6.

AC -> 4

10. CD -> 5

3. C <- 4

7.

AD -> 5

4. D <- 5

8. BC -> 4

Cesta:	AB ->	A <-	CD ->	B <-	AB ->		
	[*ABCD0]	[CD2AB*]	[*ACD3B]	[A8BCD*]	[*AB10CD]	[12ABCD*]	

Open:	[*ABCD0]							
6 1 1								 1
Closed:								
		1	1	1	1			
Open:	[CD2AB*]	[BD4AC*]	[BC5AD*]	[AD4BC*]	[AC5BD*]	[AB5CD]*		
Closed:	[*ABCD0]							
cioseu.	[ABCD0]							
	•		•	•	•		1	
	T							
Open:	[BD4AC*]	[BC5AD*]	[AD4BC*]	[AC5BD*]	[AB5CD*]	[*ACD3B]	[*BCD4A]	
Closed:	[*ABCD0]	[CD2AB*]						
	[
Onon:	[DD44C*]	[BC5AD*]	[AD4BC*]	[AC5BD*]	[AB5CD*]	[*BCD4A]	[D7ABC*]	[C8ABD*]
Open: [A8BCD*]	[BD4AC*]	[DC3AD*]	[AD4BC*]	[AC3BD*]	[AD3CD*]	[BCD4A]	[D/ABC]	[COABD*]
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		ı	1	ı			1	ı
Closed:	[*ABCD0]	[CD2AB*]	[*ACD3B]					

Open:	[BC5AD*]	[AD4BC*]	[AC5BD*]	[AB5CD*]	[*BCD4A]	[D7ABC*]	[C8ABD*]	[A8BCD*]
[*ABD5C]	[*BCD8A]							
	5.t	5	5.h	5				
Closed:	[*ABCD0]	[CD2AB*]	[*ACD3B]	[BD4AC*]				
		1	1	I			1	1
Open:	[BC5AD*]	[AC5BD*]	[AB5CD*]	[*BCD4A]	[D7ABC*]	[C8ABD*]	[A8BCD*]	[*ABD6C
[*ACD8B]								
Closed:	[*ABCD0]	[CD2AB*]	[*ACD3B]	[BD4AC*]	[AD4BC*]			
ciosca.	[ABCBO]	[CDZ/(D]	[/(6535]	[BB II/C]	[10101]			
			I					
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	[BC5AD*]	[AC5BD*]	[AB5CD*]	[D7ABC*]	[C8ABD*]	[A8BCD*]	[D8ABC*]	[C9ABD*
	[BC5AD*]	[AC5BD*]	[AB5CD*]	[D7ABC*]	[C8ABD*]	[A8BCD*]	[D8ABC*]	[C9ABD*
	[BC5AD*]	[AC5BD*]	[AB5CD*]	[D7ABC*]	[C8ABD*]	[A8BCD*]	[D8ABC*]	[C9ABD*
[B9ACD*]							[D8ABC*]	[C9ABD*
[B9ACD*]	[BC5AD*]	[AC5BD*]	[AB5CD*]	[D7ABC*]	[C8ABD*]	[*BCD4A]	[D8ABC*]	[C9ABD*
Open: [B9ACD*] Closed:							[D8ABC*]	{C9ABD*
[B9ACD*]							[D8ABC*]	{C9ABD*
[B9ACD*]							[D8ABC*]	[C9ABD*
[B9ACD*] Closed:	[*ABCD0]	[CD2AB*]	[*ACD3B]	[BD4AC*]	[AD4BC*]	[*BCD4A]		
[B9ACD*] Closed:							[PSABC*]	[*BCD10/
[B9ACD*] Closed:	[*ABCD0]	[CD2AB*]	[*ACD3B]	[BD4AC*]	[AD4BC*]	[*BCD4A]		
[B9ACD*]	[*ABCD0]	[CD2AB*]	[*ACD3B]	[BD4AC*]	[AD4BC*]	[*BCD4A]		
[B9ACD*] Closed: Open:	[*ABCD0]	[CD2AB*]	[*ACD3B]	[BD4AC*]	[AD4BC*]	[*BCD4A]		
[B9ACD*] Closed:	[*ABCD0]	[CD2AB*]	[*ACD3B]	[BD4AC*]	[AD4BC*]	[*BCD4A]	[*ABD5C]	

Open:	[AB5CD*]	[D7ABC*]	[C8ABD*]	[A8BCD*]	[B9ACD*] [*ABD50	[*ABC6E) [*ACD10
Closed:	[*ABCD0]	[CD2AB*] [*ACD3B	B] [BD4AC*	[AD4BC	*] [*BCD4	A] [BC5AD ³	*] [AC5BD*]
Open:	[D7ABC*]	[C8ABD*]	[A8BCD*]	[B9ACD*]	[*ABD5C]	[*ABC6D]	[*ABC9D]	[*ABD10C]
Closed:	[*ABCD0]	[CD2AB*]	[*ACD3B]	[BD4AC*]	[AD4BC*]	[*BCD4A]	[BC5AD*]	[AC5BD*]
								[1.0022]
[AB5CD*]								
	[D7ABC*]	[C8ABD*]	[A8BCD*]	[B9ACD*]	[*ABC6D]	[D7ABC*]	[B10ACD*]	[A10BCD]
Open:	[D7ABC*]	[C8ABD*]	[A8BCD*]				[B10ACD*]	
Open: Closed: [AB5CD*]								[AC5BD*]
Open: Closed:	[*ABCD0]							
Open: Closed: [AB5CD*]	[*ABCD0]			[BD4AC*]	[AD4BC*]		[BC5AD*]	[AC5BD*]
Open: Closed: [AB5CD*]	[*ABCD0] [*ABD5C]	[CD2AB*]	[*ACD3B]	[BD4AC*]	[AD4BC*]	[*BCD4A]	[BC5AD*]	[AC5BD*]
Open: Closed:	[*ABCD0] [*ABD5C]	[CD2AB*]	[*ACD3B]	[BD4AC*]	[AD4BC*]	[*BCD4A]	[BC5AD*]	[AC5BD*]

Open:	[C8ABD*]	[A8BCD*]	[B9ACD*]	[*AD8BC]	[*BD9AC]	[*CD11AB]		
		•						
Closed:	[*ABCD0]	[CD2AB*]	[*ACD3B]	[BD4AC*]	[AD4BC*]	[*BCD4A]	[BC5AD*]	[AC5BD*]
[AB5CD*]	[*ABD5C]	[*ABC6D]	[D7ABC*]					[/(0355]
[50 05]	[/.5566]	[[277.20]					
Open:	[A8BCD*]	[B9ACD*]	[*BD9AC]	[*AD8BC]	[*CD11AB]	[*AC9BD]	[*BC10A	D] [*CD13A
		[Lastrice]	[====	[[[(= ====	
						I		
Cl I	[*ABCD0]	[CD2AB*]	[*ACD3B]	[BD4AC*]	[AD4BC*]	[*BCD4A]	[DCE 4 D*	1 [46500*
Closed:					[/ID4BC]	[BCB4/1]	[BC5AD*] [AC5BD*
[AB5CD*]	[*ABD5C]	[*ABC6D]	[D7ABC*]	[C8ABD*]				
Open:	[B9ACD*]	[*BD9AC]	[*AD8BC]	[*CD11AB] [*AC9BD]	[*BC10AD]	[*AB10CI	O] [*AC12B[
*AD13BC	[BJACD]	[BD3AC]	[ADODC]	[CDIIAD] [ACSBS]	[BCIOAD	ADIOCI	J [ACIZDI
[ADISBC]								
	[**\PCD0]	[CD2AB*]	[*ACD3B]	[DD44C*]	[AD4BC*]	[*BCD4A]	1	.
Closed:	[*ABCD0]		+	[BD4AC*]		[BCD4A]	[BC5AD*]] [AC5BD*]
[AB5CD*]	[*ABD5C]	[*ABC6D]	[D7ABC*]	[C8ABD*]	[A8BCD*]			
		I		1	1			1
Open:	[B9ACD*]	[*BD9AC]	[*CD11A	AB [*AC9BC	[*BC10A	D] [*AB10C	D] [13ABC	D*]
Closed:	[*ABCD0]	[CD2AB*]	[*ACD3E	B] [BD4AC*	[AD4BC*] [*BCD4A	BC5AD	*] [AC5BD
[AB5CD*]	[*ABD5C]	[*ABC6D]	[D7ABC*	*] [C8ABD*	[A8BCD*] [*AD8BC	:]	
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		l		<u> </u>				

Open:	[*BD9AC]	[*CD11AB	[*AC9BD]	[*BC10AD]	[*AB10CD]	[13ABCD*]	[*AB10CD]	[*BC13AD
[*BD14AC]								
Closed:	[*ABCD0]	[CD2AB*]	[*ACD3B]	[BD4AC*]	[AD4BC*]	[*BCD4A]	[BC5AD*]	[AC5BD*]
[AB5CD*]	[*ABD5C]	[*ABC6D]	[D7ABC*]	[C8ABD*]	[A8BCD*]	[*AD8BC]	[B9ACD*]	
Open:	[*CD11AB]	[*AC9BD]	[*BC10AD]	[*AB10CD]	[13ABCD*]	[14ABCD*]		
орсп.	[CDIIAD]	[ACSBD]	[BCIOAD]	[ADIOCD]	[ISABED]	[ITABED]		
Closed:	[*ABCD0]	[CD2AB*]	[*ACD3B]	[BD4AC*]	[AD4BC*]	[*BCD4A]	[BC5AD*]	[AC5BD*]
		[#45655]	[D740C*]	[C8ABD*]	[A8BCD*]	[*AD8BC]	[B9ACD*]	[*BD9AC]
[AB5CD*]	[*ABD5C]	^ABC6D	D/ABC	1 00/ 100		<u> </u>	<u> </u>	-
[AB5CD*]	[*ABD5C]	[*ABC6D]	[D7ABC*]	[cones]				
[AB5CD*] Open:	[*ABD5C]	[*AC9BD]	[*BC10AD]	[*AB10CD]	[13ABCD*]	[14ABCD*]		
						[14ABCD*]		
						[14ABCD*]		
Open:						[14ABCD*]	[BC5AD*]	[AC5BD*]
Open: Closed:	[*CD11AB]	[*AC9BD]	[*BC10AD]	[*AB10CD]	[13ABCD*]		[BC5AD*] [B9ACD*]	[AC5BD*] [*BD9AC]
Open: Closed:	[*CD11AB]	[*AC9BD]	[*BC10AD]	[*AB10CD]	[13ABCD*] [AD4BC*]	[*BCD4A]		
Open: Closed:	[*CD11AB]	[*AC9BD]	[*BC10AD]	[*AB10CD]	[13ABCD*] [AD4BC*]	[*BCD4A]		
Open: Closed:	[*CD11AB]	[*AC9BD]	[*BC10AD]	[*AB10CD]	[13ABCD*] [AD4BC*]	[*BCD4A]		
Open: Closed: [AB5CD*]	[*CD11AB] [*ABCD0] [*ABD5C]	[*AC9BD] [CD2AB*] [*ABC6D]	[*BC10AD] [*ACD3B] [D7ABC*]	[*AB10CD] [BD4AC*] [C8ABD*]	[13ABCD*] [AD4BC*] [A8BCD*]	[*BCD4A] [*AD8BC]		
Open: Closed: [AB5CD*]	[*CD11AB]	[*AC9BD]	[*BC10AD] [*ACD3B] [D7ABC*]	[*AB10CD] [BD4AC*] [C8ABD*]	[13ABCD*] [AD4BC*] [A8BCD*]	[*BCD4A] [*AD8BC]		
Open: Closed: [AB5CD*]	[*CD11AB] [*ABCD0] [*ABD5C]	[*AC9BD] [CD2AB*] [*ABC6D]	[*BC10AD] [*ACD3B] [D7ABC*]	[*AB10CD] [BD4AC*] [C8ABD*]	[13ABCD*] [AD4BC*] [A8BCD*]	[*BCD4A] [*AD8BC]		
	[*CD11AB] [*ABCD0] [*ABD5C]	[*AC9BD] [CD2AB*] [*ABC6D]	[*BC10AD] [*ACD3B] [D7ABC*]	[*AB10CD] [BD4AC*] [C8ABD*]	[13ABCD*] [AD4BC*] [A8BCD*]	[*BCD4A] [*AD8BC]		
Open: Closed: [AB5CD*] Open:	[*CD11AB] [*ABCD0] [*ABD5C]	[*AC9BD] [CD2AB*] [*ABC6D]	[*BC10AD] [*ACD3B] [D7ABC*]	[*AB10CD] [BD4AC*] [C8ABD*]	[13ABCD*] [AD4BC*] [A8BCD*]	[*BCD4A] [*AD8BC]	[B9ACD*]	[*BD9AC]
Open: Closed: [AB5CD*]	[*CD11AB] [*ABCD0] [*ABD5C]	[*AC9BD] [CD2AB*] [*ABC6D]	[*BC10AD] [*ACD3B] [D7ABC*]	[*AB10CD] [BD4AC*] [C8ABD*]	[13ABCD*] [AD4BC*] [A8BCD*]	[*BCD4A] [*AD8BC]		

Open:	[*CD11AB]	[*BC10AD]	[*AB10CD]	[13ABCD*]	[13ABCD*]			
Closed:	[*ABCD0]	[CD2AB*]	[*ACD3B]	[BD4AC*]	[AD4BC*]	[*BCD4A]	[BC5AD*]	[AC5BD*]
[AB5CD*]	[*ABD5C]	[*ABC6D]	[D7ABC*]	[C8ABD*]	[A8BCD*]	[*AD8BC]	[B9ACD*]	[*BD9AC]
[*AC9BD]								
Onon:	[*CD11AD]	[*AB10CD]	[12 \ D C D *]	[14ABCD*]				
Open:	[*CD11AB]	[.ABI0CD]	[13ABCD*]	[14ABCD.]				
Closed:	[*ABCD0]	[CD2AB*]	[*ACD3B]	[BD4AC*]	[AD4BC*]	[*BCD4A]	[BC5AD*]	[AC5BD*]
Ciosea.			[D7ABC*]	[C8ABD*]	[A8BCD*]	[*AD8BC]	[B9ACD*]	[*BD9AC]
[AB5CD*]	[*ARD5C]			[CONDD]	[/ (OBCB]	[ADODC]	[BS/(CB]	[5557(0]
[AB5CD*]	[*ABD5C] [*BC10AD]	[*ABC6D]	[BIADE]					
[AB5CD*] [*AC9BD]	[*ABD5C] [*BC10AD]	[*ABCOD]	[BIADE]					
		[*ABCOD]	[BTABE]					
		[ABCOD]	[brase]					
		[13ABCD*]	[12ABCD*]					
[*AC9BD]	[*BC10AD]							
[*AC9BD]	[*BC10AD]							
[*AC9BD]	[*BC10AD]							
[*AC9BD]	[*BC10AD]			[BD4AC*]	[AD4BC*]	[*BCD4A]	[BC5AD*]	[AC5BD*]
[*AC9BD] Open:	[*BC10AD]	[13ABCD*]	[12ABCD*]		[AD4BC*] [A8BCD*]	[*BCD4A] [*AD8BC]	[BC5AD*] [B9ACD*]	[AC5BD*] [*BD9AC]
[*AC9BD] Open: Closed:	[*CD11AB]	[13ABCD*]	[12ABCD*] [*ACD3B]	[BD4AC*]				
(*AC9BD) Open: Closed: [AB5CD*]	[*BC10AD] [*CD11AB] [*ABCD0] [*ABD5C]	[CD2AB*] [*ABC6D]	[12ABCD*] [*ACD3B]	[BD4AC*]				
(*AC9BD) Open: Closed: [AB5CD*]	[*BC10AD] [*CD11AB] [*ABCD0] [*ABD5C]	[CD2AB*] [*ABC6D]	[12ABCD*] [*ACD3B]	[BD4AC*]				
(*AC9BD) Open: Closed: [AB5CD*]	[*BC10AD] [*CD11AB] [*ABCD0] [*ABD5C]	[CD2AB*] [*ABC6D]	[12ABCD*] [*ACD3B]	[BD4AC*]				
(*AC9BD) Open: Closed: [AB5CD*]	[*BC10AD] [*CD11AB] [*ABCD0] [*ABD5C]	[CD2AB*] [*ABC6D]	[12ABCD*] [*ACD3B]	[BD4AC*]				
Open: Closed: [AB5CD*] [*AC9BD]	[*BC10AD] [*CD11AB] [*ABCD0] [*ABD5C] [*BC10AD]	[CD2AB*] [*ABC6D]	[12ABCD*] [*ACD3B]	[BD4AC*]				
Open: Closed: [AB5CD*] [*AC9BD]	[*BC10AD] [*CD11AB] [*ABCD0] [*ABD5C] [*BC10AD]	[CD2AB*] [*ABC6D]	[12ABCD*] [*ACD3B]	[BD4AC*]				
Open: Closed: [AB5CD*] [*AC9BD]	[*BC10AD] [*CD11AB] [*ABCD0] [*ABD5C] [*BC10AD]	[CD2AB*] [*ABC6D] [*AB10CD]	[*ACD3B] [D7ABC*]	[BD4AC*] [C8ABD*]	[A8BCD*]	[*AD8BC]		
Open: Closed: [AB5CD*] [*AC9BD]	[*BC10AD] [*CD11AB] [*ABCD0] [*ABD5C] [*BC10AD]	[CD2AB*] [*ABC6D]	[12ABCD*] [*ACD3B]	[BD4AC*]				
[*AC9BD] Open: Closed: [AB5CD*] [*AC9BD] Open:	[*BC10AD] [*CD11AB] [*ABCD0] [*ABD5C] [*BC10AD]	[CD2AB*] [*ABC6D] [*AB10CD]	[*ACD3B] [D7ABC*]	[BD4AC*] [C8ABD*]	[A8BCD*]	[*AD8BC]	[B9ACD*]	[*BD9AC]

Open:				
Closed:				