## Zadání 1. úkolu do předmětu IZU

Jméno: Tomáš

Příjmení: Tomala

login: xtomal02

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:7

D:10

## Operátory:

1.	A <-1
⊥.	H ✓-1

AB ->2

9. BD -> 10

2. B <- 2

6

AC ->7

10. CD -> 10

3. C <-7

AD ->10

4. D <- 10

BC ->7

Cesta:	<mark>5</mark>	1	<mark>10</mark>	2	<mark>5</mark>		
	[*ABCD0]	[CD2AB*]	[*ACD3B]	[A13BCD*]	[*AB15CD]	[17ABCD*]	

Ol	pen:	[*ABC	D0]						
CI	osed:								$\neg$
Open:	[CI	D2AB*]	[BD7AC*	[BC10AD*]	[AD7BC*]	[AC10BD*]	[AB10CD*]		
Closed:	[*/	ABCD0]							
olosed.		.5050]							
Open:	[BD	7AC*]	[BC10AD*	[AD7BC]	[AC10BD*]	[AB10CD*	[*ACD3B]	[*CBD4A]	
<u> </u>	F.d. o	1	5 · - · · · ·						
Closed:	A*J	BCD0]	[CD2AB*]						
Open:		7AC*]	[BC10AD*	[AD7BC*]	[AC10BD*]	[AB10CD*	[*CBD4A]	[D10ABC*]	[C13ABD*]
[A13BCD	*]								
		1		1					
Closed:	[*A	BCD0]	[CD2AB*]	[*ACD3B]					

Open:	[BD7AC*]	[BC10AD*]	[AD7BC*]	[AC10BD*]	[AB10CD*]	[D10ABC*]	[C13ABD*]	[A13BCD*]
[D11ABC*]	<u>{C14∧BD*}</u>	[B14ACD*]						
Closed:	[*ABCD0]	[CD2AB*]	[*ACD3B]	[*CBD4A]				
_	[2010124]	[	[4.04.05.54]	[454005#1	[5.4.0.4.5.0#]	5040455#1	[1,10,0,0,1]	[5.4.4.5.04]
Open:	[BC10AD*]	[AD7BC*]	[AC10BD*]	[AB10CD*]	[D10ABC*]	[C13ABD*]	[A13BCD*]	[D11ABC*]
[C14ABD*]	[B14ACD*]	[*ABD8C]	[*BCD14A]					
<b>.</b>	[# 4 7 07 0]	[000,000,000]	[#4.00.00]	[#20244]	[222404]			
Closed:	[*ABCD0]	[CD2AB*]	[*ACD3B]	[*BCD4A]	[BD7AC*]			
Open:	[BC10AD*]	[AC10BD*]	[AB10CD*]	[D10ABC*]	[C13ABD*]	[A13BCD*]	[B14ACD*]	[*ABD8C]
[*ABD9C]	[*ACD14B]		<u>.                                    </u>					
Closed:	[*ABCD0]	[CD2AB*]	[*ACD3B]	[*BCD4A]	[BD7AC*]	[AD7BC*]		
Closed:	[*ABCD0]	[CD2AB*]	[*ACD3B]	[*BCD4A]	[BD7AC*]	[AD7BC*]		
Closed:	[*ABCD0]	[CD2AB*]	[*ACD3B]	[*BCD4A]	[BD7AC*]	[AD7BC*]		
Closed:	[*ABCD0]	[CD2AB*]	[*ACD3B]	[*BCD4A]	[BD7AC*]	[AD7BC*]		
Closed:	[*ABCD0]	[CD2AB*]	[*ACD3B]	[*BCD4A]	[BD7AC*]	[AD7BC*]		
Closed:	[*ABCD0]	[CD2AB*]	[*ACD3B]	[*BCD4A]	[BD7AC*]	[AD7BC*]		
	[BC10AD*]	[CD2AB*]	[*ACD3B]	[*BCD4A]	[BD7AC*]	[AD7BC*]	[B14ACD*]	[D10ABC*]
Open:							[B14ACD*]	[D10ABC*]
Open:	[BC10AD*]						[B14ACD*]	-[D10ABC*]
Closed:  Open:  [B18ACD*]	[BC10AD*]						[B14ACD*]	[D10ABC*]
Open:	[BC10AD*]						[B14ACD*]	-[D10ABC*]
Open: <del>[B18ACD*]</del>	[BC10AD*] [A18BCD*]	[AC10BD*]	[AB10CD*]	[D10ABC*]	[C13ABD*]	[A13BCD*]		[D10ABC*]

Open:	[AC10BD*]	[AB10CD*]	[D10ABC*]	[C13ABD*]	[A13BCD*]	[B14ACD*]	[*ABC11D]	[*BCD20A]
		1		I			L	I
Closed:	[*ABCD0]	[CD2AB*]	[*ACD3B]	[*BCD4A]	[BD7AC*]	[AD7BC*]	[*ABD8C]	[BC10AD*]
Open:	[AB10CD*]	[D10ABC*]	[C13ABD*]	[A13BCD*]	[B14ACD*]	[*ABC11D]	[*ABC12D]	<u>{*ACD20B}</u>
Closed:	[*ABCD0]	[CD2AB*]	[*ACD3B]	[*BCD4A]	[BD7AC*]	[AD7BC*]	[*ABD8C]	[BC10AD*]
[AC10BD*]								
,								
	[D100BC*]	[C12ABD*]	[A12PCD*]	[R14ACD*]	[*APC11D]	[*ABC17D]	[ABD20C*]	
	[D10ABC*]	[C13ABD*]	[A13BCD*]	[B14ACD*]	[*ABC11D]	[*ABC17D]	-{ABD20C*}	
	[D10ABC*]	[C13ABD*]	[A13BCD*]	[B14ACD*]	[*ABC11D]	[*ABC17D]	-[ABD20C*]	
Open:								[RC10AD*]
Open:  Closed: [AC10BD*]	[D10ABC*] [*ABCD0] [AB10CD*]	[C13ABD*] [CD2AB*]	[A13BCD*]	[B14ACD*]	[*ABC11D]	[*ABC17D]	[*ABD8C]	[BC10AD*]
Open: Closed:	[*ABCD0]							[BC10AD*]
Open: Closed:	[*ABCD0]							[BC10AD*]
Open:  Closed: [AC10BD*]	[*ABCD0] [AB10CD*]	[CD2AB*]	[*ACD3B]	[*BCD4A]	[BD7AC*]	[AD7BC*]	[*ABD8C]	[BC10AD*]
Open:  Closed: [AC10BD*]	[*ABCD0]			[*BCD4A]				[BC10AD*]
Open: Closed:	[*ABCD0] [AB10CD*]	[CD2AB*]	[*ACD3B]	[*BCD4A]	[BD7AC*]	[AD7BC*]	[*ABD8C]	[BC10AD*]
Open:  Closed: [AC10BD*]	[*ABCD0] [AB10CD*]	[CD2AB*]	[*ACD3B]	[*BCD4A]	[BD7AC*]	[AD7BC*]	[*ABD8C]	[BC10AD*]
Open:  Closed: [AC10BD*]	[*ABCD0] [AB10CD*]	[CD2AB*]	[*ACD3B]	[*BCD4A]	[BD7AC*]	[AD7BC*]	[*ABD8C]	[BC10AD*]

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Open:	[C13ABD*]	[A13BCD*]	[B14ACD*]	[*AD11BC]	[*BD12AC]	[*CD17AB]	<u>[C13ABD*]</u>	-[B18ACD*]
-[A18BCD*]								
Closed:	[*ABCD0]	[CD2AB*]	[*ACD3B]	[*BCD4A]	[BD7AC*]	[AD7BC*]	[*ABD8C]	[BC10AD*]
[AC10BD*]	[AB10CD*]	[D10ABC*]	[*ABC11D]					
	•	,	1		1	1	1	
Open:	[C13ABD*]	[A13BCD*]	[B14ACD*]	[*BD12AC]	[*CD17AB]	[21ABCD*]		
_								
Closed:	[*ABCD0]	[CD2AB*]	[*ACD3B]	[*BCD4A]	[BD7AC*]	[AD7BC*]	[*ABD8C]	[BC10AD*]
[AC10BD*]	[AB10CD*]	[D10ABC*]	[*ABC11D]	[*AD11BC]				
Open:	[C13ABD*]	[A13BCD*]	[B14ACD*]	[*CD17AB]	[21ABCD*]	[22ABCD*]		
•				-	_			
			•					
Closed:	[*ABCD0]	[CD2AB*]	[*ACD3B]	[*BCD4A]	[BD7AC*]	[AD7BC*]	[*ABD8C]	[BC10AD*]
[AC10BD*]	[AB10CD*]	[D10ABC*]	[*ABC11D]	[*AD11BC]	[*BD12AC]	[7,57,50]	[ 7.5500]	[56267.5]
[/(01000 ]	[/152005 ]	[210/120]	[ 7150225]	[ //82280]	[ 55127.0]			
Open:	[A13BCD*]	[B14ACD*]	[*CD17AB]	[21ABCD*]	[*AC14BD]	[*BC15AD]	[*CD23AB]	
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1	ı	1	ı		ı	1	1	I
Closed:	[*ADCDO]	[CD2AD*]	[*ACD3B]	[*DCD4A]	[DD74C*]	[AD7DC*]	[*ADD0C]	[DC104D*]
	[*ABCD0]	[CD2AB*]	<del>                                     </del>	[*BCD4A]	[BD7AC*]	[AD7BC*]	[*ABD8C]	[BC10AD*]
[AC10BD*]	[AB10CD*]	[D10ABC*]	[*ABC11D]	[*AD11BC]	[*BD12AC]	[C13ABD*]		

Open:	[B14ACD*]	[*CD17AB]	[21ABCD*]	[*AC14BD]	[*BC15AD]	[*AB15CD]	[*AC20BD]	[*AD23BC]
			[	[	[ ]	[	[	[
		ı	1	ı		1	1	
Closed:	[*ABCD0]	[CD2AB*]	[*ACD3B]	[*BCD4A]	[BD7AC*]	[AD7BC*]	[*ABD8C]	[BC10AD*]
[AC10BD*]	[AB10CD*]	[D10ABC*]	[*ABC11D]	[*AD11BC]	[*BD12AC]	[C13ABD*]	[A13BCD*]	
_								
Open:	[*CD17AB]	[21ABCD*]	[*AC14BD]	[*BC15AD]	[*AB15CD]	<del>[*ABC21D]</del>	<del>[*ABD24C]</del>	<del>[*BCD24A]</del>
Closed:	[* \ B \ D \ D \]	[CD2AD*]	[*\CD2D]	[*BCD4A]	[BD74C*]	[AD70C*]	[*^BDOC]	[BC104D*]
Closed: [AC10BD*]	[*ABCD0] [AB10CD*]	[CD2AB*] [D10ABC*]	[*ACD3B] [*ABC11D]	[*AD11BC]	[BD7AC*] [*BD12AC]	[AD7BC*] [C13ABD*]	[*ABD8C] [A13BCD*]	[BC10AD*] [B14ACD*]
[ACIOBD ]	[ABIUCD ]	[DIOABC ]	[ ABCIID]	[ ADIIBC]	[ BD1ZAC]	[CI3ABD ]	[AI3BCD ]	[BI4ACD ]
Open:	[*CD17AB]	[21ABCD*]	[*BC15AD]	[*AB15CD]	[21ABCD*]			
•								
Closed:	[*ABCD0]	[CD2AB*]	[*ACD3B]	[*BCD4A]	[BD7AC*]	[AD7BC*]	[*ABD8C]	[BC10AD*]
[AC10BD*]	[AB10CD*]	[D10ABC*]	[*ABC11D]	[*AD11BC]	[*BD12AC]	[C13ABD*]	[A13BCD*]	[B14ACD*]
[*AC14BD]								
	[*004=:=:	[04.4.0.00.4]	[+ A D 4 = CD ]	[00 A F 05 #3				
Open:	[*CD17AB]	[21ABCD*]	[*AB15CD]	[22ABCD*]				
Clasadi	[* \ D C D \ O ]	[CD2AD*]	[*^CD3D]	[*DCD44]	[DD74C*]	[AD7DC*]	[*^DD0C]	[DC104D*]
Closed: [AC10BD*]	[*ABCD0] [AB10CD*]	[CD2AB*] [D10ABC*]	[*ACD3B] [*ABC11D]	[*BCD4A] [*AD11BC]	[BD7AC*] [*BD12AC]	[AD7BC*] [C13ABD*]	[*ABD8C] [A13BCD*]	[BC10AD*] [B14ACD*]
	[*BC15AD]	[DIONDC.]	[ ADCIID]	[ ADIIDC]	[ DDIZAC]	[CT3WDD.]	[WISPCD.]	[D14ACD.]
[*AC14BD]	[ BCT2MD]							

Open:	[*CD17AB]	[21ABCD*]	[17ABCD*]					
_								
Closed:	[*ABCD0]	[CD2AB*]	[*ACD3B]	[*BCD4A]	[BD7AC*]	[AD7BC*]	[*ABD8C]	[BC10AD*]
[AC10BD*]	[AB10CD*]	[D10ABC*]	[*ABC11D]	[*AD11BC]	[*BD12AC]	[C13ABD*]	[A13BCD*]	[B14ACD*]
[*AC14BD]	[*BC15AD]	[*AB15CD]						
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Open:	[21ABCD*]	[17ABCD*]	[27ABCD*]					
Closed:	[*ABCD0]	[CD2AB*]	[*ACD3B]	[*BCD4A]	[BD7AC*]	[AD7BC*]	[*ABD8C]	[BC10AD*]
[AC10BD*]	[AB10CD*]	[D10ABC*]	[*ABC11D]	[*AD11BC]	[*BD12AC]	[C13ABD*]	[A13BCD*]	[B14ACD*]
[*AC14BD]	[*BC15AD]	[*AB15CD]	[*CD17AB]					
	ı	1		1	1			ı
Open:								
Closed:	[*ABCD0]	[CD2AB*]	[*ACD3B]	[*BCD4A]	[BD7AC*]	[AD7BC*]	[*ABD8C]	[BC10AD*]
[AC10BD*]	[AB10CD*]	[D10ABC*]	[*ABC11D]	[*AD11BC]	[*BD12AC]	[C13ABD*]	[A13BCD*]	[B14ACD*]
[*AC14BD]	[*BC15AD]	[*AB15CD]	[*CD17AB]	[17ABCD*]				

[17ABCD\*]-[\*AB15CD]- [A13BCD\*]-[\*ACD3B]- [CD2AB\*]- [\*ABCD0]

[\*ABCD0]-[CD2AB\*]-[\*ACD3B]- [A13BCD\*]-[\*AB15CD]-[17ABCD\*]