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	al							-					(a	()
	ı) Dykstri	a's algorithm is	an algorithm for	findi	ng the	shor	test p	aths	betwe	en no	ides 1	nau	veight	red grap
	10/1	Will .	16 6000			\	J.				Who			
		1.	S Garage			1	j.		-		into			
	2) a) a,	f	1 mars			-)			300	1 1	10/	reith	1	
_	Literation	S	N	L(a)	12(6)	L(e)	L(h)	L(c)	L(f)	L(1)	1(9)	r(g)	L(J)	
	0	£3	{a,b,e,h,c,f,id,g)}	0 -	00	00	00	00	œ	00	00	00	ob	
1	med the	we las	{b,e,h,c,f,1,d,g,j}	0	3	5	4-	00	00	80	00	00	Ø	
	1 2 tox	{a,b}	£e, k, c, f, 1, d, g, j}	0	3	5	<b>(F)</b>	5	10	S	00	00	00	
	1 1 <b>3</b> mm	{a,b,h}	{e,c,f,1,d,g,i}	0	13	(5)	4	5	9	6	α	α	00	
	1.4	{a,b,h,e}	{c,f,1,d,9,1}	0	13	5	4	3	9	6	00	00	00	
	5	{a,b,h,e, c3	- {fil, d, g, j}	01	3.	5	4	5	7	(3)	8	15	00	
	6	la,b,h,e,c,i 3	£f,d,9,j3	0	3	5	4	5	0	6	8	11	12	
	1 7:04	fa,b,h,e,c,i,f3	{d,g,j}	0	13	5	4	5	7,	6	8	II	12	
	sh	ortest path :	a -> b -> c-	→ f	which	h 1s 7	A							
	b) b, j	the second	1/4										(1)	
	Literation	11 6 0	19 6 N'N	L(b)	1(0)	L(e)	L(f)	L(d)	L(g)	L(j)	L(1)	L(h)	L(Z)	
	. O . G	£3	{b,c,e,f,dgj,i,h,z}	0	ø	05	00	8	80	00	00	80	00	
	1	£63	{c,ef,dg.j,i,h,z}	0	(3)	15	71	8	00	Ø	Ø	00	00	
	2	{b,c}	{e,f,d,g,j,i,h,z}	0	2	5	4	5	8	00	8	8	<b>%</b>	
1	3	{b,c,f}	{e,d,g,j,1,h,2}	0	2	6	4	5	8	17.7	8	9	Ø	
	4	{b,c,f,e}	{d,g,j,i,h,z}	0	2	5	4	3	8	7	8	9	00	
1	5	{b,c,f,e,d}	{9.],1,h,23	0	2	5	4	5	8	0	8	9	7	
1	6	£6,c,f,e;d,j3	{g,i,h,2}	0	2	5	4	5	8	17	8	9	7	
	trops to	shortest path :	b -> c ->	f->	j u	uhich	rs 7		1	) .,	¥	1		
1	c) a,9	140 100	8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1		1			1		()	) 1	1	
1	Literation	tant zi <b>S</b> i	N	L(a)	L(b)	L(e)	L(h)	1(4)	L(f)	L(1)	LW)	12(9)	19)	L(Z)
1	0	<b>{</b> }	(a,be,h,c,f,ip,9),23	ÓI	00	øb	αυ	00	00	00	00	W	αυ	00
1	1	{a}	{b,e,h,c,f,1,d,9,J,2}	-	3	5	4	as	00	Ø	من	0	05	<i>8</i> 0
1	2	£a,63	{e,h,4,f,i,d,g,j,2}		3	5	4	5	10	œ	00	00	00	00
1	3	{a,b,h}	{e,c,f,1,d,g,j,2}	0	3	3	4	5	10	6	00 .	00	∞.	00
1	5	{a,b,h,e}	{c,f,1,d,9,j,2}	0	3	5	4	3	9	6	«	œ	«	œ
	6	{4,6,h,e,c}	{f,i,d,g,j,z}	0,	3	-5	4	5	70	6	.8	11	00	00
1	7	{a,b,h,e,c,i}	{f,d,g,j)Z}	0	3	5	4	5	7	6	8	11	12	∞
1	8	{a,b,h,e,c,i,d}	£6,9,3,23	0	3	5	4	5	7	6	8	li	12	<u>@</u>
1	9	{a,b,h,e,c,1,d,Z}	19,9,33	O	3	5	4	5	7	6	8	(1)	12	10
	10	{a,b,h,e,c,i,d,z,g}	{f.j}	0	3	5	4	5	7	6	8	11	12	10

0.:	Date:
Q2	13
) a is balanced as every leaves are at	level 2 or level 1 (maximum height = 2)
V	level 3 or level 2 (maximum height = 3)
2) 😜	3)
A COLOR	Je de la
CDE	
A 8	E D
	Ø ¢
<b>P O Q</b>	A B A B
Ť Č Ď Ē	
A B	prefly form: -*+*+ ABCDE-*+ABCD
0 0 0	pastfix form: AB+C*D+E*AB+C*D
A B O	
C DE	
A B B C O O O E	· IV
inorder traversal: A+B*C-D/E	
1) 1 8 2 14 3	
1	
	when towns from this is a little
16	
7 10 8 9	
MST = 2+4+6+8+10+12+14+16	at an ending teach has been the
= 72	
	W. What was
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77	

->G	5 a a	b )@		,b qu	- (+)	4)
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))	5	195	b			1
1	8	0			9 7	0
		a,b	6.67	10		728
	K+ K+ 100 B					-1
ation table	e: A make	int. of				
				10	) 8	7
	fs	а	ь	1 1		
	qo	q,	94		-) 1 K) 3	
	9,	qs	92	6 1 4 1	A . 11 1 1 1	The charge
	9	95	93			
	9,3	93	93	-		
_	9,4	<b>93</b>	95	•	-	11)
	q <sub>r</sub>	95	95	41	-	
starting	fiom abb:	->@- a y-	<b>⊕</b>	6 00 03	accepted	(proved)
			1-	0/1-	3 11	1,
starting.	from ba:	<del>&gt;</del> @	b )(2) a	>(9) >(9)	accepted	(proved)
V						

Q4		· · · ·	<del></del>		· · · · · · · · · · · · · · · · · · ·
	o - state ma	whine (FSM) is	a mathematica	model of computation. Every state has	an imu
				lso has an output. It is a computational mo	
		ate sequential lo		· · · · · · · · · · · · · · · · · · ·	
2) 0)					
		a/1 , b/	1		
		6	(D) 6/1		
		0/0			
<b>b</b> )	-	10	C/0		
	<del>(</del>	6/1	1	V-0	
		(%) (%)	0	G2 all	
		cli	a/1 b/0		
			B/1		
			clo		
4) =	C-1.7	0 Ca 14			
3) I=	£4,6} (	0= {0,1}	S = { 00, 01, 03, 0	53 initial state = 06	
3) I=	£9,6} (			3 initial state = Oa	
3) I=	£4,6} (	0= {0,13 fs a b	S = {σο, σι, σ <sub>2</sub> , σ fo a b	initial state = To	
3) ]=	7	fs a b	fø	initial state = 0	
3) 1=	5 1	fs a b	fs a b	initial state = 0a	
3) 1=	5 1 60	fs a b G G1	f <sub>8</sub> a b 0 0	initial state = 0a	
3) I=	5 I 60 d,	fs a b 61 60 61	f <sub>8</sub> a b 0 0	initial state = 0a	
3) I=	5 1 50 41 61	fs a b b c 61 c 62 c 63 c 60	f <sub>8</sub> a b 0 0 1 0	initial state = 0a	
3) I=	5 1 50 41 61	fs a b b c 61 c 62 c 63 c 60	f <sub>8</sub> a b 0 0 1 0	initial state = 0a	
3) I=	5 1 50 41 61	fs a b b c 61 c 62 c 63 c 60	f <sub>8</sub> a b 0 0 1 0	initial state = 0a	
3) I=	5 1 50 41 61	fs a b b c 61 c 62 c 63 c 60	f <sub>8</sub> a b 0 0 1 0	initial state = Oa	
3) I=	5 1 50 41 61	fs a b b c 61 c 62 c 63 c 60	f <sub>8</sub> a b 0 0 1 0	initial state = Oa	
3) I=	5 1 50 41 61	fs a b b c 61 c 62 c 63 c 60	f <sub>8</sub> a b 0 0 1 0	initial state = Oa	
3) I=	5 1 50 41 61	fs a b b c 61 c 62 c 63 c 60	f <sub>8</sub> a b 0 0 1 0	initial state = Oa	