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Latihan

1,4	2,4	3,4	4,4
1,3 W!	2,3	3,3	4,3
1,2 A S OK	2,2 OK	3,2	4,2
1,1 V OK	2,1 B V OK	3,1 P!	4,1

A

 = Agent
B = Breeze
G = Glitter, Gold
OK = Safe square
P = Pit
S = Stench
V = Visited
W = Wumpus

Diketahui agent telah sampai pada kondisi seperti pada gambar di samping: tidak ada apa-apa pada [1,1], ada input berupa bau (stench) pada [1,2], dan belum tahu isi dari [1,3], [2,2], dan [3,1].

Masing-masing dari posisi tsb dapat berisi sebuah lubang (pit) dan masing-masing posisi dapat berisi monster (Wumpus).

Tentukan kondisi yang mungkin (sebanyak 32 possible worlds).

Tandai kondisi dimana KB bernilai benar dan dimana masing-masing kalimat berikut benar:

α_2 = "There is no pit in [2,2]."

α_3 = "There is a wumpus in [1,3]."

Dengan demikian tunjukkan bahwa $KB \models \alpha_2$ dan $KB \models \alpha_3$

POSSIBLE WORLDS

1	2	3	4
ok	PIT	ok	ok
S	S OK	S PIT	S ok
ok B ok	ok B OK	ok B OK	ok B PIT
5	6	7	8
PIT	PIT	ok	PIT
S PIT	S PIT	S PIT	S OK
ok B PIT	ok B OK	ok B PIT	ok B PIT
9	10	11	12
W	W	W	W
S OK	S PIT	S PIT	S OK
ok B OK	ok B PIT	ok B OK	ok B PIT
13	14	15	16
ok	PIT	PIT	OK
S W	S W	S W	S W
ok B OK	ok B PIT	ok B OK	ok B PIT
17	18	19	20
ok	PIT	PIT	OK
S OK	S PIT	S OK	S PIT
ok B W	ok B W	ok B W	ok B W
21	22	23	24
PIT,W	ok	ok	PIT
S OK	S PIT,W	S ok	S PIT,W
ok B OK	ok B OK	ok B PIT,W	ok B OK
25	26	27	28
PIT,W	PIT,W	PIT	
S PIT	S OK	S OK	S PIT,W
ok B OK	ok B PIT	ok B PIT,W	ok B PIT
29	30	31	32
OK	PIT,W	PIT	PIT
S PIT	S PIT	S PIT,W	S PIT
ok B PIT,W	ok B PIT	ok B PIT	ok B PIT,W

Beberapa di antaranya tidak akan pernah terjadi karena hanya bisa menjadi PIT atau WUMPUS, bukan keduanya.

$\alpha_2 = \text{“There is no pit in [2,2].”}$

Kondisi dimana [2,2] bernilai benar

<div>$\alpha_2 = \text{“There is no pit in [2,2].”}$</div>															
1				2				4				8			
ok				PIT				ok				PIT			
S	ok			S	OK			S	ok			S	OK		
ok	B	ok		ok	B	OK		ok	B	PIT		ok	B	PIT	
9				12				13				14			
W				W				ok				PIT			
S	OK			S	OK			S	W			S	W		
ok	B	OK		ok	B	PIT		ok	B	OK		ok	B	PIT	
15				16				17				19			
PIT				OK				ok				PIT			
S	W			S	W			S	OK			S	OK		
ok	B	OK		ok	B	PIT		ok	B	W		ok	B	W	
21				26				27				28			
PIT,W				PIT,W				PIT				S	PIT,W		
S	OK			S	OK			S	OK			ok	B	PIT	
ok	B	OK		ok	B	PIT		ok	B	PIT,W		ok	B	PIT	

α_3 = “There is a wumpus in [1,3].”

Kondisi dimana [1,3] bernilai benar

<div> α_3 = “There is a wumpus in [1,3].” </div>																			
9				10				11				12				21			
W				W				W				W				PIT,W			
S	OK			S	PIT			S	PIT			S	OK			S	OK		
ok	B	OK		ok	B	PIT		ok	B	OK		ok	B	PIT		ok	B	OK	
25				26				30											
PIT,W				PIT,W				PIT,W				PIT,W				PIT,W			
S	OK			S	PIT			S	OK			S	PIT			S	OK		
ok	B	OK		ok	B	OK		ok	B	PIT		ok	B	PIT		ok	B	OK	

Knowledge Base

Knowledge Base (KB) wumpus

- stench di [1,2] berarti ada wumpus di [1,3]
- Breeze di [2,1] berarti ada lubang di [3,1]

$KB \models \alpha_2$ jika semua dunia dimana KB bernilai benar juga merupakan world dimana α_2 bernilai benar.

$KB \models \alpha_3$ jika semua dunia dimana KB bernilai benar juga merupakan world dimana α_3 bernilai benar.

Tidak semua world KB ada di α_2 , jadi KB tidak entail α_2 . Semua world KB ada di α_3 , jadi KB entail α_3 .

$KB \not\models \alpha_2$ (KB does not entail α_2)

$KB \models \alpha_3$ (KB entails α_3)

12			
W			
S	OK		
ok	B	PIT	