Multi-Agents Systems: Coursework (ag6609 - dk2709 - jzk09)

Question 3

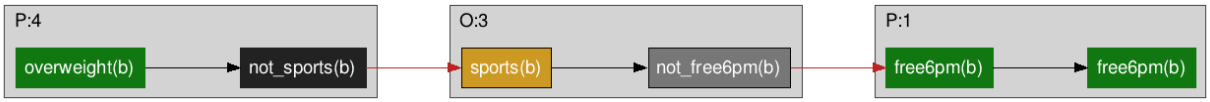
A

| ?- grounded((free6pm(b),X)).
X = [free6pm(b)] ?
yes

B (i)

P: Proponent	*O:Opponent*	*D:Assumptions supporting Proponent*	*C: Culprits chosen in opponent*	*Explanation*
{free6pm(b)}	{}	{free6pm(b)}	{}	According to the rule free6pm(b) is an assumption
{}	{not_free6pm(b)}	{free6pm(b)}	{}	O tries to attack with the contrary
{}	{{sports(b)}}	{free6pm(b)}	{}	not_free6pm(b) depends on sports(b) according to the rules
{not_sports(b)}	{}	{free6pm(b)}	{sports(b)}	P tries to prove the contrary of the O
{overweight(b)}	{}	{free6pm(b), overweight(b)}	{sports(b)}	not_sports(b) depends on overweight(b) in the rules
{}	{{not_overweight(b)}}	{free6pm(b), overweight(b)}	{sports(b)}	O tries to attack with the contrary
{}	{}	{free6pm(b), overweight(b)}	{sports(b)}	O cannot contradict because there nothing in the rules, P wins!

B (ii)



C

According to the grounded extension nobody gets an appointment. The execution doesn't terminate or it returns "no". Using different strategies we get every statement to terminate but the result is always "no".

For the stable semantics we used ASPARTIX to generate the stable sets. We get two stable sets as follows:

Set 1:

{not_get6pm(a), get6pm(b), not_get8am(a), not_free8am(a), free6pm(b), not_sports(b), not_get8am(b)}

Set 2:

{get6pm(a), not_get8am(a), get8am(b), not_get6pm(b), not_free8am(a), free6pm(b), not_sports(b)}

Set 1 allocates a 6pm appointment to Bob and no appointment to Alice. Set 2 allocates a 6pm appointment to Alice an a 8am appointment to Bob.