

I Modeling Arguments

Exercise I

Represent the following text as an abstract argumentation framework.

Bob has sold his house to Alice. She asked Chuck, a building worker, to help her renovate the house. During the renovation, Chuck has found a set of highly valuable paintings. They discuss to determine who should have the paintings.

- a Alice says that the paintings have been found in her house, so she should get them.
- b Chuck says that he has found the paintings when he broke a ceiling, otherwise Alice would not even know their existence. Since he found them thanks to his work, he should get them.
- c Alice replies that he discovered the paintings while working for her, so the result of his work belongs to her.
- d When Bob learns about the paintings, he tells Alice that he only sold her the house, not its content. So he considers that he should have the paintings.
- e Alice then answers that, in that case, Bob himself was never the real owner of the paintings, since when he bought the house he didn't know about the paintings existence.

Exercise II

Represent the following text as an abstract argumentation framework.

Alice and Bob must hire a new coworker. They hesitate between two candidates, Chuck and Daisy. This is their dialogue.

A : Chuck is the best candidate, we should hire him.

B : Chuck is disordered, so Daisy is a better candidate.

A : Chuck has high skills, it is more important. Moreover, Daisy has not much experience.

B : Chuck has not much experience either.

A : Yes, but he did longer studies.

II Reasoning with Abstract Argumentation Frameworks

Exercise III

For the following abstract argumentation frameworks $F = (A, R)$, give a graphic representation, and compute their extensions for the different semantics (complete, preferred, stable, grounded). For each semantics, give the sets of credulously and skeptically accepted arguments.

1. $A = \{a, b, c\}$, $R = \{(c, b), (b, a)\}$
2. $A = \{a, b\}$, $R = \{(a, b), (b, a)\}$

3. $A = \{a,b,c\}, R = \{(a,b),(b,a),(a,c)\}$
4. $A = \{a,b,c\}, R = \{(a,b),(b,a),(c,a)\}$
5. $A = \{a,b,c,d\}, R = \{(b,d),(b,a),(d,c),(c,b)\}$
6. $A = \{a,b,c,d,e\}, R = \{(b,d),(d,b),(b,c),(c,b),(c,d),(d,c),(e,c),(c,e)\}$
7. $A = \{a,b,c,x,y\}, R = \{(x,y),(a,y),(a,b),(b,c),(c,a)\}$
8. $A = \{a,b,c,d\}, R = \{(a,d),(d,b),(d,c),(b,c),(c,b)\}$
9. $A = \{a,b,c,d\}, R = \{(b,a),(c,a),(d,c)\}$
10. $A = \{a,b,c,d,e,f\}, R = \{(d,b),(d,c),(b,a),(c,a),(e,c),(f,e)\}$