

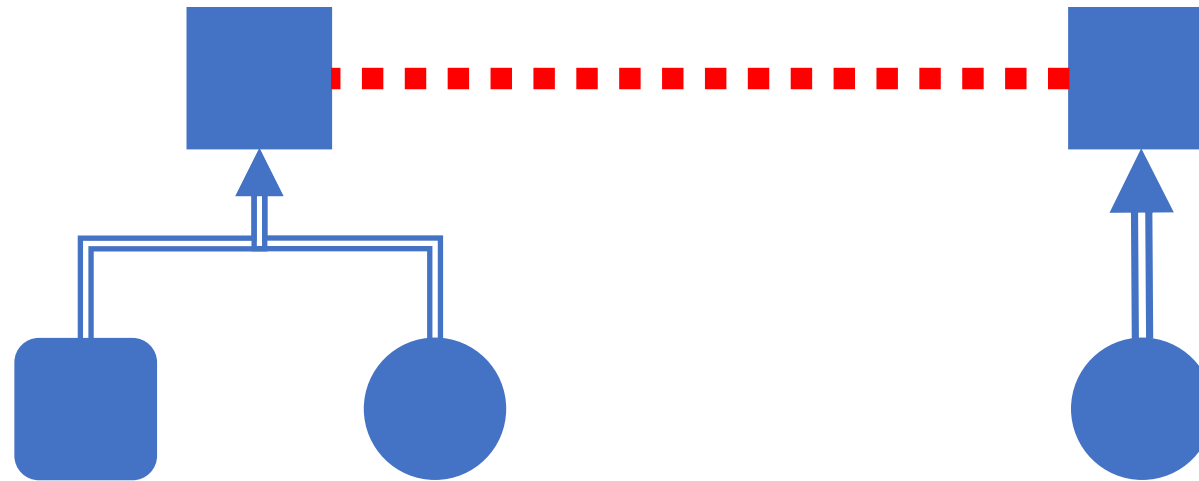
Block 3: Abstract argumentation

Argumentation

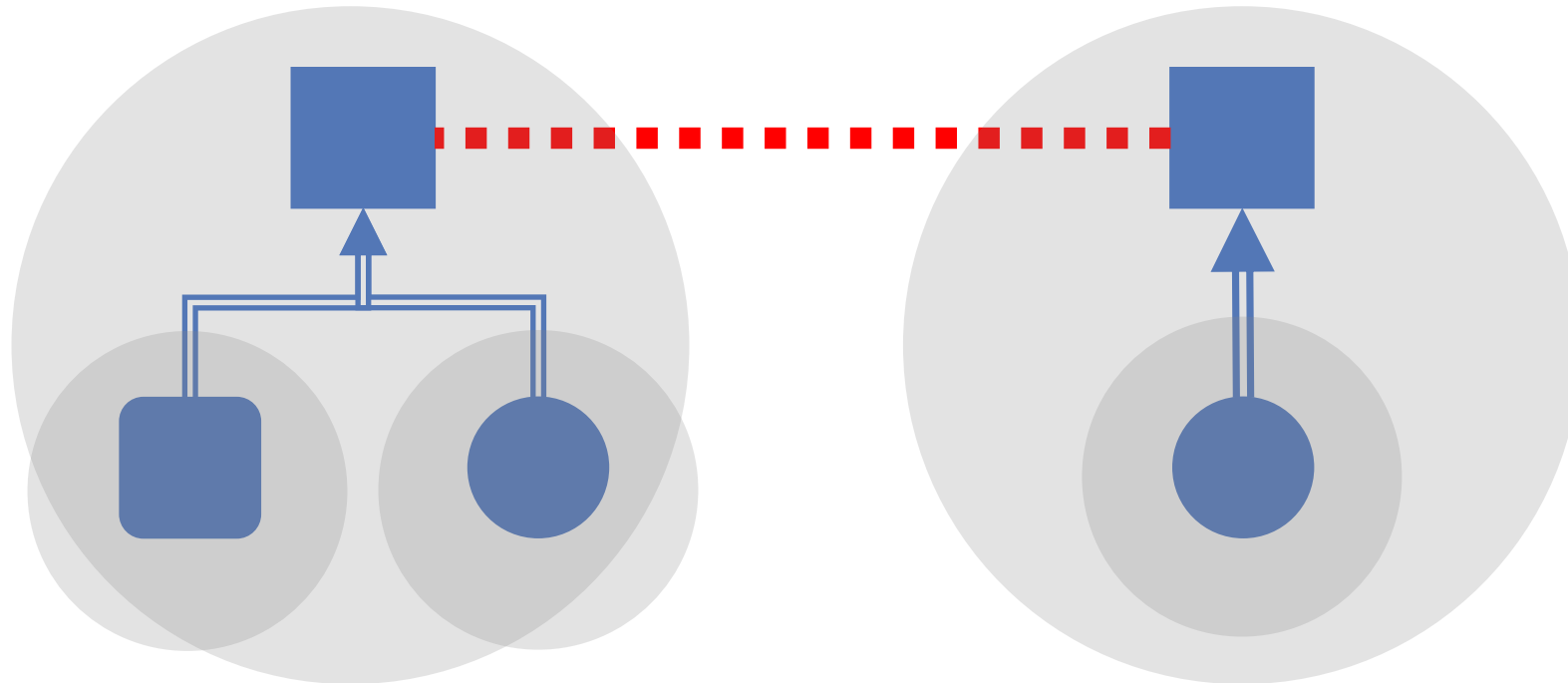
“A process based on three steps: the exchange of arguments, the valuation of interacting arguments, and the definition of the most acceptable of these arguments.”

(C. Cayrol and M.C., Lagasquie-Schiex, 2005)

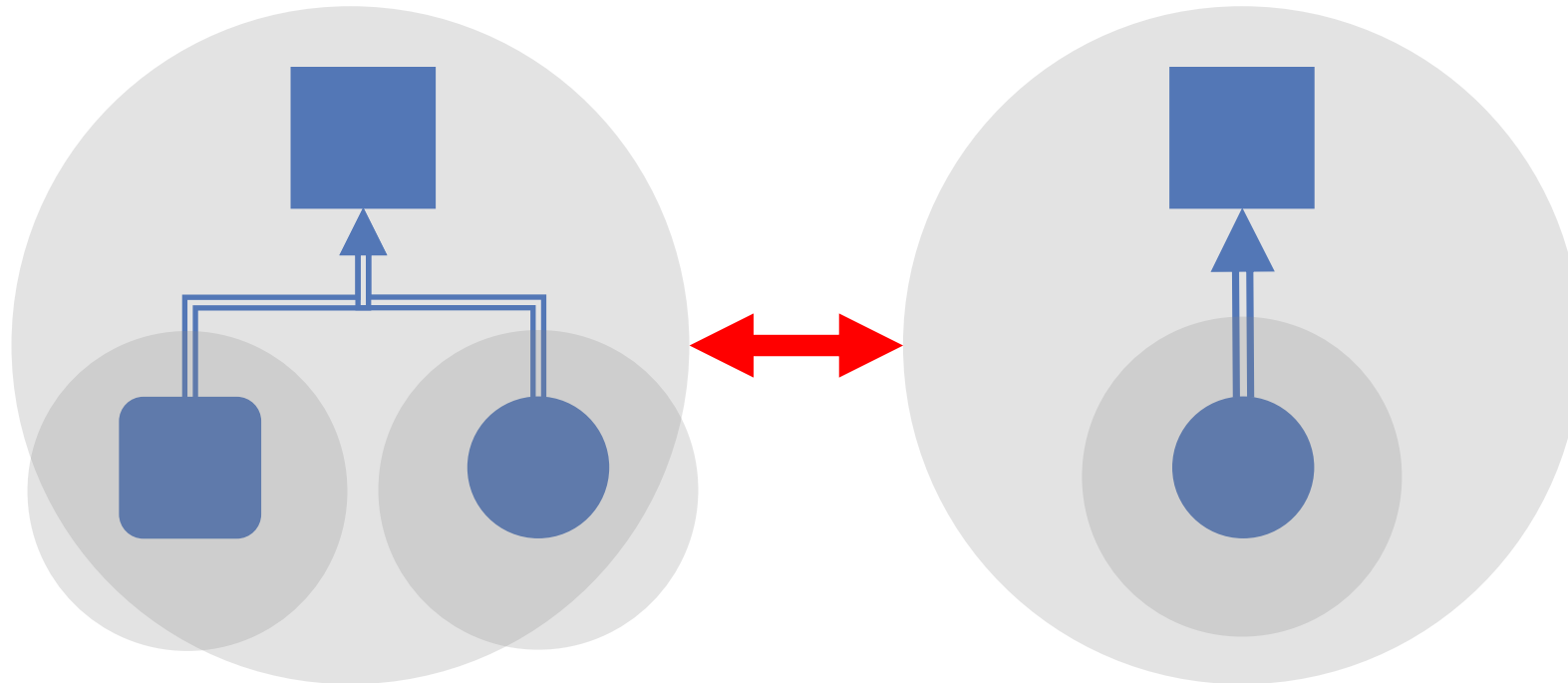
Argumentation frameworks



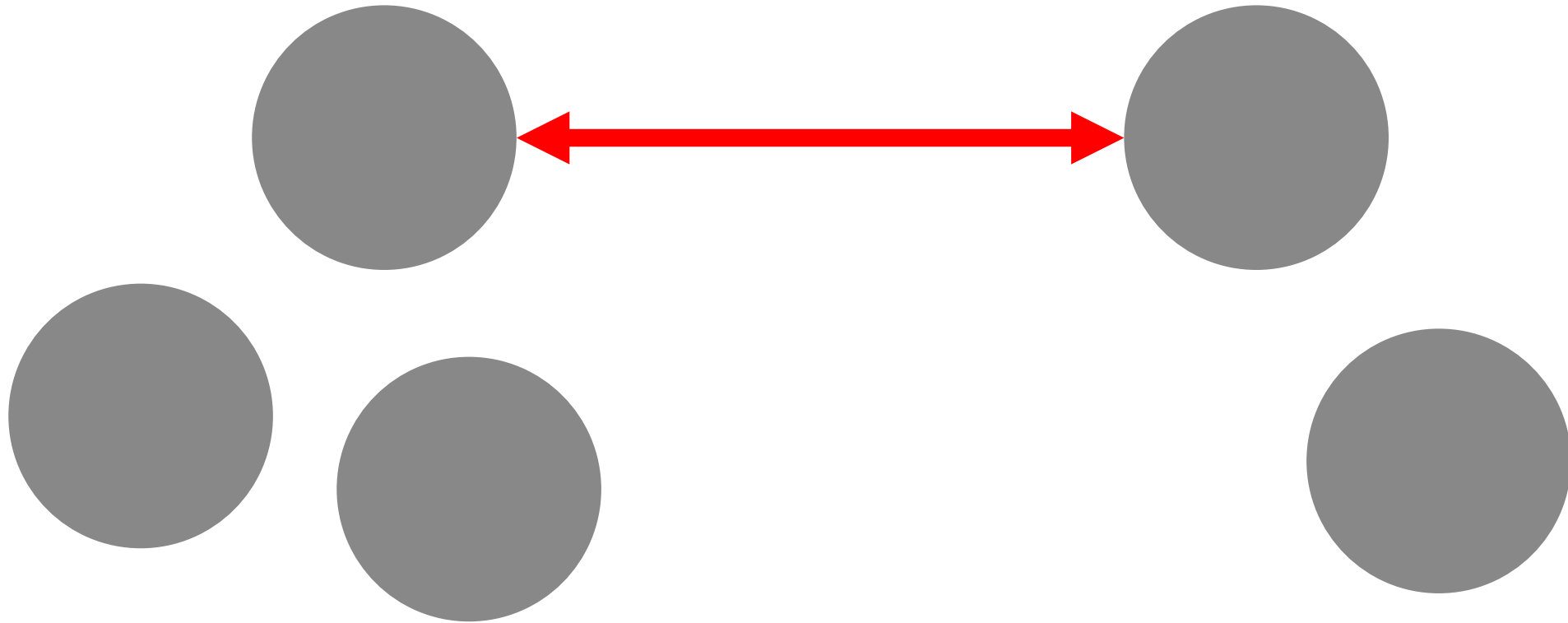
Argumentation frameworks



Argumentation frameworks



Argumentation frameworks

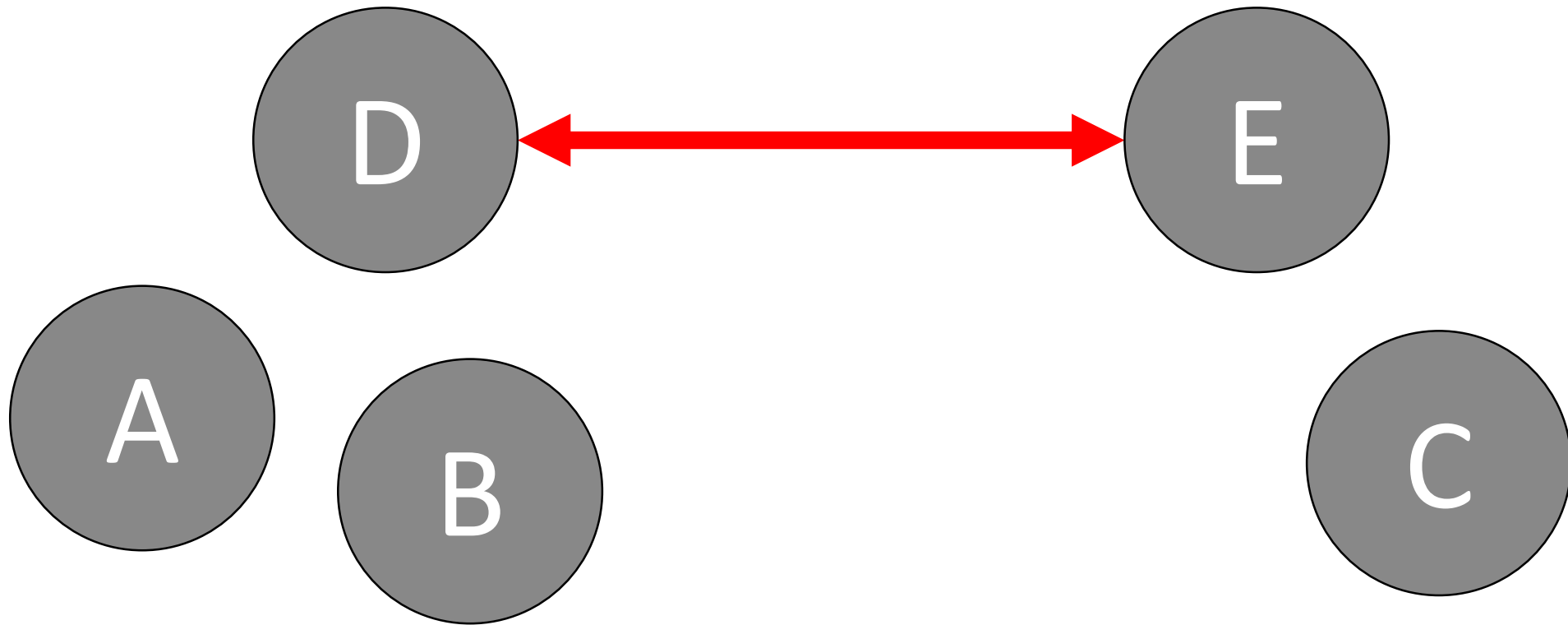


Semantics

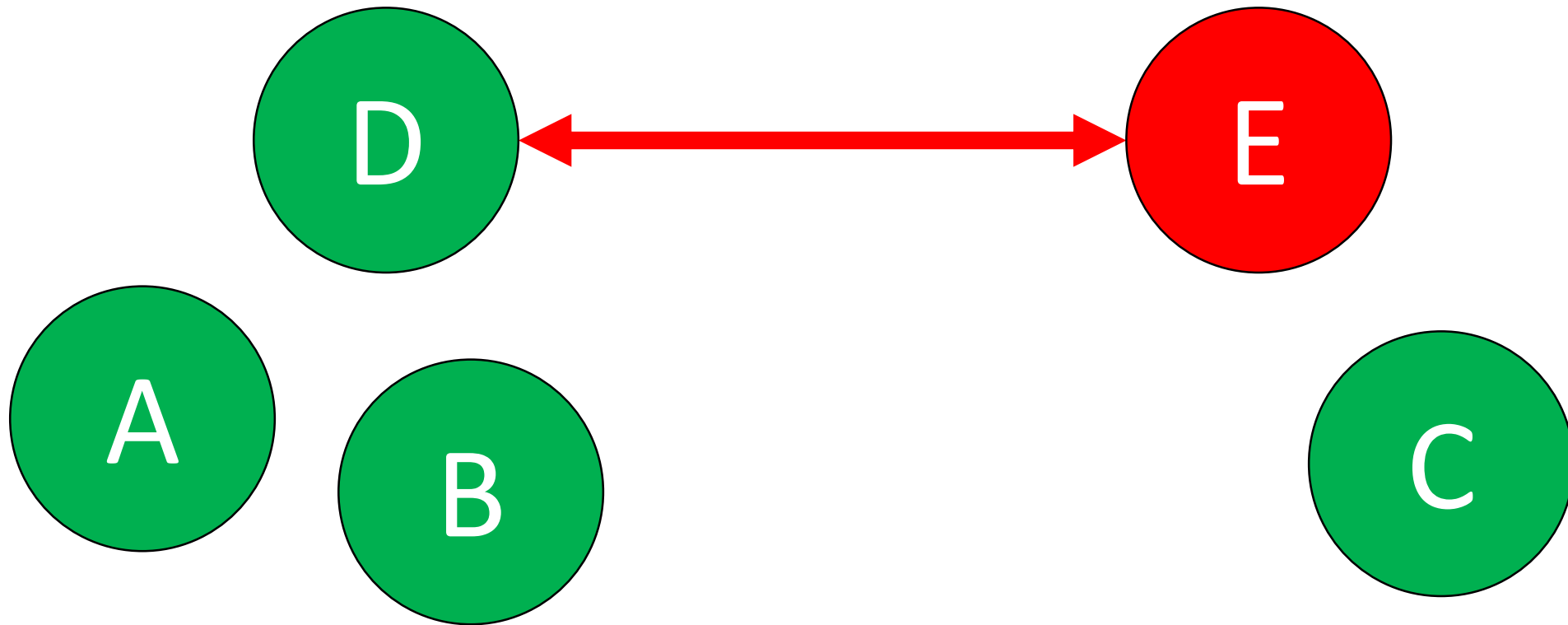
Complete labellings

- If one attacker is **IN** then the argument is **OUT**.
- If all attackers are **OUT** then the argument is **IN**.
- Otherwise, the argument is **UNDECIDED**.

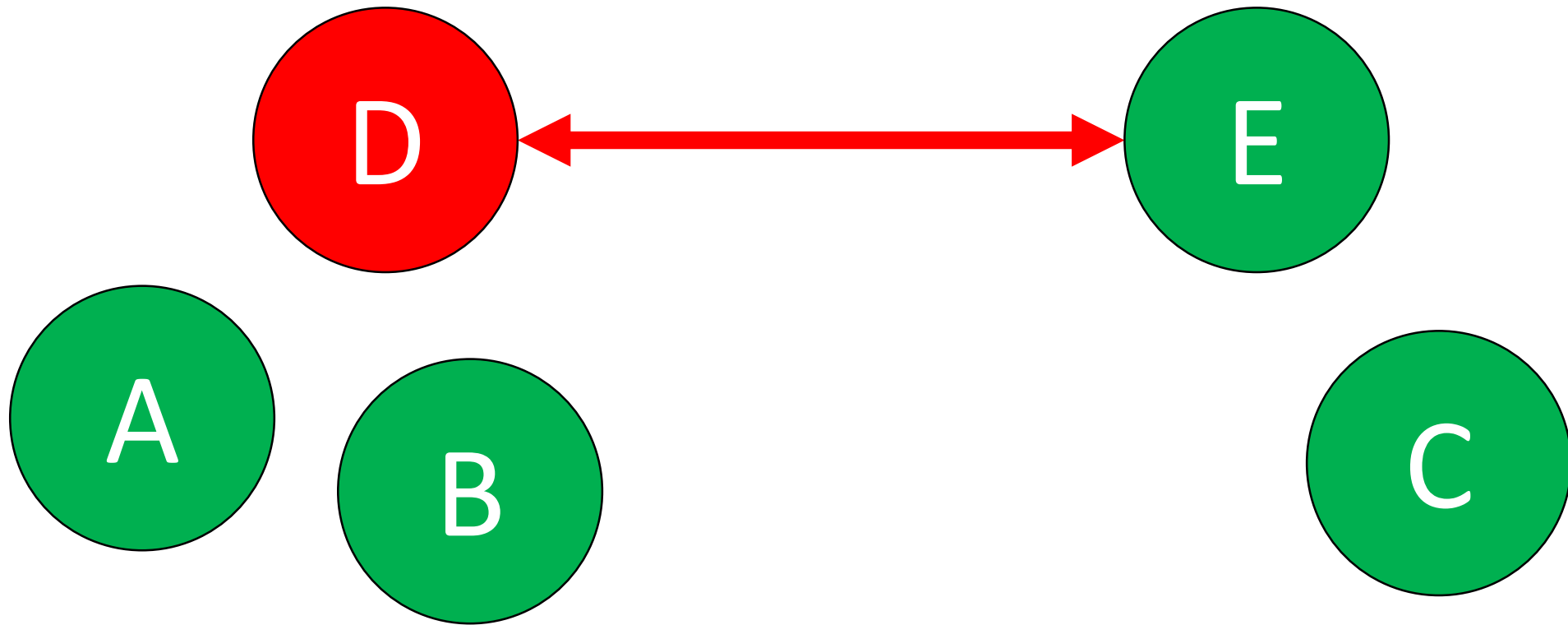
Which are the complete labellings?



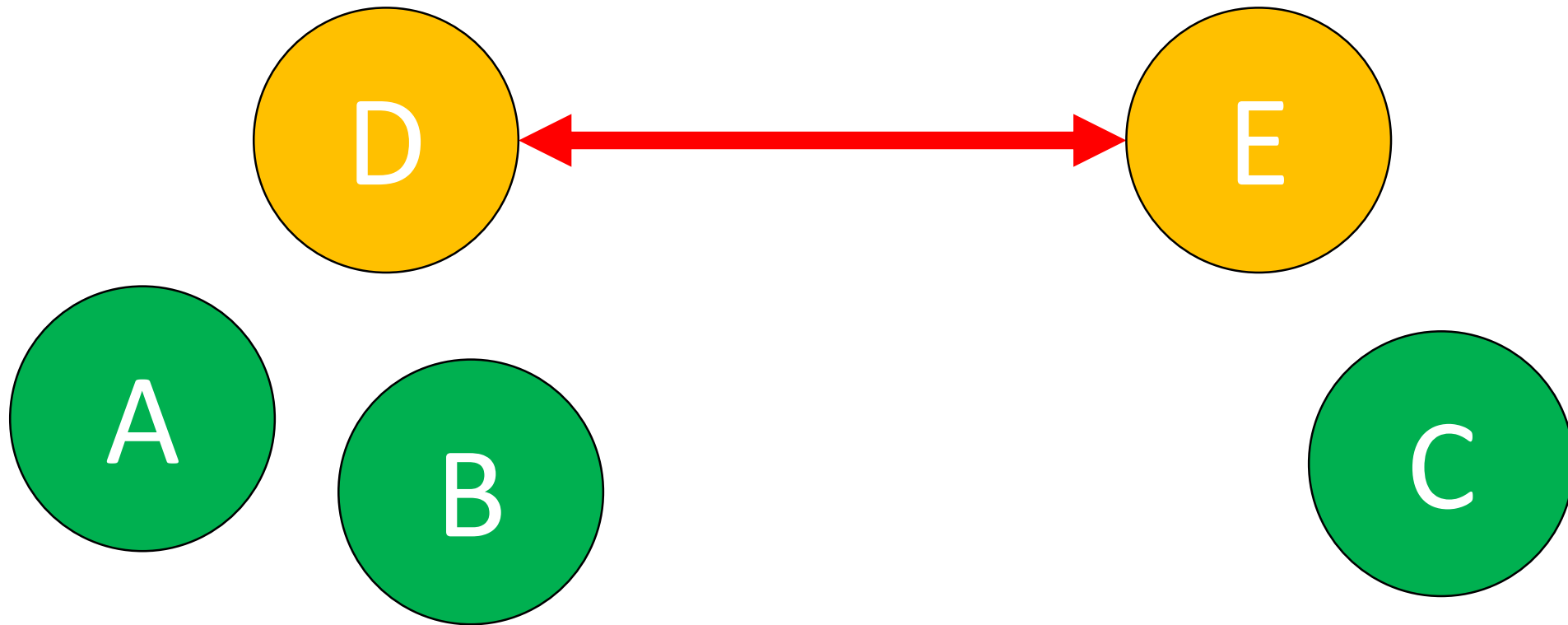
Which are the complete labellings?



Which are the complete labellings?



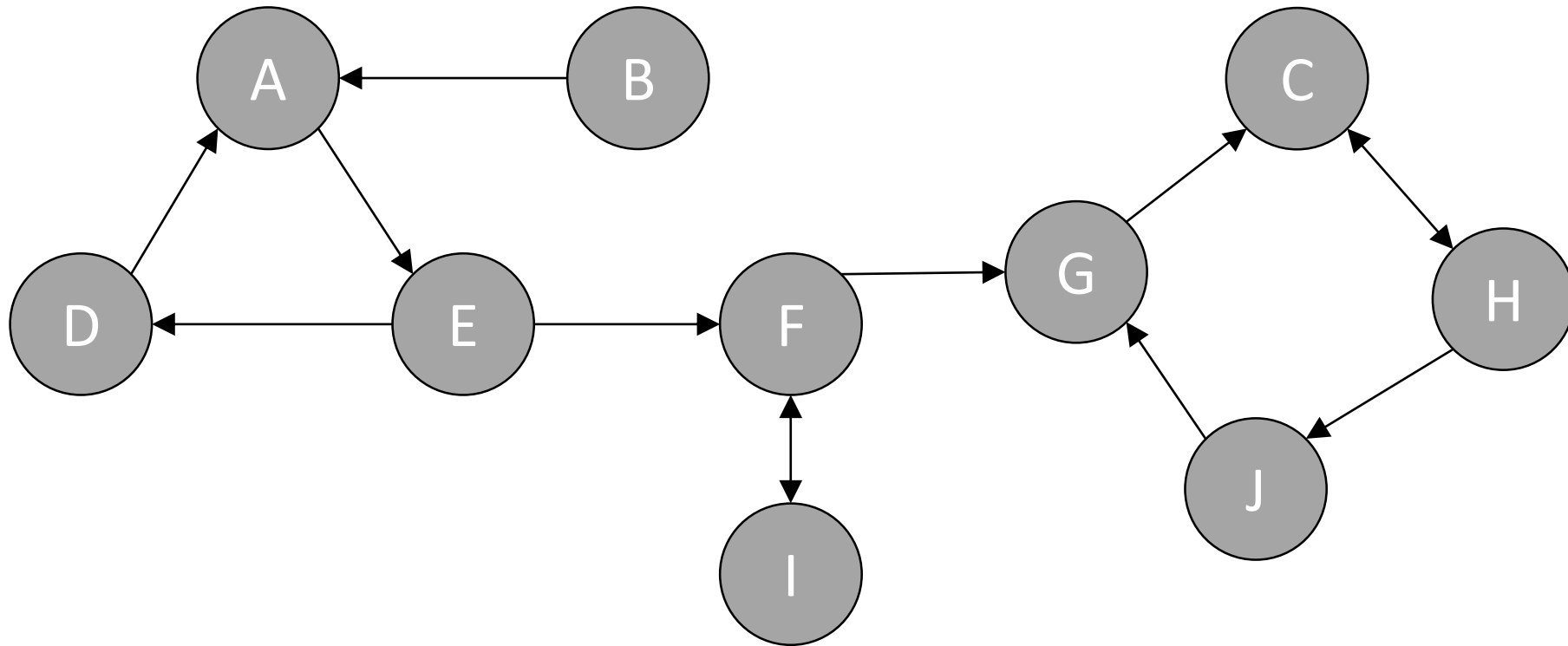
Which are the complete labellings?



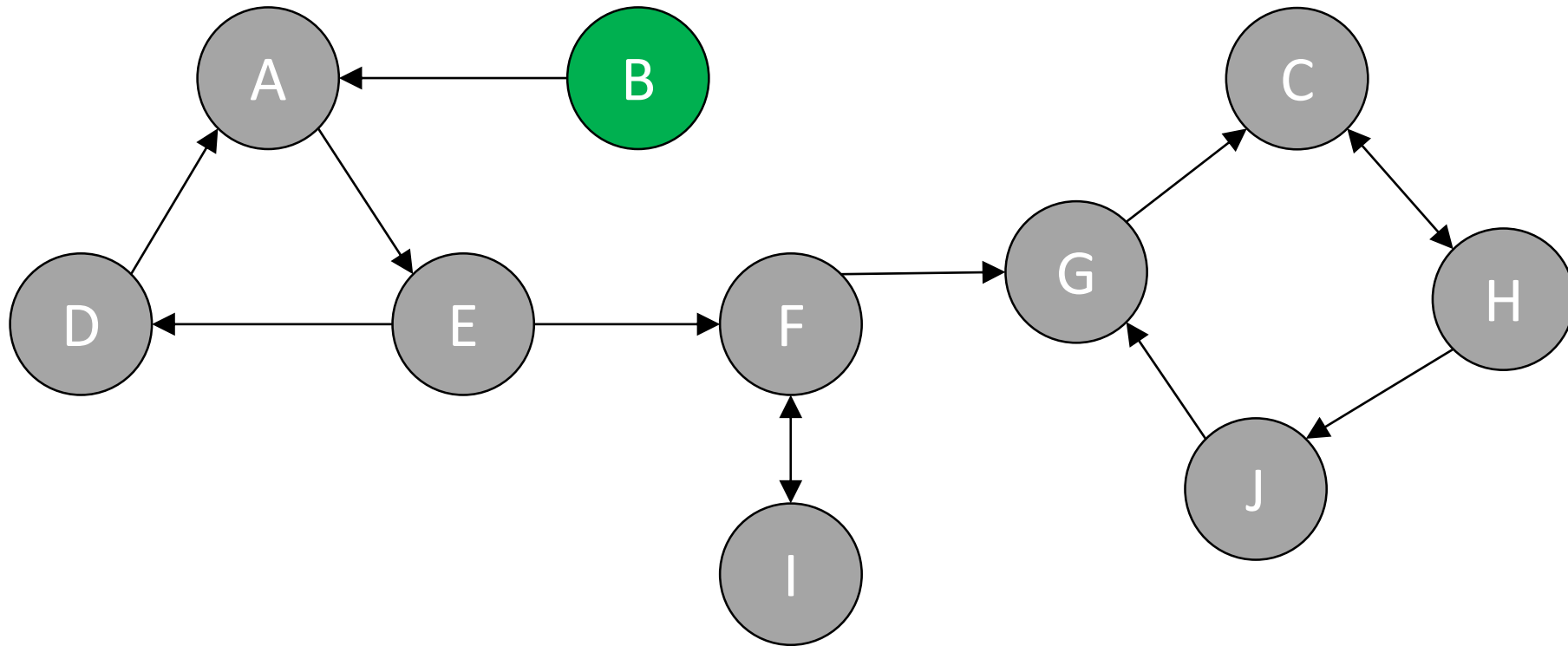
Grounded labelling

- If one attacker is **IN** then the argument is **OUT**.
- If all attackers are **OUT** then the argument is **IN**.
- Otherwise, the argument is **UNDECIDED**.
- Minimize the **IN** arguments.

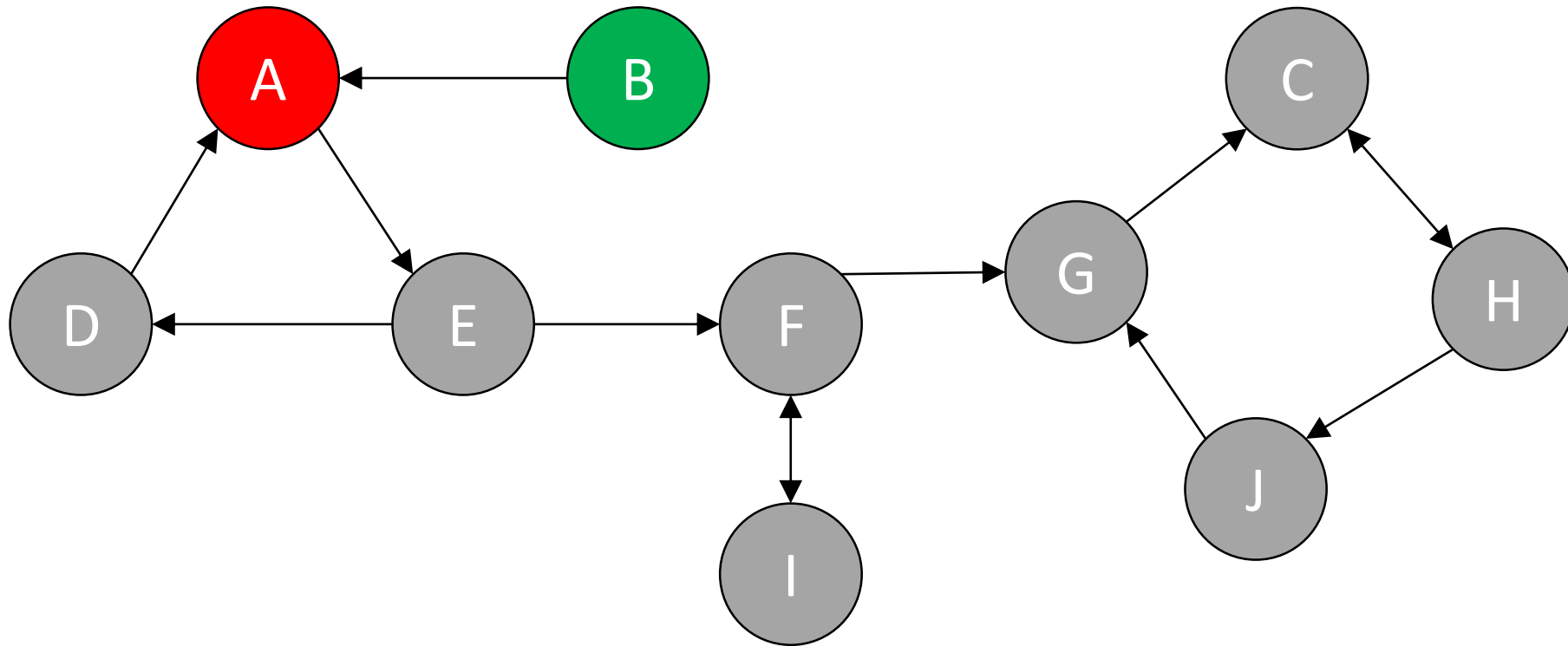
Which are the grounded labellings?



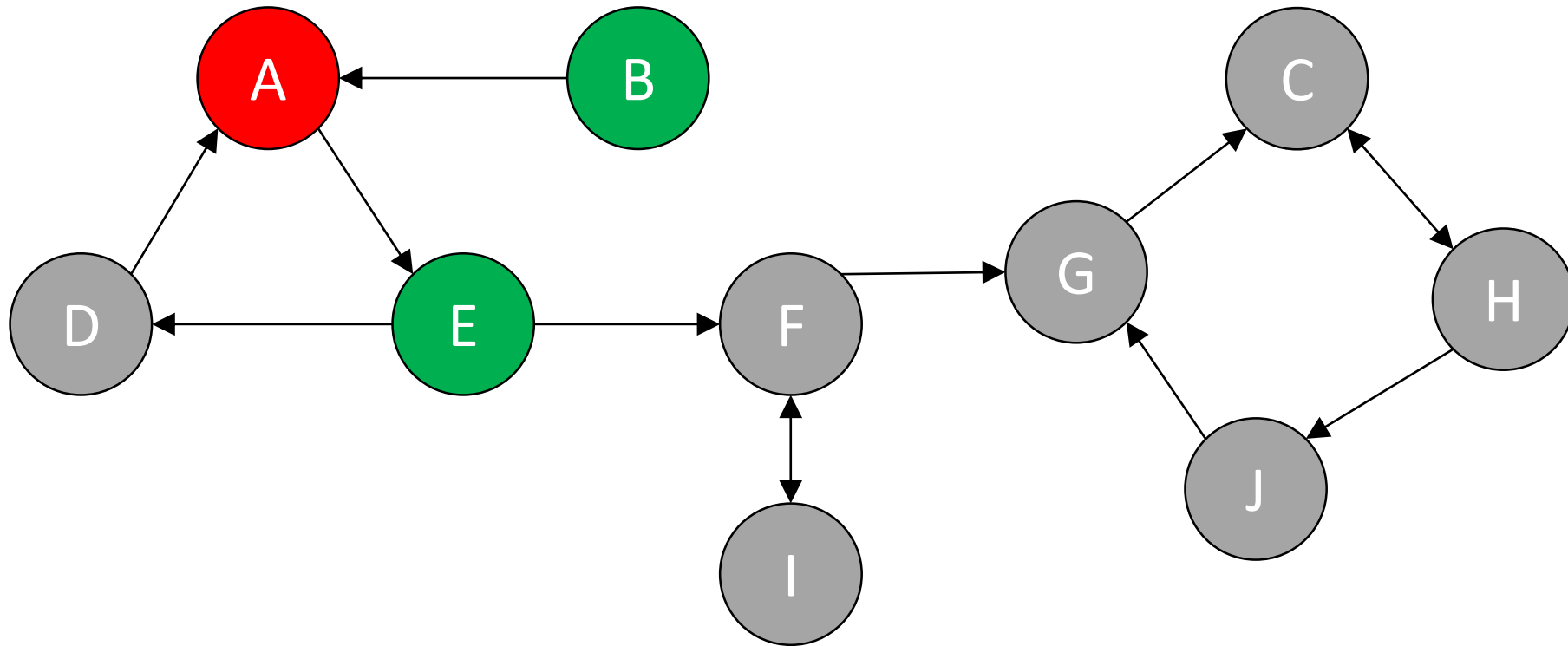
Which are the grounded labellings?



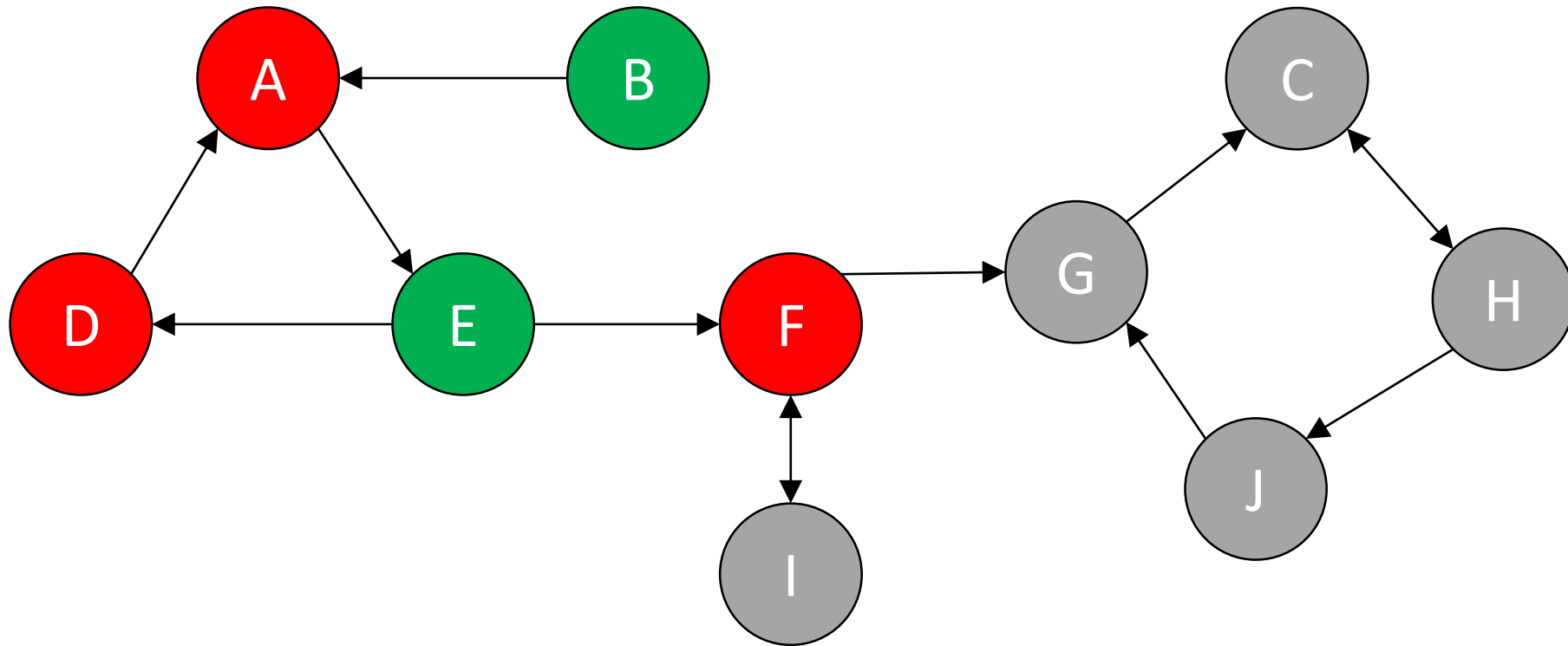
Which are the grounded labellings?



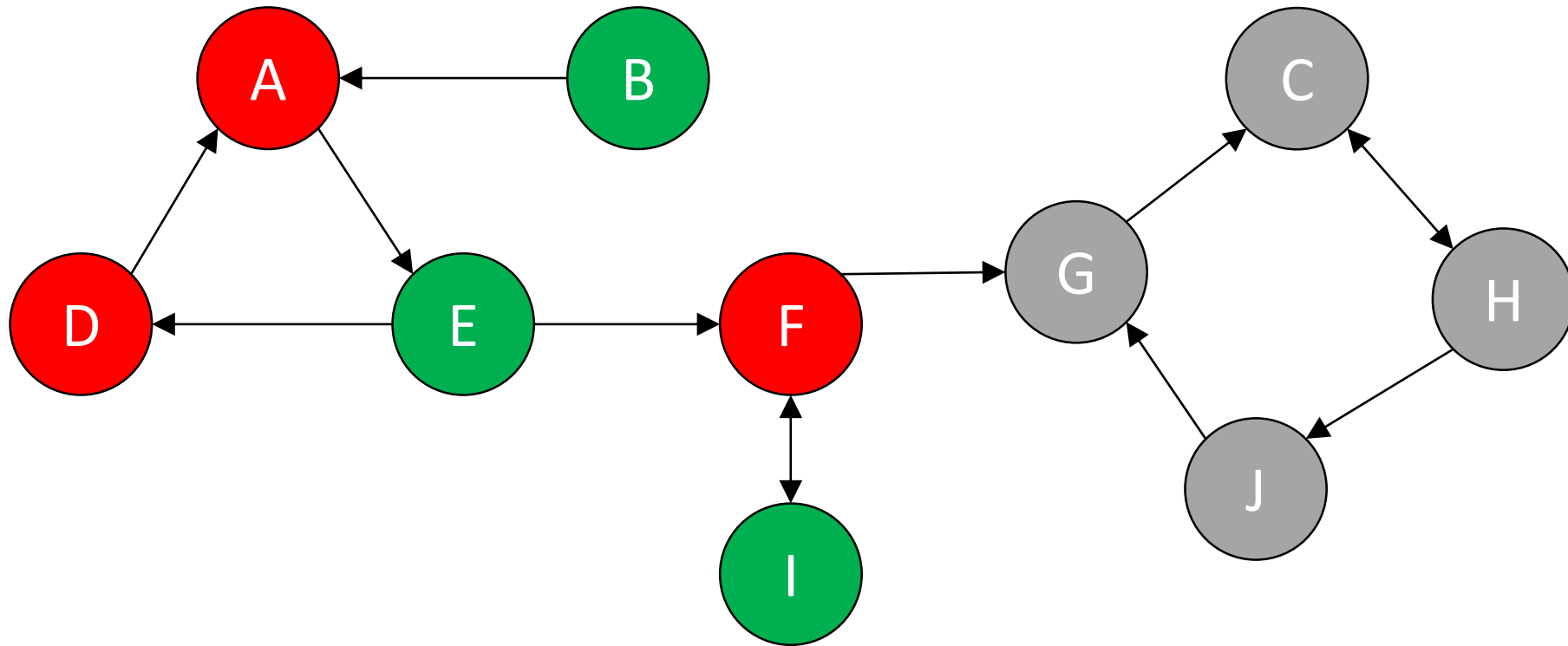
Which are the grounded labellings?



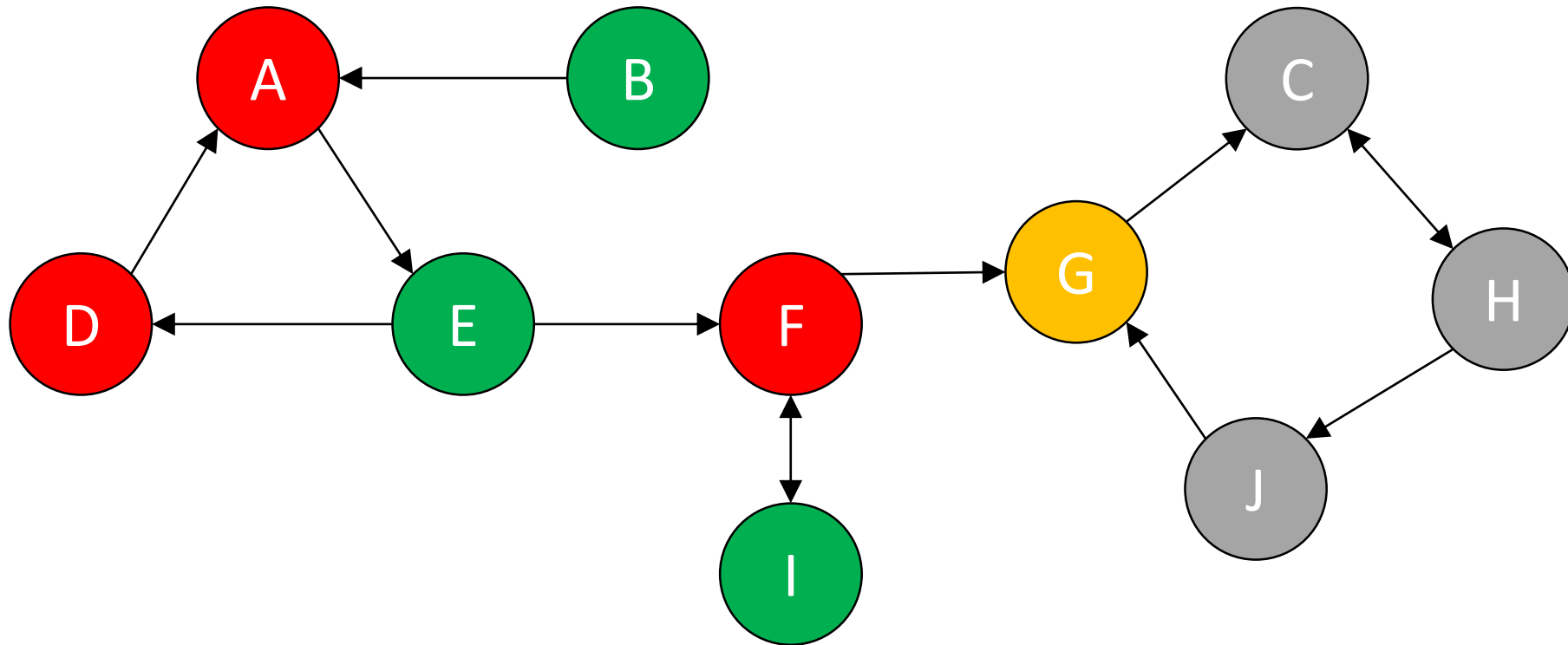
Which are the grounded labellings?



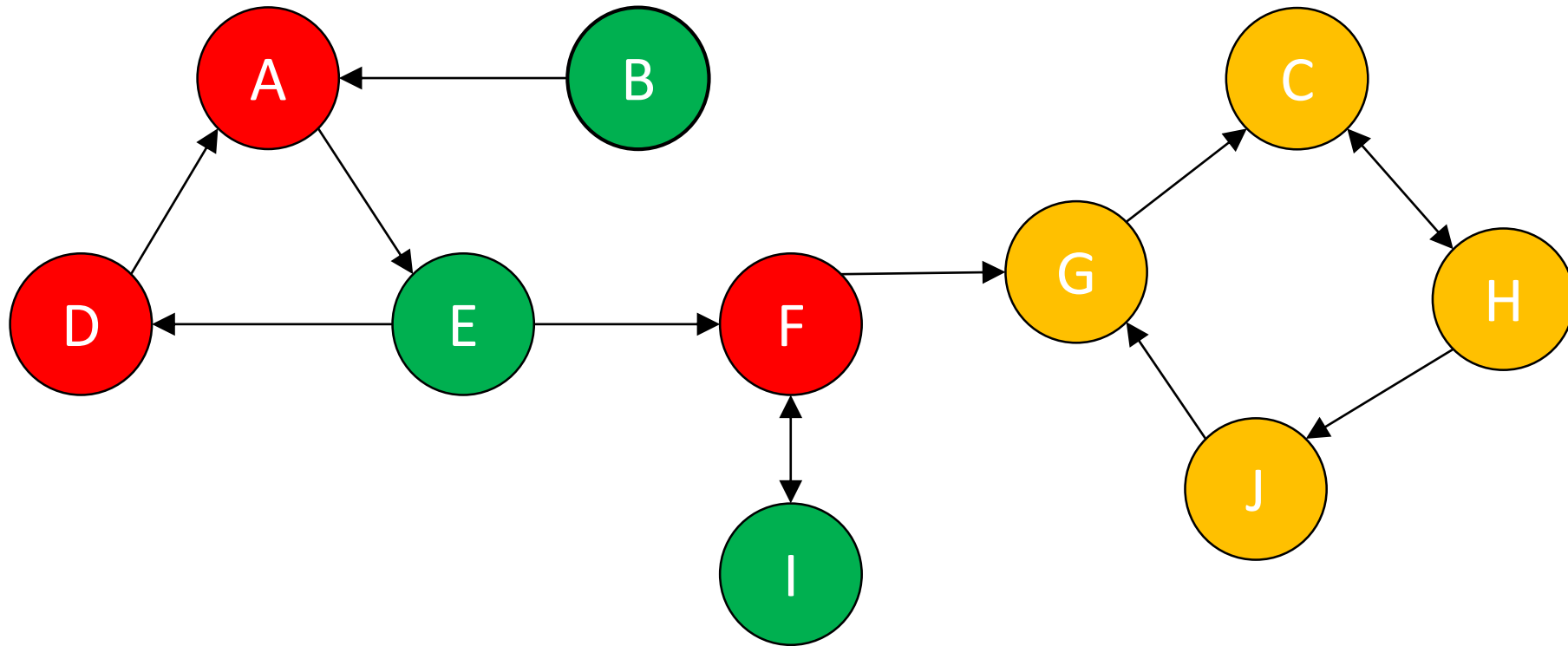
Which are the grounded labellings?



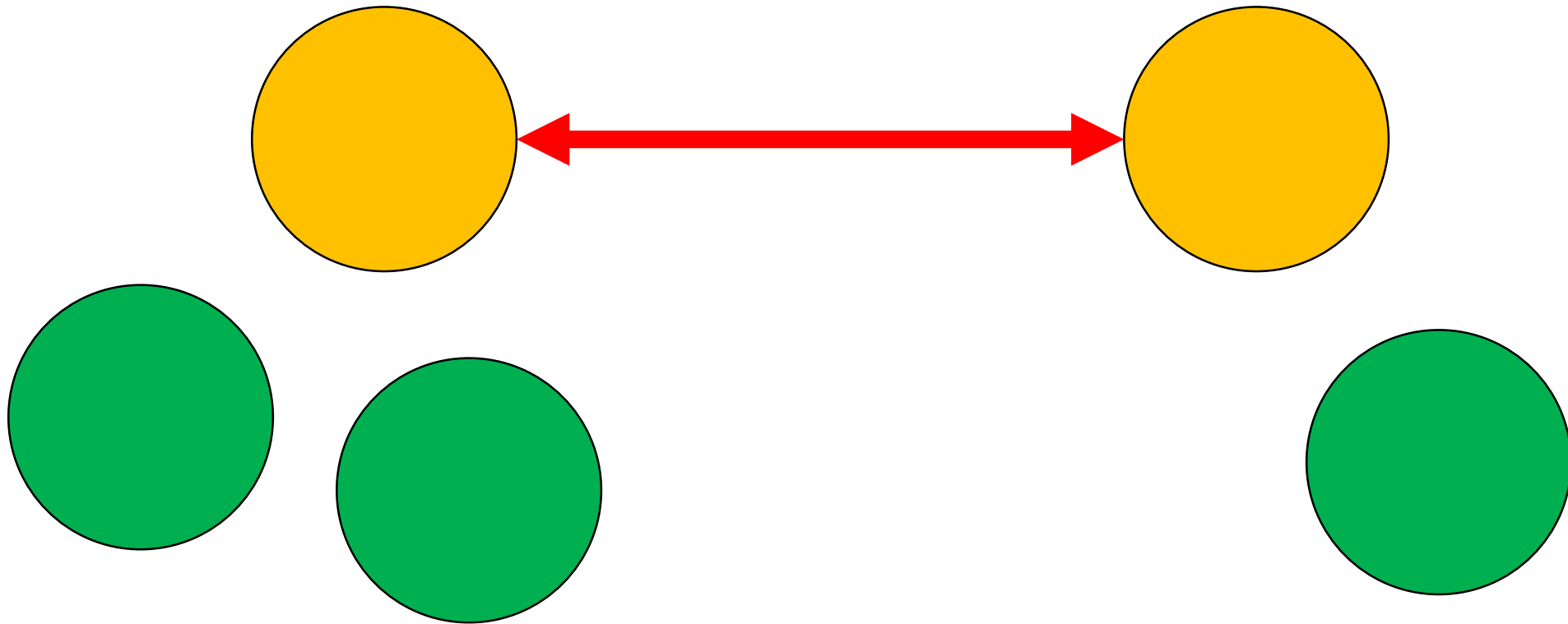
Which are the grounded labellings?



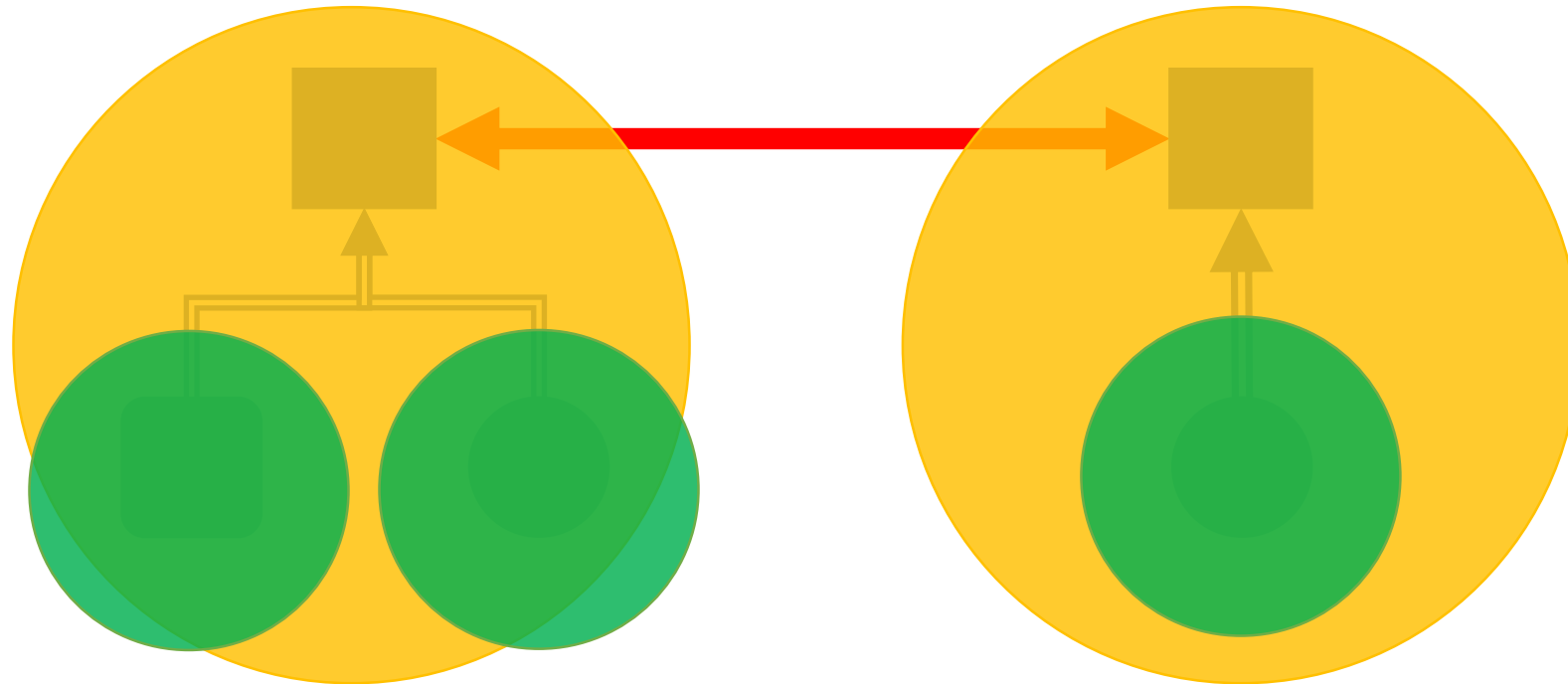
Which are the grounded labellings?



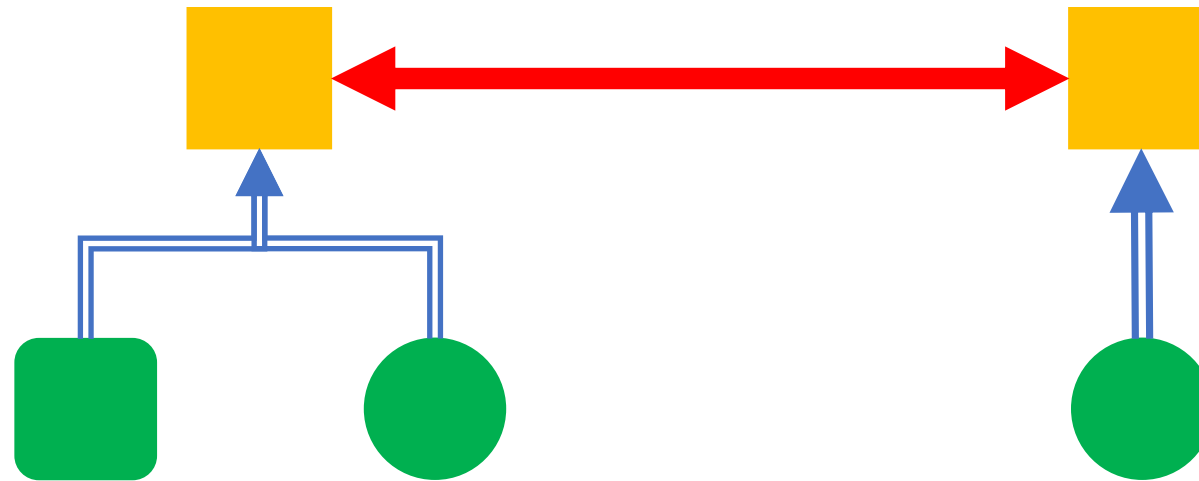
Statement status (grounded)



Statement status (grounded)



Statement status (grounded)



Visualisation of ASPIC+ argumentation theories

ASPIC+ Argumentation Theory ▾

Evaluation ▴

Semantics Complete ▾

Evaluation strategy Credulous ▾

The extension(s):

```
{humans_explain, [humans_explain,ai_not_explain=>humans_more_trust],
 [aim_work_fun,repitive_not_fun=>no_repitive],
 [[aim_work_fun,repitive_not_fun=>no_repitive]=>apply_ai], ai_not_explain, aim_work_fun,
 repitive_not_fun, ai_more_efficient_than_humans,
 [ai_more_efficient_than_humans=>apply_ai]}
```

```
{humans_explain, [humans_explain,ai_not_explain=>humans_more_trust],
 [aim_work_fun,repitive_not_fun=>no_repitive], ai_not_explain, aim_work_fun,
 repitive_not_fun, ai_more_efficient_than_humans,
 [[humans_explain,ai_not_explain=>humans_more_trust]=>-apply_ai]}
```

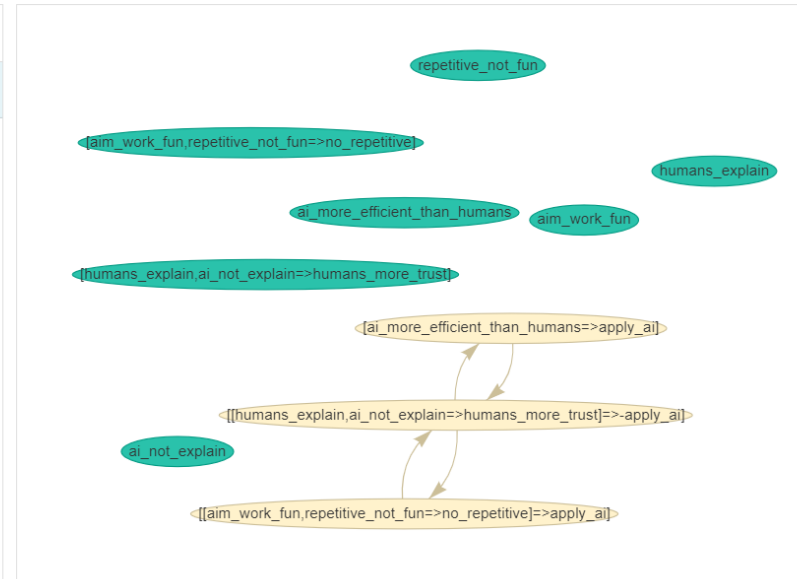
```
{aim_work_fun, repitive_not_fun, humans_explain, ai_more_efficient_than_humans,
 [humans_explain,ai_not_explain=>humans_more_trust],
 [aim_work_fun,repitive_not_fun=>no_repitive], ai_not_explain}
```

The accepted formula(s):

-apply_ai ai_more_efficient_than_humans ai_not_explain aim_work_fun apply_ai

humans_explain humans_more_trust no_repitive repitive_not_fun

Explanation ▾



<https://pyarg.npai.science.uu.nl/>

Argumentation

“A verbal, social, and rational activity aimed at convincing a reasonable critic of the **acceptability of a standpoint by putting forward a constellation of propositions** justifying or refuting the proposition expressed in the standpoint.”

(F. H. Van Eemeren and R. Grootendorst, 2004)

Argumentation

Dialogue



“A verbal, social, and rational activity aimed at convincing a reasonable critic of the acceptability of a standpoint by putting forward a constellation of propositions justifying or refuting the proposition expressed in the standpoint.”

(F. H. Van Eemeren and R. Grootendorst, 2004)