SoSe 2022

Introduction to Formal Semantics

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Exercise sheet n.3

Total points -/25

Note. Are there questions you would like to discuss during the tutorial? If yes, please send them to me (nddascalu@lsv.uni-saarland.de) so that we can go through them together.

Exercise 1 (-/4)

Choose two tasks among the following:

Task 1:

(a) Explain FUNCTIONS.

(b) Explain ASSIGNMENT FUNCTIONS.

Task 2:

(a) Illustrate the SEMANTICS OF L_{PRED}.

(b) Represent a MODEL of your choice, however make sure to include:

- constants + interpretation;
- variables + assignment function;
- some formulas;
- matrix;
- optional: set-theoretic representation of your model;

Exercise 2 (-/12)

Represent the following sentences both in first-order propositional[1] and predicate logic[2]:

(1) Rick buys a bottle of gin while Morty dates Jessica.

(2) If all girls wanna have fun and Cindy Lauper is a girl, then she wants to have fun.

(3) Han is either Keylo's father or Rey's.

(4) Only two stars exist.

(5) A software company that develops games not far from Osaka.

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[1] "Socrates is mortal" = p

[2] Allowed are: (a) FOL representations (e.g. *Logic in Action*, CHP 4 notation or similar), or (b) notations as shown in the Lecture_3. Make sure your style is clear and consistent.

(6) A friend of Harry Potter is unemployed.

Exercise 3 (-/9)

Give an interpretation of the following sentences using the semantics of L_{Pred} and represent a matrix for the assignment function when needed.

(1) Ally loves Jack.
(2) John rents Susan the flat.
(3) Phoebe is Prue's and Piper's sister.
(4) Robert Pattinson is Batman.
(5) Somebody is lazy.
(6) Everyone is unique.

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