
Assignment 2 (Due: May 13) (10 pts)
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1. English to Prolog via Geography

Build a sample database of geographical information by listing facts for the following five predicates: *ocean(X)* means X is an ocean; *country(X)* means X is a country; *continent(X)* means X is a continent; *borders(X, Y)* means X borders Y, where X and Y are either countries or oceans; and *loc(X, Y)* means X is located in Y, where X is a country and Y is a continent. (Include enough data to provide non-null answers to the following questions.)

1. What European countries border an ocean?
2. What oceans border some Asian country, but do not border an African country?
3. Find all pairs of countries located in different continents that border a common ocean.
4. Find all pairs of countries A and B, where A and B have a common border, A borders one ocean, B borders another ocean, and A and B do not border the same ocean.

2. Non-looping Meta-Interpreter

Write a propositional “pure” Prolog (proplog) meta-interpreter that simulates the ordinary Prolog interpreter and improves upon it by detecting loops and failing finitely for such cases.

Can this be generalized to (i) “pure” Prolog with variables (datalog) and (ii) “pure” Prolog with functional symbols (full Prolog) straightforwardly?

How to turnin the solution?

Email your well-documented solution file `asg2.pl` to `t.k.prasad@wright.edu`.