CSE 341 – Programming Languages

HW5 (Replacement for Midterm) Report

Abdullah Çelik

171044002

What Has Been Done?

- Input.txt can have more than one query. Results of the queries are written in Output.txt, respectively.
- The following part is missing from the homework. If the query is predicate and it contains a variable and the match has a predicate and it contains variable, the program does not respond. Other trials are below.

Test Cases:

Fact and predicates

```
( ("prec1" ("horse"))    ( ("run" ("horse" 50))   ("arms" ("horse" 0))    ) )
( ("prec1" ("dog"))      ( ("mammal" ("dog"))     ("run" ("dog" 10))      ) )
( ("prec2" ("horse"))    ( ("run" ("horse" 50))   ("arms" ("horse" 4))    ) )
( ("legs" ("X" 2))       ( ("mammal" ("X"))       ("arms" ("X" 2))        ) )
( ("legs" ("X" 4))       ( ("mammal" ("X"))       ("arms" ("X" 0))        ) )

( ("mammal" ("horse"))           () )
( ("mammal" ("cow"))             () )
( ("mammal" ("dog"))             () )
( ("mammal" ("cat"))             () )
( ("run" ("horse" 50))           () )
( ("run" ("dog" 10))             () )
( ("run" ("mouse" 10))           () )
( ("run" ("cat" 5))              () )
( ("arms" ("horse" 0))           () )
( ("arms" ("cat" 0))             () )
( ("arms" ("chicken" 2))         () )
( ("arms" ("tiger" 4))           () )
```

Queries made and their results (Outputs were formatted manually for clarity)

```
List representation: ( () ("mammal" ("horse")) )
?- mammal(horse).
T

List representation: ( () ("run" ("dog" 10)) )
?- run(dog, 10).
Output:
T

List representation: ( () ("arms" ("chicken" 4)) )
?- arms(chicken, 4).
Output:
NIL

List representation: ( () ("mammal" ("X")) )
?- mammal(X).
Output:
((("X" . "horse")) (("X" . "cow")) (("X" . "dog")) (("X" . "cat")))

List representation: ( () ("run" ("X" 10)) )
?- run(X, 10).
Output:
((("X" . "dog")) (("X" . "mouse")))
```

List representation: (() ("arms" ("X" "Y")))
?- arms(X, Y).
Output:
((("X" . "horse") ("Y" . 0)) (("X" . "cat") ("Y" . 0)) (("X" . "chicken") ("Y" . 2)) (("X" . "tiger") ("Y" . 4)))

List representation: (() ("prec1" ("horse")))
?- prec1(horse).
Output:
T

List representation: (() ("prec2" ("horse")))
?- prec2(horse).
Output:
NIL

List representation: (() ("prec1" ("X")))
?- prec1(X).
Output:
((("X" . "horse")) (("X" . "dog")))

List representation: (() ("legs" ("horse" 4)))
?- legs(horse, 4).
Output:
T

List representation: (() ("legs" ("horse" 2)))
?- legs(horse, 2).
Output:
NIL