CS – 520 ADVANCED PROGRAMMING LANGUAGES

PROLOG LAB – 1

Ayishwarya Narasimhan
RED ID: 818473715
masc A/C : masc0877

Files used:

1) ***text.nl***
2) ***deeptext.nl***
3) ***addproblema.nl***
4) ***concat_init.nl***
5) ***prolog_hw -> script file***

> vi prolog_hw
"prolog_hw" 119 lines, 2835 characters
Script started on Wed Oct 14 20:56:37 2015

1) text.nl:

> vi text.nl
"text.nl" 6 lines, 257 characters
```
% 1.binary predicate called 'text' which will process a list and[H
% replace each number in a list by the atom 'number'.  This pred.
% will be shallow.
text([],[]).
text([X|Y],[H|T]):-number(X),append([],'number',H),text(Y,T),!.
text([X|Y],[X|T]):-text(Y,T),!.
~
~
~
```
"text.nl" 6 lines, 257 characters

> np
NU-Prolog 1.3
```
1?- consult(text).
true.
2?- text(a [a,3,[[[13,b]]],c(5),d],X).
X = [a, number, [[[13, b]]], c(5), d] ;
fail.
3?- text([a,4,b,5,c,7],X).
X = [a, number, b, number, c, number] ;
fail.
4?- text([a],X).
X = [a] ;
fail.
5?- text([12],X).
X = [number] ;
fail.
6?- text([],X).
X = []
7?- exit(0).
```

2) deeptext.nl:

```
> vi deeptext.nl
"deeptext.nl" 9 lines, 404 characters
%  2.binary predicate called 'deeptext' which will, given a list,
%  give a list in which all numbers are replaced by the text 'number',
%  including those in sublists.  Note that tree constants are not affected.

deeptext([],[]).
deeptext([X|Y],[H|T]):-isList(X),deeptext(X,H),deeptext(Y,T),!.
deeptext([X|Y],[H|T]):-number(X),append([],'number',H),deeptext(Y,T),!.
deeptext([X|Y],[X|T]):-deeptext(Y,T).
~
~
~"deeptext.nl" 9 lines, 404 characters

> np
NU-Prolog 1.3
1?- consult(deeptext).
true.
2?- deeptext([a,3,b,[[[13,c]]],d,e],X).
X = [a, number, b, [[[number, c]]], d, e]
3?- deeptext([a,4,b,6,[[[c,5]]],d(7),e],X).
X = [a, number, b, number, [[[c, number]]], d(7), e]
4?- deeptext([[[13]]],X).
X = [[[number]]]
5?- exit(0).
```

3) addproblema.nl:

```
> vi addproblema.nl
"addproblema.nl" 5 lines, 289 characters
% 3.a predicate 'addproblema' which will place 'problema' before each atom
% in a list.  The empty list is unchanged.  This is shallow, not deep.

addproblema([],[]).
addproblema([X|Xs],YsX):-atom(X),addproblema(Xs,Ys),append([problema,X],Ys,YsX),
!.
addproblema([X|Y],[X|T]):-addproblema(Y,T).
~
~"addproblema.nl" 5 lines, 289 characters

> np
NU-Prolog 1.3
1?- consult(addproblema).
true.
```

```
2?- addproblema([a,4,b,c],X).
X = [problema, a, 4, problema, b, problema, c]
3?- addproblema([3],X).
X = [3]
4?- addproblema([a,b],X).
X = [problema, a, problema, b]
5?- addproblema([],X).
X = []
6?- exit(0).
```

4) init_concat.nl:

```
> vi init_concat.nl
"init_concat.nl" 8 lines, 368 characters
%  4.predicate 'initconcat' which will accept a list of two words, and
%  output an atom that is made of the first letters of those two words.
%  This need only work for non-empty words

first([Al_],A).

initconcat(X,Y,R):-name(X,Xs),first(Xs,P),name(Y,Ys),first(Ys,Q),name(R,[P,Q]),
!.
initconcat(X,Y,R):-name(X,Xs),first(Xs,P),name(Y,Ys),first(Ys,Q),name(R,[P,Q]).
~
~
~
~
~"init_concat.nl" 8 lines, 368 characters

> np
NU-Prolog 1.3
1?- consult(init_concat).
true.
2?- initconcat(joe,student,A).
A = js
3?- initconcat(north,carolina,A).
A = nc
> ^Dexit

script done on Wed Oct 14 21:07:45 2015
```