CS 431 Programming Languages Lab

Prolog Assignment # 2

Due Date: Sunday, 2nd October 2014, Midnight

Objectives:

- To understand list, an important recursive data structure often used in Prolog programming.
- To learn how to control backtracking using cut predicate.
- To understand negation as failure (cut-fail combination).

Exercise 1 Max. Marks 4

Write a predicate '`jumble(List1, List2, JumbledList)`' which takes three lists as arguments and returns a third list as follows:

```
?-jumble([a, b, c], [1,2,3], X).

X = [a, 1, b, 2, c, 3]
```

Exercise 2 Max. Marks 8

Write a predicate '`split(Numbers, Positives, Negatives)`' which splits a list of numbers into two lists: positive ones (including zero) and negative ones. For example:

```
?-split([2, -1, 0, 7, -8], X, Y).

X = [2, 0, 7]

Y = [-1, -2]
```

Define this predicate in two different ways, one with cut and one without.

Exercises 3 Max. Marks 8

Write a predicate `nu` (for not unifiable) which takes two terms as arguments and succeeds if the two terms do not unify. For example:

```
?-nu(joe, joe)

no

?-nu(joe, foe).

yes
```

```
?-nu(joe, X).

no
```

Define this predicate in two different ways:

(a) Write it with the help of = and \+.
(b) Write it using cut-fail combination and don't use = and +\.