CS249 - ARTIFICIAL INTELLIGENCE LAB

Assignment-6: Logic

Problem:

1. Write a PROLOG function to remove duplicates from a list

Input X: Size (10), List ([44, 23, 1, 4, 5, 1, 1, 44, 55, 22, 5])
Output: [44, 23, 1, 4, 5, 55, 22], length (7)

2. Implement prime factorization in PROLOG

Input X: 2276
Output: 3(no.), factors (2, 2, 569)

3. Write rules in PROLOG to determine the best move in Tic-Tac-Toe for any given board configuration. Assume that the position of pieces is given by a predicate 'p'. For example, consider the following board state:

```
x   .   x
.   .   .
o   .   o
```

Assert these facts as the state description: p(x,1,1); p(x,1,3); p(o,3,1); p(o,1,3)

Input: ttt_move(x, R, C). %
Output: R = 1, C = 2

4. SEND + MORE = MONEY is a classical "cryptarithmetic" puzzle: the variables S, E, N, D, M, O, R, Y represent digits between 0 and 9, and the task is finding values for them such that the following arithmetic operation is correct:

```
  S E N D
+ M O R E
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M O N E Y
```

Moreover, all variables must take unique values, and all the numbers must be well-formed (which implies that M > 0 and S > 0).