

LAB 2

Given the following knowledge base:

There are 5 houses, each of a different color (red, white, blue, yellow, green).

In each house, there is only one person, of a different nationality (British, Swedish, Danish, Norwegian, German).

Each person of each house drinks a certain drink (milk, beer, tea, water, coffee), smokes a certain brand of cigarettes (PallMall, Winfield, Marlboro, Dunhill, Rothmans) and owns a certain animal (bird, dog, horse, cat, fish).

Each of the 5 people drinks a different drink, smokes a different brand of cigarettes and owns a different kind of animal.

The British man lives in the red house.

The Norwegian lives next to the blue house.

The green house is to the (immediate) left of the white house.

The owner of the green house drinks coffee.

The owner of the house in the middle drinks milk.

The owner of the yellow house smokes Dunhill.

The Norwegian lives in the first house.

The Swedish man has a dog.

The person who smokes Pall Mall has a bird.

The Marlboro smoker lives next to the one with a cat.

The Winfield smoker drinks beer.

The person who owns a horse lives next to the one who smokes Dunhill.

The German smokes Rothmans.

The Marlboro smoker has a neighbor who drinks water.

write a Prolog program that answers the question “Who has the fish?”.

Suggestions for implementation:

```
einstein(Sol) :- Sol=[[1,N1,C1,P1,D1,S1],  
                    [2,N2,C2,P2,D2,S2],  
                    [3,N3,C3,P3,D3,S3],  
                    [4,N4,C4,P4,D4,S4],  
                    [5,N5,C5,P5,D5,S5]], ..... implement here all the rules making use of the predicate  
member
```

OR

```
einstein(Sol) :- Sol=[[N1,C1,P1,D1,S1],  
                    [N2,C2,P2,D2,S2],  
                    [N3,C3,P3,D3,S3],  
                    [N4,C4,P4,D4,S4],  
                    [N5,C5,P5,D5,S5]], ..... implement here all the rules making use of the predicate member  
and define additional predicates to check different positions of elements in a list (e.g. next, left, first).
```