LAB-1 | Assignment

Aim: Study of Facts, Objects, Predicates and Variables.

1. Write a prolog program for the given facts.

Code:

```
domains
        name,property = symbol
predicates
        colour(name,property).
        shape(name,property).
        size(name,property).
clauses
        colour(b1,red).
        colour(b2,blue).
        colour(b3,yellow).
        shape(b1,square).
        shape(b2,circle).
        shape(b3,square).
        size(b1,small).
        size(b2,small).
        size(b3,large).
```

What will be the outcome of each of the following queries?

1) What is the shape of b3?
   I/P : Goal: shape(b3,Shape)
   O/P : Shape = square
   1 Solution
2) Which component is having a large size and yellow colour?
   I/P : Goal: size(Component,large) and colour(Component,yellow)
   O/P : Component = b3
   1 Solution

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2. Find the answer to the following questions from given facts.

Code:

```
domains
predicates
        likes(symbol,symbol)
clauses
        likes(mary,food).
        likes(mary,wine).
        likes(john,wine).
        likes(john,mary).
```

I/P : Goal: likes(mary,food)
O/P : Yes

I/P : Goal: likes(john,wine)
O/P : Yes

I/P : Goal: likes(john,food)
O/P : No

1) John likes anything that Mary likes.
   I/P : Goal: likes(john,Like) and likes(mary,Like)
   O/P : Like=wine
   1 Solution

2) John likes anyone who likes wine.
   I/P : Goal: likes(john,X) and likes(X,wine)
   O/P : X=mary
   1 Solution

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3. Find the answer to the following questions from given facts.

Code:

```
domains
predicates
        has(symbol,symbol)
        fruit(symbol)
clauses
        has(jack,apples).
        has(ann,plums).
        has(dan,monkey).
        fruit(apples).
        fruit(plums).
```

1) What jack has?
   I/P : Goal: has(jack,X)
   O/P : X=apples
   1 Solution

2) Does Jack have something?
   I/P : Goal: has(jack,_)
   O/P : Yes

3) Who has apples and Who has plums?
   I/P : Goal: has(X,apples) or has(X,plums)
   O/P : X=jack
   X=ann
   2 Solutions

4) Does someone have apples and plums?
   I/P : Goal: has(X,apples) and has(X,plums)
   O/P : No

5) Has Dan fruits?
   I/P : has(dan,X),fruit(X)
   O/P : No Solution
