**PREDICATE LOGIC IN PROLOG**

**LAB WORK**

**Structure Of Prolog:**

* Domains
* Predicate
* Clauses
* Goal
* Rules

**1.PROGRAM**

Predicates nondeterm ph(Symbol,Symbol)

clauses

ph("albert","665-777").

ph("Betty","555-333").

ph("carol","909-1010").

Goal ph("albert","665-777").

**OUTPUT:**

Yes

**2. PROGRAM**

Predicates nondeterm likes(Symbol,Symbol)

clauses

likes("ellen","tennis").

likes("john","football").

likes("tom","baseball").

likes("eric","Swimming").

likes("mark","tennis").

likes("bill",Activity):- likes("tom",Activity).

Goal likes("bill","baseball").

**OUTPUT:**

Yes

**TASK:**

**Object 01:** Define the facts ---> objects and their shapes.

Door---->rectangle

Clock ---->circle

Frame ---->octagonal

Cookiebon ---->oval

Window ---->square

Prove:

1. If door is rectangular then window is not
2. Make a query for the above program and print shape of any object.

**Source Code(01):**

Predicates nondeterm shapeis(Symbol,Symbol)

clauses

shapeis("Door","rectangle").

shapeis("Clock","circle").

shapeis("Frame","Octagonal").

shapeis("Cookiebon","Oval").

shapeis("window","Square").

shapeis("window","square"):- shapeis("Door","rectangle").

Goal shapeis("window","rectangle").

**Output:**

No

**Source Code(02):**

Predicates nondeterm shapeis(Symbol,Symbol)

clauses

shapeis("Door","rectangle").

shapeis("Clock","circle").

shapeis("Frame","Octagonal").

shapeis("Cookiebon","Oval").

shapeis("window","Square").

shapeis("window",Shape):- shapeis("Door",Shape).

Goal shapeis("window",Shape).

**Output:**

Shape=Square

Shape=rectangle

2 Solutions

**Object 02:**Write a program that contains employee information (Name,Fathername,CNIC,Salary,Grade,Type{permenant,Adhoc},Designation,Gender)

1. Print the details of employees who are adhoc.
2. Print the details of employees whose grade is 21.
3. Print the name & designation of female employees only.
4. Print the name & designation of male employees only.

**Source Code(1):**

Predicates nondeterm information(Symbol,Symbol,Symbol,Integer,Symbol,Symbol,Symbol,Symbol)

clauses

information("hina","haq","32201-212312-5",200,"5th","permenant","Sr.Engineer","Female").

information("Anju","Ali","42221-312412-3",100,"7th","adhoc","Jr.Assistant","male").

information("Hina","Ali","42202-32313-2",300,"6th","permenant","Designer","male").

information("Anila","Ali","42201-312312-1",400,"2th","adhoc","Accountant","male").

Goal information(Name,Fathername,CNIC,Salary,Grade,"adhoc",Designation,Gender).

**Output:**

Name=Anju, Fathername=Ali, CNIC=42221-312412-3, Salary=100, Grade=7th, Designation=Jr.Assistant, Gender=male

Name=Anila, Fathername=Ali, CNIC=42201-312312-1, Salary=400, Grade=2th, Designation=Accountant, Gender=male

2 Solutions

**Source Code(2):**

Predicates nondeterm information(Symbol,Symbol,Symbol,Integer,Symbol,Symbol,Symbol,Symbol)

clauses

information("Asma","safi","32201-212312-5",200,"5th","permenant","Sr.Engineer","Female").

information("Anju","Ali","42221-312412-3",100,"7th","adhoc","Jr.Assistant","male").

information("Hina","Ali","42202-32313-2",300,"6th","permenant","Designer","male").

information("Anila","Ali","42201-312312-1",400,"21th","adhoc","Accountant","male").

Goal information(Name,Fathername,CNIC,Salary,"21th",Type,Designation,Gender).

**Output:**

Name=Anila, Fathername=Ali, CNIC=42201-312312-1, Salary=400, Type=adhoc, Designation=Accountant, Gender=male

1 Solution

**Source Code(3):**

Predicates nondeterm information(Symbol,Symbol,Symbol,Integer,Symbol,Symbol,Symbol,Symbol)

clauses

information("Huma","sadi","32201-212312-5",200,"5th","permenant","Sr.Engineer","Female").

information("sheraz","Ali","42221-312412-3",100,"7th","adhoc","Jr.Assistant","male").

information("Subhan","Ali","42202-32313-2",300,"6th","permenant","Designer","male").

information("Ali","Ali","42201-312312-1",400,"21th","adhoc","Accountant","male").

Goal information(Name,\_,\_,\_,\_,\_,Designation,"Female").

**Output:**

Name=Huma, Designation=Sr.Engineer

1 Solution

**Source Code(4):**

Predicates nondeterm information(Symbol,Symbol,Symbol,Integer,Symbol,Symbol,Symbol,Symbol)

clauses

information("Huma","safi","32201-212312-5",200,"5th","permenant","Sr.Engineer","Female").

information("sheraz","Ali","42221-312412-3",100,"7th","adhoc","Jr.Assistant","male").

information("Subhan","Ali","42202-32313-2",300,"6th","permenant","Designer","male").

information("Ali","Ali","42201-312312-1",400,"21th","adhoc","Accountant","male").

Goal information(Name,\_,\_,\_,\_,\_,Designation,"male").

**Source Code:**

Name=sheraz, Designation=Jr.Assistant

Name=Subhan, Designation=Designer

Name=Ali, Designation=Accountant

3 Solutions