**20.Write a Prolog Program for PLANETS DB**

**Program:**

% define some facts about planets and their properties planet(mercury, rocky, small, hot, closest\_to\_sun).

planet(venus, rocky, small, hot, 2nd\_closest\_to\_sun).

planet(earth, rocky, medium, temperate, 3rd\_closest\_to\_sun). planet(mars, rocky, small, cold, 4th\_closest\_to\_sun).

planet(jupiter, gas\_giant, large, cold, 5th\_closest\_to\_sun).

planet(saturn, gas\_giant, large, cold, 6th\_closest\_to\_sun). planet(uranus, ice\_giant, large, cold, 7th\_closest\_to\_sun). planet(neptune, ice\_giant, large, cold, 8th\_closest\_to\_sun).

% define a predicate to look up a planet's properties by name planet\_properties(Name, Type, Size, Temperature, Position) :- planet(Name, Type, Size, Temperature, Position).

% example query: find the properties of earth

?- planet\_properties(earth, Type, Size, Temperature, Position).

Type = rocky,

Size = medium,

Temperature = temperate,

Position = 3rd\_closest\_to\_sun.% example query: find the planets that are gas giants

?- planet\_properties(Name, gas\_giant, \_, \_, \_).

Name = jupiter ;

Name = saturn.

% example query: find the planets that are small and hot

?- planet\_properties(Name, \_, small, hot, \_).

**Output:**

Name = mercury ;

Name = venus ;

Name = mars