1. 题目：这是一个选狗专家系统，有 8 种明星狗。顾客使用我们这个选狗系统，只需根据窗口提供的内容回答“yes”或“no”，系统将会帮你选择你需要的狗。

2. 该专家系统设计狗的特性是：

（1）短毛　　（5）尾巴低垂

（2）长毛　　（6）长耳朵

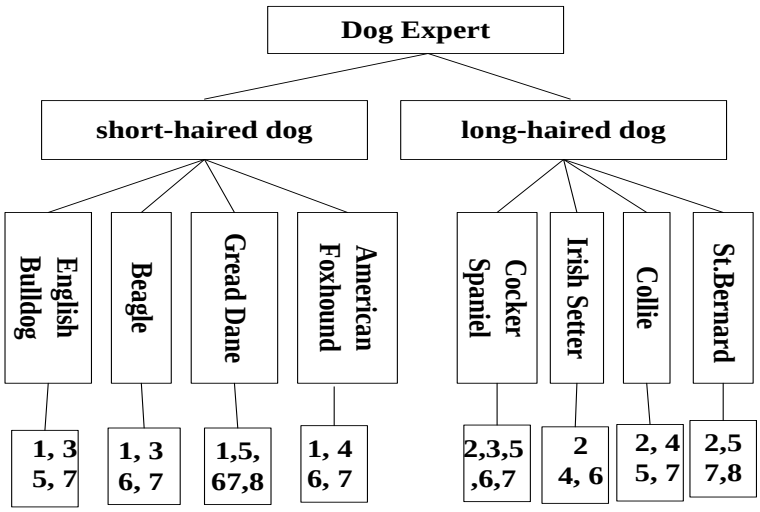
（3）高度不到 22 英寸　　（7）性情好

（4）高度不到 30 英寸　　（8）重量超过 100 磅

每个特性应用到每种狗都有一个肯定的或否定的回答，即每个品种的狗具有或不具有某一特性。各品种狗的特性如下：

品　　种	特　　性
English Bulldog	1，3，5，7
Beagle	1，3，6，7
Great Dane	1，5，6，7，8
American Foxhound	1，4，6，7
Corker Spaniel	2，3，5，6，7
Irish Setter	2，4，6
Collie	2，4，5，7
St. Bernard	2，5，7，8

3.该专家系统设计狗的分类是：首先按照狗毛的长度分类，分为长毛狗和短毛狗；然后再按照狗名给出狗的特性，如下图所示；最后根据狗名及特性编写规则。



4. 程序

```
/*    wl0. pro    */
/* Program: Dog Expert */
/* Purpose: To Show the working of an expert */
/* It is a production rule _based system */
/* Remark: This is a dog classification expert system */
/* It uses a set of production rules for the*/
/*    purpose of inferring.          */
domains
database
```

```
    xpositive(symbol,symbol)
    xnegative(symbol,symbol)
predicates
    do_expert_job
    do_consulting
ask (symbol, symbol)
dog_is (symbol)
it_is (symbol)
positive(symbol,symbol)
negative (symbol,symbol)
remember (symbol,symbol,symbol)
clear_facts
goal
    do_expert_job.
clauses
/* USER INTERFACE SYSTEM */
do_expert_job:-
   makewindow(1,7,7,"AN EXPERT SYSTEMS", 1, 16,15,58),
   nl,write(" ****************************************"),
   nl,write("  WELCOME TO AGOG EXPERT SYSTEM      "),
   nl,write(" This is a dog identification system "),
   nl,write(" Please respond by typing in         "),
   nl, write("  'yes'  or  'no'.     Thank you      "),
   nl, write("                                      "),
   nl, write ("****************************************"),
   nl, nl,
    do_consulting,
    write("Press space bar."),nl,
    readchar(_),
    clearwindow,
    exit.
do_consulting:-
    dog_is(X),!,
    nl,write("You dog may be a(n) ",X,"."),nl,
    clear_facts.
do_consulting:-
    nl,write("Sorry, unabie to determine the dog."),nl,
    clear_facts.
⑦ask(X,Y):-
    write("Question:-",X," it ",Y,"?"),
    readln(Reply),
    remember(X,Y,Reply).

/* INFERENCE BIGING */
```

```
④positive(X,Y):- xpositive(X,Y), !.
⑤positive(X,Y):- not(negative(X,Y)),!,ask(X,Y).
⑥negative(X,Y):- xnegative(X,Y), !.
remember(X,Y,yes):- asserta(xpositive(X,Y)).
⑧remember(X,Y,no):- asserta(xnegative(X,Y)),fail.
clear_facts:- retract(xpositive(_,_)),fail.
clear_facts:- retract(xnegative(_,_)),fail.
clear_facts:-!.
 /*  Production rules  */
①     dog_is("English Bulldog"):-
     ②  it_is("short-haired dog"),
       positive(has,"height under 22 inches"),
       positive(has,"low-set tail"),
       positive(has,"good natured personality"),!.
  dog_is("Beagle"):-
           it_is("short-haired dog"),  。。。
  dog_is("Gread Dane"):-      。。。
  dog_is("American Foxhound"):-       。。。
  dog_is("Corker Spaniel"):-
       it_is("long-haired dog"),
       positive(has," height under 22 inches"),
       positive(has," low-set tail"),
       positive(has," longer ears"),
       positive(has," good natured personality"),!.
  dog_is("Irish Setter"):-    . . .
  dog_is("Collie"):-   . . .
  dog_is(" St.Bernard"):-   . . .
 ③it_is("short-haired dog"):-
        positive(has," short-haired"),!.
 it_is("long-haired dog"):-
        positive(has," long -haired"),!.
/*   end    */
```

5.运行结果：（抓图）