Sample problem statement and solution

➢ **PROBLEM STATEMENT:**

   To check if a flower is bisexual or unisexual.
   (Bisexual flowers are both male and female)
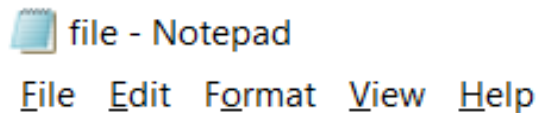   **(Unisexual flowers are either male or female)**

Screenshot:

file - Notepad

File   Edit   Format   View   Help

PROBLEM STATEMENT :
To check if a flower is bisexual or unisexual.
(Bisexual flowers are both male and female)
(Unisexual flowers are either male or female)

➢ FACTS [in English statements and FOL form]
And RULES [in English statements and FOL form]

Screenshot:

flower - Notepad

File Edit Format View Help

%FLOWER.PL

%FACTS:

%facts in FOL form   %facts in english sentence form

uni(papaya).   %Papaya is a unisexual flower.
uni(whitemulberry).   %White mulberry is a unisexual flower.
uni(watermelon).   %Watermelon is a unisexual flower.
bi(tulip).   %Tulip is a bisexual flower.
bi(sunflower).   %Sunflower is a bisexual flower.
bi(lily).   %Lily is a bisexual flower.

%RULES:

%rules in FOL form   %rules in english sentence form
male(X) :- bi(X).   %If X is a bisexual flower, then X is male.
female(X) :- bi(X).   %If X is a bisexual flower, then X is female.

%As bisexual flowers, are both male and female.

%For unisexual flowers , it may be male or female
%so we cannot conclude anything, without more facts or rules, for unisexual flowers.

➢ **QUERIES [in English statements]**

Screenshot:

file - Notepad

File Edit Format View Help

PROBLEM STATEMENT :
To check if a flower is bisexual or unisexual.
(Bisexual flowers are both male and female)
(Unisexual flowers are either male or female)

QUERIES [for flower.pl]:

%english statements:

1] Is papaya a unisexual flower?
2] Is watermelon a bisexual flower?
3] Is tulip a bisexual flower?
4] Is lily male?
5] Is lily female?
6] Is whitemulberry male?
7] Is whitemulberry female?
8] What all flowers are unisexual?
9] What all flowers are bisexual?

➢ **QUERIES [in FOL form]**
   And OUTPUT of the queries [in Prolog console]

Screenshot:

```
| ?- uni(papaya).

yes
| ?- bi(watermelon).

no
| ?- bi(tulip).

yes
| ?- male(lily).

yes
| ?- female(lily).

yes
| ?- male(whitemulberry).

no
| ?- female(whitemulberry).

no
| ?- uni(FLOWER).

FLOWER = papaya ? ;

FLOWER = whitemulberry ? ;

FLOWER = watermelon

(16 ms) yes
| ?- bi(FLOWER).

FLOWER = tulip ? ;

FLOWER = sunflower ? ;

FLOWER = lily

yes
| ?- write('thank you').
thank you

yes
| ?-
```

file - Notepad   —   ☐   ✕

File   Edit   Format   View   Help

QUERIES [for flower.pl]:

%english statements:

1] Is papaya a unisexual flower?
2] Is watermelon a bisexual flower?
3] Is tulip a bisexual flower?
4] Is lily male?
5] Is lily female?
6] Is whitemulberry male?
7] Is whitemulberry female?
8] What all flowers are unisexual?
9] What all flowers are bisexual?