爱因斯坦的谜语

参考 ： http://www.itpub.net/thread-1253844-1-1.html
http://www.cnblogs.com/skyiv/articles/1264119.html

爱因斯坦在20世纪初出的这个谜语。他说世界上有98%的人答不出来。

1、在一条街上，有5座房子，喷了5种颜色。

2、每个房里住着不同国籍的人

3、每个人喝不同的饮料，抽不同品牌的香烟，养不同的宠物

问题是：谁养鱼？

提示：

1、英国人住红色房子

2、瑞典人养狗

3、丹麦人喝茶

4、绿色房子在白色房子左面

5、绿色房子主人喝咖啡

6、抽Pall Mall 香烟的人养鸟

7、黄色房子主人抽Dunhill 香烟

8、住在中间房子的人喝牛奶

9、 挪威人住第一间房

10、抽Blends香烟的人住在养猫的人隔壁

11、养马的人住抽Dunhill 香烟的人隔壁

12、抽Blue Master的人喝啤酒

13、德国人抽Prince香烟

14、挪威人住蓝色房子隔壁

15、抽Blends香烟的人有一个喝水的邻居

答案 ： 德国人养的鱼

参考jackwood的解法，然后用这个编号的方法做，结果出了问题。。不知道哪里写的有问题

```
SELECT distinct nationality,color,beverages,cigarettes,pets FROM(
    with
    class_number as(
```

```
    SELECT 1 as num FROM dual
    union all
    SELECT 2 FROM dual
    union all
    SELECT 3 FROM dual
    union all
    SELECT 4 FROM dual
    union all
    SELECT 5 FROM dual
),
class_nationality as (
    SELECT '英国人' as nationality FROM dual
    union all
    SELECT '瑞典人' FROM dual
    union all
    SELECT '丹麦人' FROM dual
    union all
    SELECT '挪威人' FROM dual
    union all
    SELECT '德国人' FROM dual
),
class_house as(
    SELECT '红色' as color FROM dual
    union all
    SELECT '白色' FROM dual
    union all
    SELECT '绿色' FROM dual
    union all
    SELECT '黄色' FROM dual
    union all
    SELECT '蓝色' FROM dual
),
class_beverages as(
    SELECT '茶' as beverages FROM dual
    union all
    SELECT '咖啡' FROM dual
    union all
    SELECT '牛奶' FROM dual
    union all
    SELECT '啤酒' FROM dual
    union all
    SELECT '水' FROM dual
),
class_cigarettes as(
    SELECT 'pall mall' as cigarettes FROM dual
    union all
    SELECT 'dunhill' FROM dual
    union all
    SELECT 'blends' FROM dual
    union all
    SELECT 'blue master' FROM dual
    union all
    SELECT 'prince' FROM dual
),
class_pets as(
    SELECT '狗' as pets FROM dual
    union all
    SELECT '鸟' FROM dual
```

```
        union all
        SELECT '猫' FROM dual
        union all
        SELECT '马' FROM dual
        union all
        SELECT '鱼' FROM dual
    )
    SELECT *
    FROM class_number,
        class_nationality,
        class_house,
        class_beverages,
        class_cigarettes,
        class_pets
    WHERE
        --英国人住红色房子
        color = decode(nationality,'英国人','红色',color)
        AND nationality = decode(color,'红色','英国人',nationality)
        --瑞典人养狗
        AND pets = decode(nationality,'瑞典人','狗',pets)
        AND nationality = decode(pets,'狗','瑞典人',nationality)
        --丹麦人喝茶
        AND beverages = decode(nationality,'丹麦人','茶',beverages)
        AND nationality = decode(beverages,'茶','丹麦人',nationality)
        --绿色房子在白色房子左面
        AND decode(color,'绿色',num,10) = decode(color,'白色',num,11) - 1
        --绿色房子主人喝咖啡
        AND beverages = decode(color,'绿色','咖啡',beverages)
        AND color = decode(beverages,'咖啡','绿色',color)
        --抽Pall  Mall  香烟的人养鸟
        AND pets = decode(cigarettes,'pall mall','鸟',pets)
        AND cigarettes = decode(pets,'鸟','pall mall',cigarettes)
        --黄色房子主人抽Dunhill  香烟
        AND cigarettes = decode(color,'黄色','dunhill',cigarettes)
        AND color = decode(cigarettes,'dunhill','黄色',color)
        --住在中间房子的人喝牛奶
        AND beverages = decode(num,3,'牛奶',beverages)
        AND num = decode(beverages,'牛奶',3,num)
        --挪威人住第一间房
        AND num = decode(nationality,'挪威人',1,num)
        AND nationality = decode(num,1,'挪威人',nationality)
        --抽Blends香烟的人住在养猫的人隔壁
        AND decode(cigarettes,'blends',num,10) in (decode(pets,'猫',num,11) - 1, decode(pets,'猫',num,9) + 1)
        --养马的人住抽Dunhill  香烟的人隔壁
        AND decode(pets,'马',num,10) in (decode(cigarettes,'dunhill',num,11)-1,decode(cigarettes,'dunhill',num,9) + 1)
        --抽Blue  Master的人喝啤酒
        AND beverages = decode(cigarettes,'blue master','啤酒',beverages)
        AND cigarettes = decode(beverages,'啤酒','blue master',cigarettes)
        --德国人抽Prince香烟
        AND cigarettes = decode(nationality,'德国人','prince',cigarettes)
        AND nationality = decode(cigarettes,'prince','德国人',nationality)
        --挪威人住蓝色房子隔壁
        AND decode(nationality,'挪威人',num,10) in (decode(color,'蓝',num,11) - 1,decode(color,'蓝',num,9) + 1)
        --抽Blends香烟的人有一个喝水的邻居
        AND decode(cigarettes,'blends',num,10) in (decode(beverages,'水',num,11) - 1,decode(beverages,'水',num,9) + 1)
)
```

提示:
1、英国人住红色房子
2、瑞典人养狗
3、丹麦人喝茶
4、绿色房子在白色房子左面
5、绿色房子主人喝咖啡
6、抽Pall Mall 香烟的人养鸟
7、黄色房子主人抽Dunhill 香烟
8、住在中间房子的人喝牛奶
9、 挪威人住第一间房
10、抽Blends香烟的人住在养猫的人隔壁
11、养马的人住抽Dunhill 香烟的人隔壁
12、抽Blue Master的人喝啤酒
13、德国人抽Prince香烟
14、挪威人住蓝色房子隔壁
15、抽Blends香烟的人有一个喝水的邻居

[php]
```
SQL> with a as (
  2  select '英国人' as p from dual union all
  3  select '瑞典人' from dual union all
  4  select '丹麦人' from dual union all
  5  select '挪威人' from dual union all
  6  select '德国人' from dual
  7  )
  8  , b as (
  9  select '红色房子' as h from dual union all
 10  select '绿色房子' from dual union all
 11  select '白色房子' from dual union all
 12  select '黄色房子' from dual union all
 13  select '蓝色房子' from dual
 14  )
 15  , c as (
 16  select 'Pall Mall' as c from dual union all
 17  select 'Dunhill' from dual union all
 18  select 'Blue Master' from dual union all
 19  select 'Prince' from dual union all
 20  select 'Blends' from dual
 21  )
 22  , d as (
 23  select '水' as d from dual union all
 24  select '牛奶' from dual union all
 25  select '啤酒' from dual union all
 26  select '咖啡' from dual union all
 27  select '茶' from dual
 28  )
 29  , e as (
 30  select '狗' as a from dual union all
 31  select '鸟' from dual union all
 32  select '马' from dual union all
 33  select '猫' from dual union all
 34  select '鱼' from dual
 35  )
 36  , t as (
 37  select *
 38    from a,b,c,d,e
 39  where -- 1、英国人住红色房子
 40        h=decode(p,'英国人','红色房子',h)
```

```
    and p=decode(h,'红色房子','英国人',p)
    -- 2、瑞典人养狗
    and a=decode(p,'瑞典人','狗',a)
    and p=decode(a,'狗','瑞典人',p)
    -- 3、丹麦人喝茶
    and d=decode(p,'丹麦人','茶',d)
    and p=decode(d,'茶','丹麦人',p)
    -- 5、绿色房子主人喝咖啡
    and d=decode(h,'绿色房子','咖啡',d)
    and h=decode(d,'咖啡','绿色房子',h)
    -- 6、抽Pall Mall 香烟的人养鸟
    and a=decode(c,'Pall Mall','鸟',a)
    and c=decode(a,'鸟','Pall Mall',c)
    -- 7、黄色房子主人抽Dunhill 香烟
    and c=decode(h,'黄色房子','Dunhill',c)
    and h=decode(c,'Dunhill','黄色房子',h)
    -- 12、抽Blue Master的人喝啤酒
    and d=decode(c,'Blue Master','啤酒',d)
    and c=decode(d,'啤酒','Blue Master',c)
    -- 13、德国人抽Prince香烟
    and c=decode(p,'德国人','Prince',c)
    and p=decode(c,'Prince','德国人',p)
)
select rpad(a.p, 10)||rpad(a.h, 10)||rpad(a.c, 12)||rpad(a.d, 5)||rpad(a.a, 5)||chr(10)||
       rpad(b.p, 10)||rpad(b.h, 10)||rpad(b.c, 12)||rpad(b.d, 5)||rpad(b.a, 5)||chr(10)||
       rpad(c.p, 10)||rpad(c.h, 10)||rpad(c.c, 12)||rpad(c.d, 5)||rpad(c.a, 5)||chr(10)||
       rpad(d.p, 10)||rpad(d.h, 10)||rpad(d.c, 12)||rpad(d.d, 5)||rpad(d.a, 5)||chr(10)||
       rpad(e.p, 10)||rpad(e.h, 10)||rpad(e.c, 12)||rpad(e.d, 5)||rpad(e.a, 5) as val
  from t a, t b, t c, t d, t e
where a.p<>b.p and a.p<>c.p and a.p<>d.p and a.p<>e.p
    and b.p<>c.p and b.p<>d.p and b.p<>e.p
    and c.p<>d.p and c.p<>e.p
    and d.p<>e.p
    and a.h<>b.h and a.h<>c.h and a.h<>d.h and a.h<>e.h
    and b.h<>c.h and b.h<>d.h and b.h<>e.h
    and c.h<>d.h and c.h<>e.h
    and d.h<>e.h
    and a.c<>b.c and a.c<>c.c and a.c<>d.c and a.c<>e.c
    and b.c<>c.c and b.c<>d.c and b.c<>e.c
    and c.c<>d.c and c.c<>e.c
    and d.c<>e.c
    and a.d<>b.d and a.d<>c.d and a.d<>d.d and a.d<>e.d
    and b.d<>c.d and b.d<>d.d and b.d<>e.d
    and c.d<>d.d and c.d<>e.d
    and d.d<>e.d
    and a.a<>b.a and a.a<>c.a and a.a<>d.a and a.a<>e.a
    and b.a<>c.a and b.a<>d.a and b.a<>e.a
    and c.a<>d.a and c.a<>e.a
    and d.a<>e.a
    -- 4、绿色房子在白色房子左面
    and ('绿色房子','白色房子') in ((a.h, b.h), (b.h, c.h),(c.h, d.h),(d.h, e.h))
    -- 8、住在中间房子的人喝牛奶
    and c.d='牛奶'
    -- 9、 挪威人住第一间房
    and a.p='挪威人'
    -- 10、抽Blends香烟的人住在养猫的人隔壁
    and ('Blends', '猫') in ((a.c,b.a),(b.c,c.a),(c.c,d.a),(d.c,e.a),(e.c,d.a),(d.c,c.a),(c.c,b.a),(b.c,a.a))
    -- 11、养马的人住抽Dunhill 香烟的人隔壁
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```
99     and ('Dunhill','马') in ((a.c,b.a),(b.c,c.a),(c.c,d.a),(d.c,e.a),(e.c,d.a),(d.c,c.a),(c.c,b.a),(b.c,a.a))
100     -- 14、挪威人住蓝色房子隔壁
101     and ('挪威人','蓝色房子') in ((a.p,b.h),(b.p,c.h),(c.p,d.h),(d.p,e.h),(e.p,d.h),(d.p,c.h),(c.p,b.h),(b.p,a.h))
102     -- 15、抽Blends香烟的人有一个喝水的邻居
103     and ('Blends','水') in ((a.c,b.d),(b.c,c.d),(c.c,d.d),(d.c,e.d),(e.c,d.d),(d.c,c.d),(c.c,b.d),(b.c,a.d))
104  /

VAL
--------------------------------------------------------------------------------
挪威人    黄色房子  Dunhill     水   猫
丹麦人    蓝色房子  Blends      茶   马
英国人    红色房子  Pall Mall   牛奶 鸟
德国人    绿色房子  Prince      咖啡 鱼
瑞典人    白色房子  Blue Master 啤酒 狗

SQL>
```

```
with a as (
 select '英国人' as p from dual union all
 select '瑞典人' from dual union all
 select '丹麦人' from dual union all
 select '挪威人' from dual union all
 select '德国人' from dual
 )
 , b as (
 select '红色房子' as h from dual union all
select '绿色房子' from dual union all
select '白色房子' from dual union all
select '黄色房子' from dual union all
select '蓝色房子' from dual
)
, c as (
select 'Pall Mall' as c from dual union all
select 'Dunhill' from dual union all
select 'Blue Master' from dual union all
select 'Prince' from dual union all
select 'Blends' from dual
)
, d as (
select '水' as d from dual union all
select '牛奶' from dual union all
select '啤酒' from dual union all
select '咖啡' from dual union all
select '茶' from dual
```

```
)
, e as (
select '狗' as a from dual union all
select '鸟' from dual union all
select '马' from dual union all
select '猫' from dual union all
select '鱼' from dual
)
, t as (
select *
  from a,b,c,d,e
where -- 1、英国人住红色房子
       h=decode(p,'英国人','红色房子',h)
   and p=decode(h,'红色房子','英国人',p)
   -- 2、瑞典人养狗
   and a=decode(p,'瑞典人','狗',a)
   and p=decode(a,'狗','瑞典人',p)
   -- 3、丹麦人喝茶
   and d=decode(p,'丹麦人','茶',d)
   and p=decode(d,'茶','丹麦人',p)
   -- 5、绿色房子主人喝咖啡
   and d=decode(h,'绿色房子','咖啡',d)
   and h=decode(d,'咖啡','绿色房子',h)
   -- 6、抽Pall Mall 香烟的人养鸟
   and a=decode(c,'Pall Mall','鸟',a)
   and c=decode(a,'鸟','Pall Mall',c)
   -- 7、黄色房子主人抽Dunhill 香烟
   and c=decode(h,'黄色房子','Dunhill',c)
   and h=decode(c,'Dunhill','黄色房子',h)
   -- 12、抽Blue Master的人喝啤酒
   and d=decode(c,'Blue Master','啤酒',d)
   and c=decode(d,'啤酒','Blue Master',c)
   -- 13、德国人抽Prince香烟
   and c=decode(p,'德国人','Prince',c)
   and p=decode(c,'Prince','德国人',p)
)
select rpad(a.p, 10)||rpad(a.h, 10)||rpad(a.c, 12)||rpad(a.d, 5)||rpad(a.a, 5)||chr(10)||
       rpad(b.p, 10)||rpad(b.h, 10)||rpad(b.c, 12)||rpad(b.d, 5)||rpad(b.a, 5)||chr(10)||
       rpad(c.p, 10)||rpad(c.h, 10)||rpad(c.c, 12)||rpad(c.d, 5)||rpad(c.a, 5)||chr(10)||
       rpad(d.p, 10)||rpad(d.h, 10)||rpad(d.c, 12)||rpad(d.d, 5)||rpad(d.a, 5)||chr(10)||
       rpad(e.p, 10)||rpad(e.h, 10)||rpad(e.c, 12)||rpad(e.d, 5)||rpad(e.a, 5) as val
  from t a, t b, t c, t d, t e
where a.p<>b.p and a.p<>c.p and a.p<>d.p and a.p<>e.p
and b.p<>c.p and b.p<>d.p and b.p<>e.p
and c.p<>d.p and c.p<>e.p
and d.p<>e.p
and a.h<>b.h and a.h<>c.h and a.h<>d.h and a.h<>e.h
and b.h<>c.h and b.h<>d.h and b.h<>e.h
and c.h<>d.h and c.h<>e.h
and d.h<>e.h
and a.c<>b.c and a.c<>c.c and a.c<>d.c and a.c<>e.c
and b.c<>c.c and b.c<>d.c and b.c<>e.c
and c.c<>d.c and c.c<>e.c
and d.c<>e.c
and a.d<>b.d and a.d<>c.d and a.d<>d.d and a.d<>e.d
and b.d<>c.d and b.d<>d.d and b.d<>e.d
and c.d<>d.d and c.d<>e.d
and d.d<>e.d
```

```
and a.a<>b.a and a.a<>c.a and a.a<>d.a and a.a<>e.a
and b.a<>c.a and b.a<>d.a and b.a<>e.a
and c.a<>d.a and c.a<>e.a
and d.a<>e.a
-- 4、绿色房子在白色房子左面
and ('绿色房子','白色房子') in ((a.h, b.h), (b.h, c.h),(c.h, d.h),(d.h, e.h))
-- 8、住在中间房子的人喝牛奶
and c.d='牛奶'
-- 9、 挪威人住第一间房
and a.p='挪威人'
-- 10、抽Blends香烟的人住在养猫的人隔壁
and ('Blends', '猫') in ((a.c,b.a),(b.c,c.a),(c.c,d.a),(d.c,e.a),(e.c,d.a),(d.c,c.a),(c.c,b.a),(b.c,a.a))
-- 11、养马的人住抽Dunhill 香烟的人隔壁
and ('Dunhill','马') in ((a.c,b.a),(b.c,c.a),(c.c,d.a),(d.c,e.a),(e.c,d.a),(d.c,c.a),(c.c,b.a),(b.c,a.a))
-- 14、挪威人住蓝色房子隔壁
and ('挪威人','蓝色房子') in ((a.p,b.h),(b.p,c.h),(c.p,d.h),(d.p,e.h),(e.p,d.h),(d.p,c.h),(c.p,b.h),(b.p,a.h))
-- 15、抽Blends香烟的人有一个喝水的邻居
and ('Blends','水') in ((a.c,b.d),(b.c,c.d),(c.c,d.d),(d.c,e.d),(e.c,d.d),(d.c,c.d),(c.c,b.d),(b.c,a.d))
```