

Meeting:1

Date:2021-08-20

Time:12:15:00

Venue:gg

Attendance

Present:

LIM G WEI2,small admin12

LIM G WEI,big one

Absent :

1.title 1

1.1.agenda 1

1.2.agenda 3

2.title 2

2.1.agenda 2

3.title3

Question 1 – 15 marks

A production system maintains a set of rules about the characteristics of fruits as follows:

- | | | |
|----------|------|------------------------------------------------------------------------|
| Rule 1: | IF | Shape = long AND
Colour = green OR yellow |
| | THEN | Fruit = banana |
| Rule 2: | IF | Shape = round OR oblong AND
Diameter > 4 inches |
| | THEN | Fruitclass = vine |
| Rule 3: | IF | Shape = round AND
Diameter < 4 inches |
| | THEN | Fruitclass = tree |
| Rule 4: | IF | Seedcount = 1 |
| | THEN | Seedclass = stonefruit |
| Rule 5: | IF | Seedcount > 1 |
| | THEN | Seedclass = multiple |
| Rule 6: | IF | Fruitclass = vine AND
Colour = green |
| | THEN | Fruit = watermelon |
| Rule 7: | IF | Fruitclass = vine AND
Surface = smooth AND
Colour = yellow |
| | THEN | Fruit = honeydew |
| Rule 8: | IF | Fruitclass = vine AND
Surface = rough AND
Colour = tan |
| | THEN | Fruit = cantaloupe |
| Rule 9: | IF | Fruitclass = tree AND
Colour = orange AND
Seedclass = stonefruit |
| | THEN | Fruit = apricot |
| Rule 10: | IF | Fruitclass = tree AND
Colour = orange AND
Seedclass = multiple |
| | THEN | Fruit = orange |
| Rule 11: | IF | Fruitclass = tree AND
Colour = red AND
Seedclass = stonefruit |
| | THEN | Fruit = cherry |

Rule 12: IF Fruitclass = tree AND
Colour = orange AND
Seedclass = stonefruit
THEN Fruit = peach

Rule 13: IF Fruitclass = tree AND
Colour = red OR yellow OR green AND
Seedclass = multiple
THEN Fruit = apple

Rule 14: IF Fruitclass = tree AND
Colour = purple AND
Seedclass = stonefruit
THEN Fruit = plum

- i) Use **FORWARD CHAINING** to describe the production system table including its working memory, conflict set and rule fired to establish a fruit. Initial data given is :

Shape = round
Diameter > 4 inches
Surface = smooth
Colour = yellow

Terminate when the final value for Fruit in the working memory. [6 marks]

Iteration #	Working memory	Conflict set	Rule fired
0	Shape = round	2,3	Halt
1	Diameter>4 inches	2	2
2	Fruitclass = vine	6,7,8	Halt
3	Surface = smooth	7	Halt
4	Color = yellow	7	7
5	Fruit = honeydew		Halt

- ii) Given the fruit to search is **apple**, use **BACKWARD CHAINING** to describe the production system table including its working memory, conflict set and rule fired to establish the initial data for this fruit.

State the initial facts required to establish that the fruit searched is an apple. [9 marks]

Iteration #	Working memory	Conflict set	Rule fired
0	Fruit = apple Seedclass = multiple Colour = red OR yellow OR green Fruitclass = tree Seedcount > 1 Diameter < 4 inches Shape = round	13 11,13 9,10,11,12,13,14 5 3 2,3	Halt 13 Halt Halt 5 3 Halt

The initial facts required to establish fruit to search is apple are:

Shape = round
 Diameter < 4 inches
 Seedcount > 1
 Colour = Red or Yellow or Green

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