

تَمَارِين

Recommendation System

- R0: If a recommendation for a person has been found, then print the recommendation and stop.
- R1: If the ski station is open and a person has money and transport then recommend that person goes skiing.
- R2: If a person has transport and hill-walking equipment, then recommend that person goes hill-walking.
- R3: A person with visitors will be recommended to go sightseeing.
- R4: The ski station opens when there is snow.
- R5: A person who works for a company and has been paid by that company has money.
- R6: Hill-walking equipment includes a pair of boots, a rucksack and a map.

- 1) There is snow.
- 2) Peter works for company 1
- 3) Peter works for company 2
- 4) Jane works for company 2
- 5) Jane works for company 3
- 6) Peter has been paid by company 1
- 7) Peter has been paid by company 2

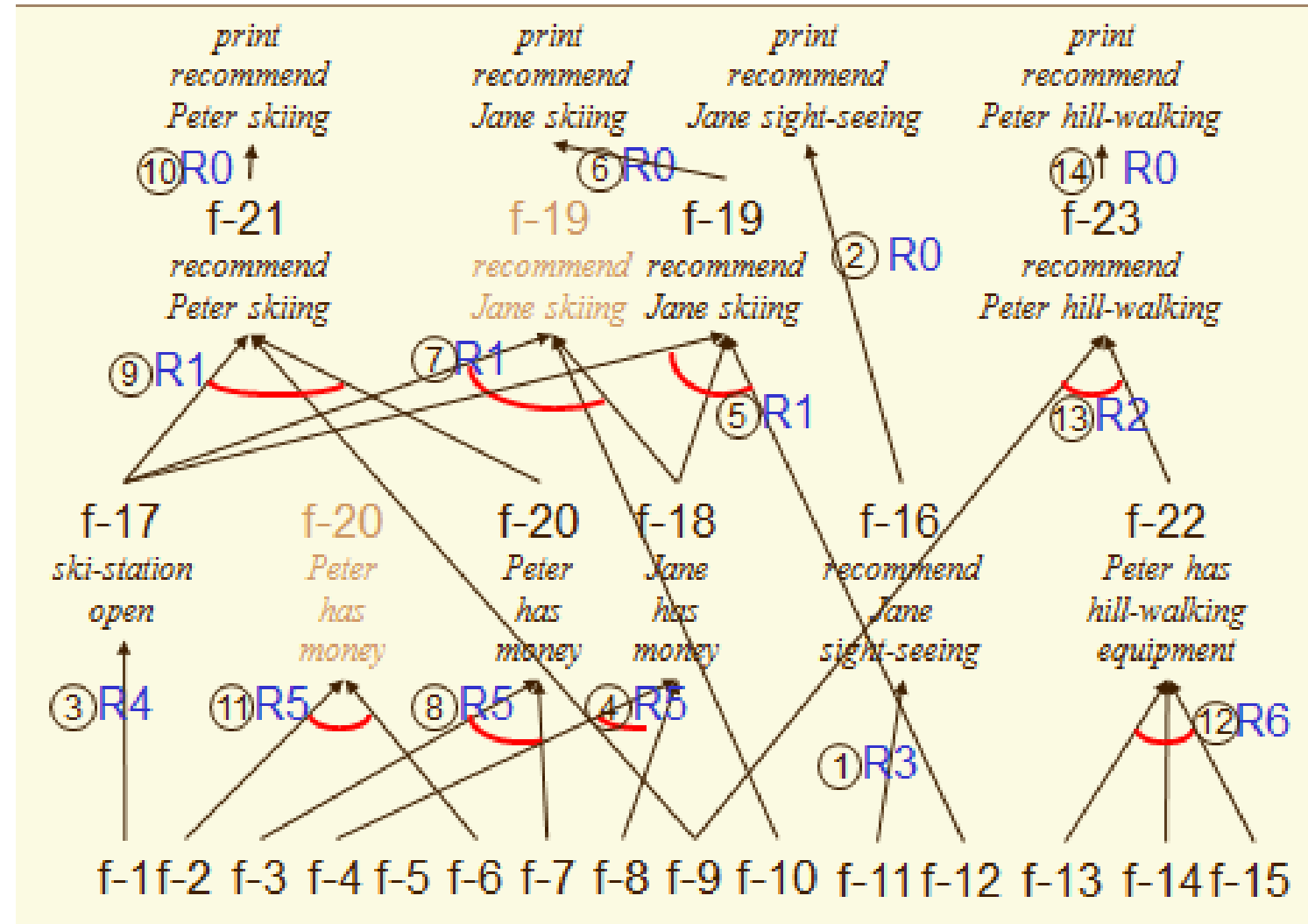
- 8) Jane has been paid by company 2
- 9) Peter's transport includes car 1
- 10) Jane's transport includes car 2
- 11) Jane's in-laws are visiting.
- 12) Jane's transport includes bike 1
- 13) Peter has boots.
- 14) Peter has a rucksack.
- 15) Peter has a map

طبّق السلسلة الأمامية Forward Chaining مع طريقة Textual Order لحل التضارب، مع تحديد ترتيب تنفيذ القواعد. (يفضل رسم مخطط تضع في أسفله الحقائق، وفي أعلاه التوصيات Recommendations، ثم تحدد ترتيب القواعد المطبقة بترقيمها مباشرة على الشكل).

- 1) There is snow.
- 2) Peter works for company 1
- 3) Peter works for company 2
- 4) Jane works for company 2
- 5) Jane works for company 3
- 6) Peter has been paid by company 1
- 7) Peter has been paid by company 2
- 8) Jane has been paid by company 2
- 9) Peter's transport includes car 1

- 10) Jane's transport includes car 2
- 11) Jane's in-laws are visiting.
- 12) Jane's transport includes bike 1
- 13) Peter has boots.
- 14) Peter has a rucksack.
- 15) Peter has a map

- R0: If a recommendation for a person has been found, then print the recommendation and stop.
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- R3: A person with visitors will be recommended to go sightseeing.
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- R6: Hill-walking equipment includes a pair of boots, a rucksack and a map.



تحديد نوع الحيوان

• ليكن لدينا مجموعة القواعد التالية التي تهدف لتحديد الحيوانات:

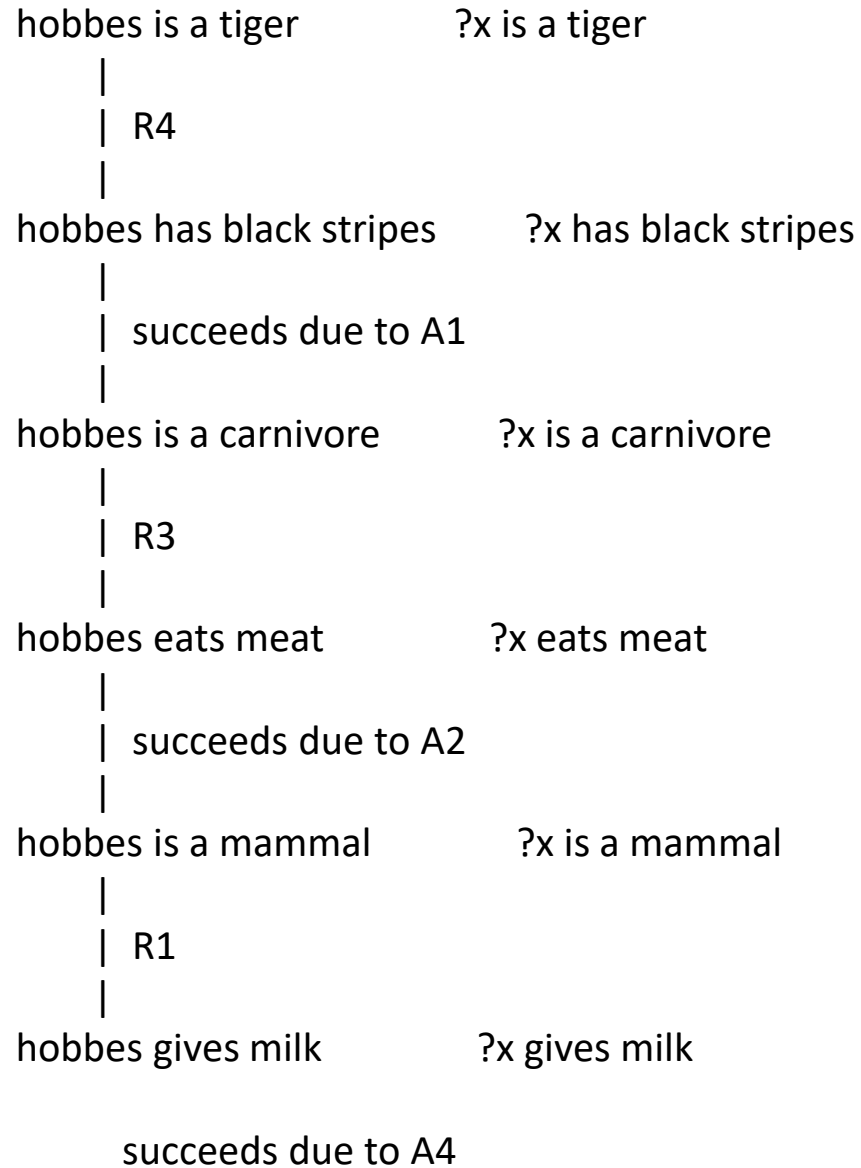
- R1: IF ?x gives milk THEN ?x is a mammal
- R2: IF ?x has feathers AND ?x flies AND ?x lays eggs THEN ?x is a bird
- R3: IF ?x eats meat AND ?x is a mammal THEN ?x is a carnivore
- R4: IF ?x has black stripes AND ?x is a carnivore THEN ?x is a tiger

• ليكن لدينا الحقائق التالية في الذاكرة العاملة:

- A1: hobbes has black stripes
- A2: hobbes eats meat
- A3: tweety has feathers
- A4: hobbes gives milk
- A5: tweety flies

- السلسلة الخلفية لتحديد ما إذا كان hobbs نمرأ أم لا: hobbes is a tiger.
- بيّن الخطوات المتبعة والتحديث الذي يجري في الذاكرة العاملة (البحث بالعمق أولاً).

BACKWARD CHAINING:



hence the working memory is updated with:

A6: hobbes is a mammal

A7: hobbes is a carnivore

A8: hobbes is a tiger

استخدم السلسلة الأمامية لاستنتاج جميع ما ينتج من قاعدة المعرفة هذه (القواعد مع الحقائق).

ابن جميع الأشجار مبيناً الخطوات المتبعة والتحديث الذي يجري في الذاكرة العاملة.

FORWARD CHAINING:

R1: hobbes gives milk ?x gives milk

succeeds due to A4

WM := WM + { A6: hobbes is a mammal } ?x is a mammal

R2: tweety has feathers ?x has feathers

|
| succeeds due to A3

tweety flies ?x flies

|
| succeeds due to A5

tweety lays eggs ?x lays eggs

fails

hence rule R2 is not triggered.

R3: hobbes eats meat ?x eats meat

|
| succeeds due to A2
|

hobbes is a mammal ?x is a mammal

succeeds due to A6

WM:= WM + { A7: hobbes is a carnivore } ?x is a carnivore

R4: hobbes has black stripes ?x has black stripes

|
| succeeds due to A1
|

hobbes is a carnivore ?x is a carnivore

succeeds due to A7

WM:= WM + { A8: hobbes is a tiger } ?x is a tiger

Applying again R1, R2, R3, R4 does not yield any new assertions and so the forward chaining process stops.