

Question Two:

The following paragraphs are translated to each other in Arabic and English, read and answer the questions below.

من اكثر الامراض اصابة لمحصول القمح في مصر هي نقص النتروجين وصدأ الاوراق والبياض الدقيقى. وتكون اعراض نقص النتروجين هي اصفرار الاوراق ونحافة الساق بالاضافة الى موت السنابل اما بالنسبة لمرض صدأ الاوراق فتكون الاوراق ذابلة والساق حمراء والسنابل فارغة من الحبوب و بالنسبة لمرض البياض الدقيقى فيكسو اللون الابيض كل النبات (الورق والساق والسنابل).

The most diseases that infect wheat crop in Egypt are the nitrogen deficiency, leaf rust and powdery mildew. The "nitrogen deficiency" symptoms are yellowing of leaves and Thinness of the stem in addition to the death of spikes. As for "leaf rust" disease, the leaves will be wilted, stem turn red and the spikes become empty of grains. As well for the "powdery mildew" disease the white color will cover the whole plant (leaves, stem, and spike)

- Extract the knowledge from the previous paragraph in concepts, property, and value formats. (See the table 1, 2).
- Extract the source of value for each property and if its type is either single or multiple.
- Convert this knowledge into prolog code and write the program to infer these rules.
- If you are building the expert system in bilingual (English/Arabic), which column are you going to translate into Arabic?

Concept	Property	Values	S.O.V	s/m
disorder	name	nitrogen deficiency leaf rust powdery mildew	Diagnosis model	m
leaf	color	Yellow, white	user	m
stem	shape	thinness	User	s
spikes	status	death	User	s
leaf	shape	wilted	User	s
stem	color	Red, white	User	s
spikes	status	empty of grains	User	
spikes	color	white	user	

Table 1

Rhs				Lhs		
Concept	Property	Operators	value	Concept	Property	value
leaf	color	=	Yellow	disorder	name	nitrogen deficiency
stem	shape	=	thinness			
spikes	status	=	death			

Table 2

