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% -----  
% Knowledge Base: Symptoms and Patients  
% -----  
symptom(john, fever).  
symptom(john, cough).  
symptom(john, sore_throat).
```

```
symptom(mary, rash).  
symptom(mary, fever).  
symptom(mary, headache).
```

```
symptom(sam, cough).  
symptom(sam, sore_throat).  
symptom(sam, fatigue).
```

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% -----  
% Disease Diagnosis Rules  
% -----  
has_disease(Person, flu) :-  
    symptom(Person, fever),  
    symptom(Person, cough),  
    symptom(Person, sore_throat).
```

```
has_disease(Person, measles) :-  
    symptom(Person, rash),  
    symptom(Person, fever),  
    symptom(Person, headache).
```

```
has_disease(Person, cold) :-  
    symptom(Person, cough),  
    symptom(Person, sore_throat),  
    symptom(Person, fatigue).
```

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% Decision Making: Treatment Suggestion
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```
treatment(flu, 'Take rest, drink fluids, and take paracetamol.').  
treatment(measles, 'Consult a doctor, avoid contact, and take vitamin A supplements.').  
treatment(cold, 'Drink warm fluids, take rest, and use throat lozenges.').
```

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```
% Recommend Treatment Based on Diagnosis
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```
recommend_treatment(Person, Treatment) :-  
    has_disease(Person, Disease),  
    treatment(Disease, Treatment).
```

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% Sample Queries (Use these in SWI-Prolog)
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% -----
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```
% ?- has_disease(john, Disease).
```

```
% Expected Output: Disease = flu.
```

```
% ?- has_disease(mary, Disease).
```

```
% Expected Output: Disease = measles.
```

% ?- has\_disease(sam, Disease).  
% Expected Output: Disease = cold.

% ?- recommend\_treatment(john, Treatment).  
% Expected Output: Treatment = 'Take rest, drink fluids, and take paracetamol.'

% ?- recommend\_treatment(mary, Treatment).  
% Expected Output: Treatment = 'Consult a doctor, avoid contact, and take vitamin A supplements.'

% ?- recommend\_treatment(sam, Treatment).  
% Expected Output: Treatment = 'Drink warm fluids, take rest, and use throat lozenges.'. 5th experiment