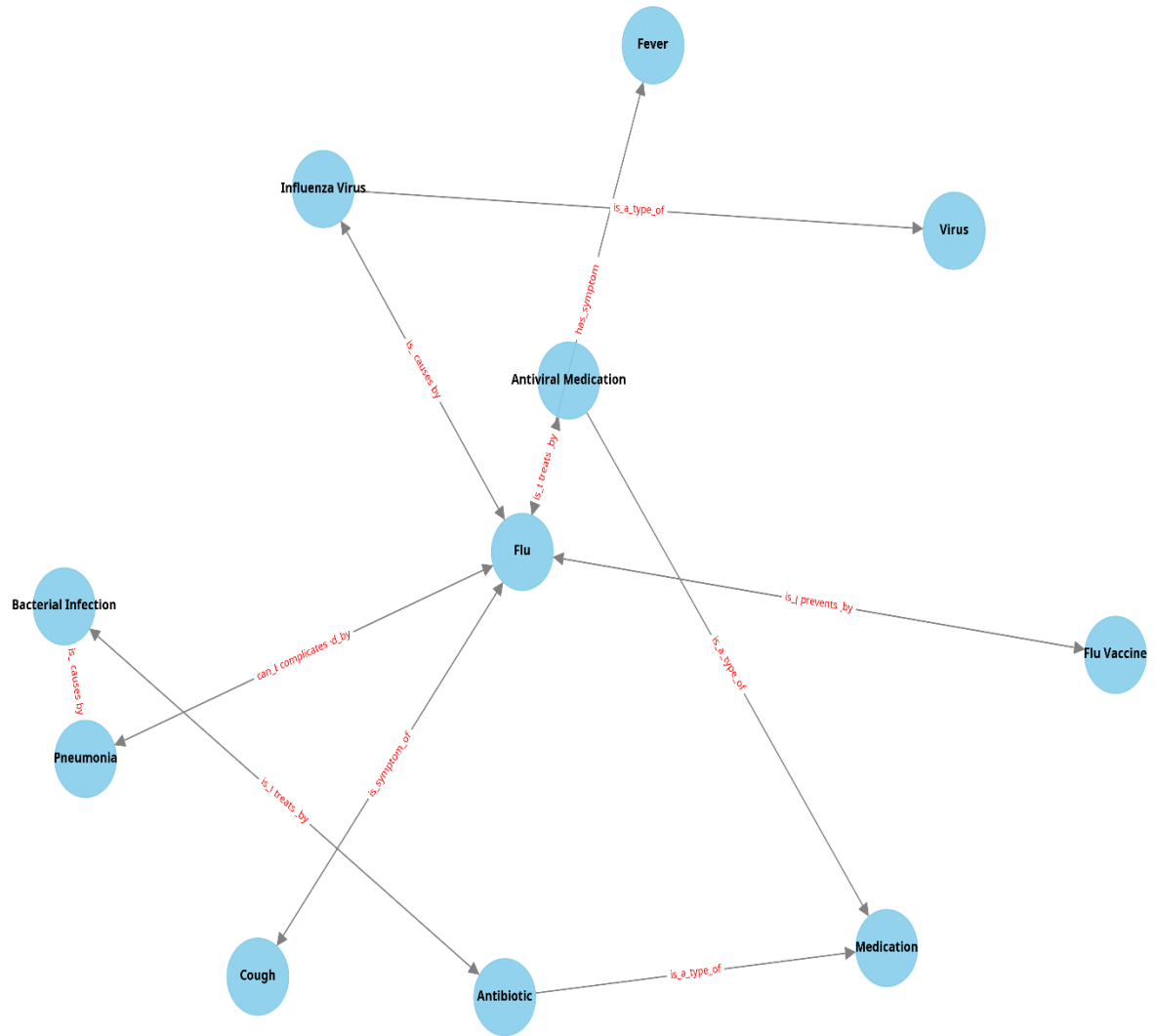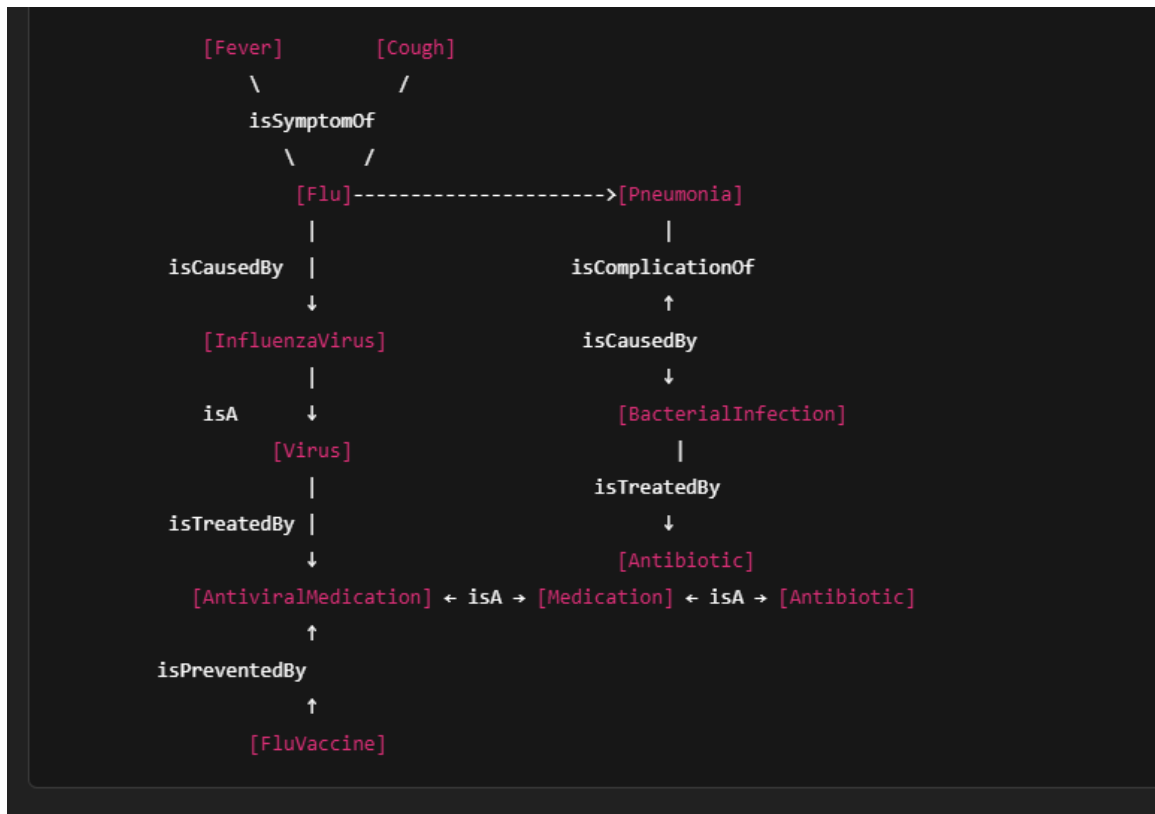**Draw Hierarchical tree (Semantic Network)**

Fever is a symptom of flu which has cough as symptom as well , flu is causal by influenzas virus which is a type of virus , flu can be treated by antiviral medication and flu vaccine prevent flu , praenomina is complicated flu and is caused by bacterial infection which is treated by antibiotic which is type of medication like antiviral one

Semantic Network Visualization

```
       [Fever]        [Cough]
          \             /
          isSymptomOf
            \     /
            [Flu]-------------------->[Pneumonia]
              |                          |
 isCausedBy   |                    isComplicationOf
              ↓                          ↑
        [InfluenzaVirus]            isCausedBy
              |                          ↓
    isA       ↓                    [BacterialInfection]
            [Virus]                     |
              |                    isTreatedBy
 isTreatedBy  |                          ↓
              ↓                    [Antibiotic]
    [AntiviralMedication] ← isA → [Medication] ← isA → [Antibiotic]
              ↑
 isPreventedBy
              ↑
        [FluVaccine]
```

3. Sample Questions

🧠 A. Semantic Distance Questions

1. What is the semantic distance between Fever and Virus?

   ○ Path: Fever → Flu → InfluenzaVirus → Virus → (Distance = 3)

2. What is the distance between Pneumonia and Medication?

   ○ Path: Pneumonia → Antibiotic → Medication → (Distance = 3)

3. Find the shortest path between Cough and AntiviralMedication:

   ○ Path: Cough → Flu → AntiviralMedication → (Distance = 3)

4. "What is the type of semantic network used to represent the relationships between symptoms, causes, treatments, and complications of flu and pneumonia?"

ANSWER: Definitional Networks , Assertional Networks , Implicational Networks