Implementation of Forward Chaining

Aim: To implement forward Chaining.

Scenario: A diagnostic expert system helps determine whether a patient has a disease based on observed symptoms.

Procedure.

- Initialise a knowledge base containing If then rules.
- Define the initial facts
- Repeat until no new facts are inferred
  1. Iterate through each rule in the knowledge base.
  2. Check if all conditions of a rule exist in the known facts.
  3. if true and the conclusions is not already in facts add it to the facts.
  4. Mark a new fact was inferred to continue
- Stop when no new facts are derived.
- Check if the fixed goal or diagnosis in the inferred facts
- Output the conclusions

Programa

```
knowledge_base = [
    (["cough", "fever"], "flu"),
    (["sore_throat", "runny_nose"], "cold"),
    (["sore_throat"], "fever")
]

facts = {"cough", "sore_throat"}

def forward_chaining()
  inferred = true
    while inferred
        Inferred = False
```

for Conditions, conclusions in knowledge_base: