LAB 9

08/12/24

First order search : Forward chaining.

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Ato

Step 1:- Initialize Facts

Create a dictionary or data structure to store facts:

facts = {"American(Robert)":True, "Hostile(country
":True, "Sells(Robert, Missiles, Country A)":True

Step 2: Define the Rule.

writing a Function to evaluate rule.

Rule: criminal(x) ← American(x) ∧ Sells(x,y,z) ∧ Hostile(z)

inputs:

- name of the person(x) , Facts dictionary

Logic :-

Check if all conditions are satisfied:

- American(x) is true
- Sells(x, y, z) is true for some y, z.
- Hostile(z) is True.

Step 3: Apply the Rule

For x = Robert, evaluate:

- American(Robert).
- Sells(Robert, Missiles, Contry A).
- Hostile(Country A).

If all conditions are true, deduce criminal(Robert) = True.

Step 4: out Put result.

If criminal(Robert) is true.

Print: "Robert is criminal,"

else

Print: "Robert is not criminal,"

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Code :-

```
facts = {
    "American(Robert)": True,
    "Hostile(country A)": True,
    "sells(Robert, Missiles, Country A)": True.
}

def is_criminal(person):
    if (facts.get(f"American({person})") and
        facts.get(f"sells({person}, Missiles, Country A)") and
        facts.get("Hostile(country A)")
    ):
        return True
    return false

person = "Robert"
if is_criminal(person):
    Print(f"{person} is a criminal:")
else:
    Print(f"{person} is not a criminal:")
```

Out Put :-

Robert is a criminal.