Notes by :- JPWEB Developers

Default Reasoning

Default Reasoning is very common form of non-monotonic reasoning. Here we want to draw conclusions based on what is most likely to be true.

Approaches to Default Reasoning

- Non-Monotonic Logic
- Default Logic

* Non-Monotonic Logic

- This is basically an extension of first Order predicate logic to include a modal operator, M.
- The Purpose of this is to allow for consistency.

Modal operator (M)
↳ Consistent with everything we know.

Example

∀x : plays instrument (x) ∧
M manages (x) → jazz musician (x)

∴ x can manage it Consistent with all other

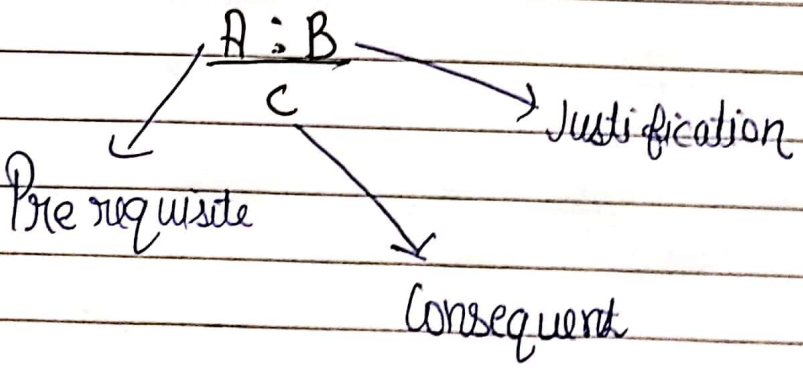
knowledge then we can again conclude that x is jazz musician.

Consistency :- One common solution (consistent with PROLOG notation) is
-to show that fact P is true attempt to prove ¬P.

If we fail we may say that P is consistent (since ¬P is false).

* Default Logic

It introduces a new inference Rules.



If A and if it is consistent with the rest of what is known to assume that B, then conclude that C.

Example

$$\frac{BIRD(X) : FLIES(X)}{\therefore FLIES(X)}$$