LAB - 8

Problem Statement

"If all birds can fly, and Bluey is a bird, then Bluey can fly"

Representation in first order logic

1. $\forall x \, (Bird(x) \rightarrow Canfly(x))$

   (All birds can fly)

2. $Bird(Bluey)$

   (Bluey is a bird)

To Prove

3. $Canfly(Bluey)$

   (Bluey can fly)

Solution

1. $\forall x \, (Bird(x) \rightarrow Canfly(x))$:

   $x = Bluey$:

   $Bird(Bluey) \rightarrow Canfly(Bluey)$

2. Modus Ponens

   $Bird(Bluey) \rightarrow Canfly(Bluey)$ is true.

   $Bird(Bluey)$ is true.

   Therefore, $Canfly(Bluey)$ is true.

Conclusion

Bluey can fly: $Canfly(Bluey)$.

Proved

Output

Enter the rules, Type 'done' to finish entering rules

Enter rule : all birds can fly

Enter rule: Bluey is a bird.

Enter rule: done

Enter the goal : Bluey can fly.

Attempting to deduce the goal,
unification successful: all birds can fly matches
with Bluey can fly.

Conclusion: The goal 'Bluey can fly' is true based
on the rules.