**VISHWAKARMA INSTITUTE OF TECHNOLOGY**

COMPUTER ENGINEERING

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**Roll No: 15**

**Subject: Artificial Intelligence (AI)**

**LAB ASSIGNMENT NO – 6**

Implementation of an Expert system using **PROLOG**.

*Implementation of an expert system using Prolog means creating a knowledge-based system that uses rules, facts, and inference mechanisms to make decisions or provide expert-level advice in a specific domain.*

It allows you to capture complex relationships and perform automated reasoning, making it a powerful tool for creating expert systems.

**Code:**

% Define facts about animals and their habitats.

habitat(dog, land).

habitat(cat, land).

habitat(human, land).

habitat(snake, land).

habitat(bird, land).

habitat(fish, water).

habitat(dolphin, water).

habitat(eagle, air).

habitat(bat, air).

% Define rules to determine the category of an animal.

land\_animal(X) :-

  habitat(X, land).

water\_animal(X) :-

  habitat(X, water).

flying\_animal(X) :-

  habitat(X, air).

% Define a predicate for user interaction.

identify\_animal\_category :-

  write('Welcome to the Animal Classifier!'), nl,

  write('Please enter the name of an animal to identify its category.'), nl,

  write('Animal name: '),

  read(Animal),

  classify\_animal(Animal).

% Define a rule to identify and classify an animal.

classify\_animal(Animal) :-

  land\_animal(Animal),

  write(Animal), write(' is a land animal.'), nl.

classify\_animal(Animal) :-

  water\_animal(Animal),

  write(Animal), write(' is a water animal.'), nl.

classify\_animal(Animal) :-

  flying\_animal(Animal),

  write(Animal), write(' is a flying animal.'), nl.

classify\_animal(Animal) :-

  write(Animal), write(' is not a known animal.'), nl.

% Main loop.

main :-

  identify\_animal\_category,

  write('To continue, enter another animal name or type "quit" to exit.'), nl,

  read(Input),

  (Input == quit) -> halt

  ; main.

% Example interaction:

% Welcome to the Animal Classifier!

% Please enter the name of an animal to identify its category.

% Animal name: cat

% cat is a land animal.

%

% To continue, enter another animal name or type "quit" to exit.

% Animal name: dolphin

% dolphin is a water animal.

%

% To continue, enter another animal name or type "quit" to exit.

% quit

**Output:**

