**Name :Suyash Shinde       TY-CS-D     BATCH 2      ROLL NO :28**

**Assignment 6 :** **Expert System using prolog (Dinosaur Prediction)**

**Code-**

% Define the knowledge base with dinosaur species attributes

dinosaur(tyrannosaurus, 'Tyrannosaurus rex', carnivorous, large, late\_cretaceous, bipedal, 12).

dinosaur(velociraptor, 'Velociraptor mongoliensis', carnivorous, medium, late\_cretaceous, bipedal, 6).

dinosaur(triceratops, 'Triceratops horridus', herbivorous, large, late\_cretaceous, quadrupedal, 9).

dinosaur(stegosaurus, 'Stegosaurus stenops', herbivorous, large, late\_jurassic, quadrupedal, 8).

dinosaur(allosaurus, 'Allosaurus fragilis', carnivorous, large, late\_jurassic, bipedal, 10).

dinosaur(brachiosaurus, 'Brachiosaurus altithorax', herbivorous, large, late\_jurassic, quadrupedal, 9).

dinosaur(pterodactyl, 'Pterodactylus antiquus', piscivorous, small, late\_jurassic, flying, 5).

dinosaur(archaeopteryx, 'Archaeopteryx lithographica', omnivorous, small, late\_jurassic, flying, 3).

dinosaur(ankylosaurus, 'Ankylosaurus magniventris', herbivorous, large, late\_cretaceous, quadrupedal, 7).

dinosaur(pachycephalosaurus, 'Pachycephalosaurus wyomingensis', herbivorous, medium, late\_cretaceous, bipedal, 6).

% Add more dinosaur entries here

dinosaur(brontosaurus, 'Brontosaurus excelsus', herbivorous, large, late\_jurassic, quadrupedal, 9).

dinosaur(diplodocus, 'Diplodocus hallorum', herbivorous, large, late\_jurassic, quadrupedal, 8).

dinosaur(iguanodon, 'Iguanodon bernissartensis', herbivorous, large, early\_cretaceous, quadrupedal, 7).

dinosaur(oviraptor, 'Oviraptor philoceratops', omnivorous, small, late\_cretaceous, bipedal, 6).

dinosaur(therizinosaurus, 'Therizinosaurus cheloniformis', herbivorous, large, late\_cretaceous, bipedal, 6).

% Add more dinosaur entries here

% Check if a dinosaur matches the user's preferences (backward chaining)

check\_dinosaur\_preferences(Dinosaur) :-

dinosaur(Dinosaur, ScientificName, Diet, Size, Era, Locomotion, Intelligence),

ask\_preferences('diet', Diet),

ask\_preferences('size', Size),

ask\_preferences('era', Era),

ask\_preferences('locomotion', Locomotion),

ask\_preferences('intelligence', Intelligence),

format('The dinosaur ~w (Scientific name: ~w) suits your preferences.', [Dinosaur, ScientificName]).

% Ask user preferences

ask\_preferences(AttributeLabel, Attribute) :-

format('Do you like ~w dinosaurs? (yes/no) ', [AttributeLabel]),

read(Answer),

Answer == yes.

% Suggest a dinosaur based on user preferences (forward chaining)

suggest\_dinosaur :-

write('What type of diet do you prefer? (carnivorous/herbivorous/omnivorous/piscivorous): '),

read(Diet),

write('What size of dinosaur do you prefer? (small/medium/large): '),

read(Size),

write('Which era are you interested in? (late\_jurassic/late\_cretaceous/early\_cretaceous): '),

read(Era),

write('What type of locomotion do you find interesting? (bipedal/quadrupedal/flying): '),

read(Locomotion),

write('Do you prefer dinosaurs with high or low intelligence? (high/low): '),

read(IntelligencePreference),

find\_matching\_dinosaur(Diet, Size, Era, Locomotion, IntelligencePreference, Dinosaur, ScientificName),

format('Recommended dinosaur to learn about: ~w (Scientific name: ~w)', [Dinosaur, ScientificName]).

find\_matching\_dinosaur(Diet, Size, Era, Locomotion, IntelligencePreference, Dinosaur, ScientificName) :-

dinosaur(Dinosaur, ScientificName, Diet, Size, Era, Locomotion, Intelligence),

(IntelligencePreference == high, Intelligence >= 7;

IntelligencePreference == low, Intelligence < 7).

% Entry point

start:-

write('Welcome to the Dinosaur Recommender System!'), nl,

write('Type start. to start the Recommender'), nl,

suggest\_dinosaur.