RIPHAH INTERNATIONAL UNIVERSITY, ISLAMABAD

Lab # 10

Bachelors of Computer Science – 6th Semester

Subject: AI

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Date of Submission: 05- Nov -2024

Task: 1

a. loves(Vincent, mia)

Type: Complex Term

Functor: loves

Arity: 2

b. 'loves(Vincent, mia)'

Type: Atom

Functor/Arity: No

c. Butch(boxer)

Type: Not a term

Functor/Arity: No

d. boxer(Butch)

Type: Complex Term

Functor: boxer

Arity: 1

e. and(big(burger), kahuna(burger))

Type: Complex Term

Functor: and

Arity: 2

Sub-terms:

big(burger):

Functor: big, Arity: 1

kahuna(burger):

Functor: kahuna, Arity: 1

f. and(big(X), kahuna(X))

Type: Complex Term

Functor: and

Arity: 2

Sub-terms:

big(X):

Functor: big, Arity: 1

kahuna(X):

Functor: kahuna, Arity: 1

g. _and(big(X), kahuna(X))

Type: Complex Term (underscore _ is valid at the beginning of an atom)

Functor: _and

Arity: 2

Sub-terms:

big(X):

Functor: big, Arity: 1

kahuna(X):

Functor: kahuna, Arity: 1

h. (Butch kills Vincent)

Type: Not a term (expressions enclosed in parentheses are not valid terms in this form)

Functor/Arity: No

i. kills(Butch Vincent)

Type: Not a term (Syntax is incorrect, there should be a comma between Butch and Vincent)

Functor/Arity: No

j. kills(Butch, Vincent)

Type: Complex Term

Functor: kills

Arity: 2

Task 2:

woman(vincent).

woman(mia).

man(jules).

person(X) :- man(X); woman(X).

loves(X, Y) :- father(X, Y).

father(Y, Z) :- man(Y), son(Z, Y).

father(Y, Z) :- man(Y), daughter(Z, Y).

Facts:

1. woman(vincent).
2. woman(mia).
3. man(jules).

Total Facts: 3

Rules:

1. person(X) :- man(X); woman(X).
2. loves(X, Y) :- father(X, Y).
3. father(Y, Z) :- man(Y), son(Z, Y).
4. father(Y, Z) :- man(Y), daughter(Z, Y).

Total Rules: 4

Clauses:

Total Clauses: 3 (facts) + 4 (rules) = 7

Predicates:

1. woman/1
2. man/1
3. person/1
4. loves/2
5. father/2
6. son/2
7. daughter/2

Total Predicates: 7

Task 3:

killer(butch).

married(mia, marsellus).

dead(zed).

kills(marsellus, X) :- gives_foot_massage(X, mia).

loves(mia, X) :- good_dancer(X).

eats(jules, X) :- nutritious(X); tasty(X).

Task 4:

Prolog:

Interpreter: