Ahsanullah University of Science and Technology

Department of Computer Science and Engineering

Program: Bachelor of Science in Computer Science and Engineering

Course No: CSE 4108

Course Title: Artificial Intelligence Lab

Assignment No:

Date of Submission:

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Question 1: Write Python and Prolog codes to find the grandchildren of somebody.

Solution:

Prolog Code:

```
parent('Hasib','Rakib').
parent('Rakib','Sohel').
parent('Rakib','Rebeka').
parent('Rashid','Hasib').

grandparent(X,Z):-
      parent(X,Y),parent(Y,Z).


findGc:-
      write('Grandparent:'),read(Gp),write('Grandchildren: '),
      grandparent(Gp,Gc),write(Gc),tab(5),fail.
findGc.
```

```
parent('Hasib','Rakib').
parent('Rakib','Sohel').
parent('Rakib','Rebeka').
parent('Rashid','Hasib').


grandparent(X,Z):-
        parent(X,Y),parent(Y,Z).

findGc:-
        write('Grandparent: '),read(Gp),write('Grandchildren: '),
        grandparent(Gp, Gc),write(Gc),tab(5),fail.
findGc.
```

```
SWI-Prolog (AMD64, Multi-threaded, version 8.4.1)
File  Edit  Settings  Run  Debug  Help
Welcome to SWI-Prolog (threaded, 64 bits, version 8.4.1)
SWI-Prolog comes with ABSOLUTELY NO WARRANTY. This is free software.
Please run ?- license. for legal details.

For online help and background, visit https://www.swi-prolog.org
For built-in help, use ?- help(Topic). or ?- apropos(Word).

?- findGc.
Grandparent: 'Hasib'.
Grandchildren: Sohel     Rebeka
true.
```

Python Code:

```
tupleList1=[('parent', 'Hasib', 'Rakib'),
            ('parent', 'Rakib', 'Sohel'),
            ('parent', 'Rakib', 'Rebeka'),
            ('parent', 'Rashid', 'Hasib')]

X=str(input("Grandparent:"))

print('Grandchildren:', end=' ')
i,j=0,0

while(i<=3):
    if ((tupleList1[i][0] == 'parent') &( tupleList1[i][1] == X)):
        for j in range(4):
            if ((tupleList1[j][0] == 'parent') &
                (tupleList1[i][2] == tupleList1[j][1])):
                print(tupleList1[j][2], end=' ')
    i=i+1
```

```
tupleList1=[('parent', 'Hasib', 'Rakib'),
            ('parent', 'Rakib', 'Sohel'),
            ('parent', 'Rakib', 'Rebeka'),
            ('parent', 'Rashid', 'Hasib')]

X=str(input("Grandparent:"))

print('Grandchildren:', end=' ')
i,j=0,0

while(i<=3):
    if ((tupleList1[i][0] == 'parent')&( tupleList1[i][1] == X)):
        for j in range(4):
            if ((tupleList1[j][0] == 'parent') &
                (tupleList1[i][2] == tupleList1[j][1])):
                print(tupleList1[j][2], end=' ')
    i=i+1
```

```
================ RESTART: C:\Users\ASUS\Desktop\KB in Python.py ================
Grandparent:Hasib
Grandchildren: Sohel Rebeka
```