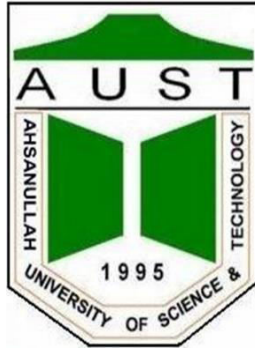


# Ahsanullah University of Science and Technology



## 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:

Submitted to:

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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
```