CS354

Assignment-1

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Q1.

Ans:- All in the below figure

```
(2 ms) yes
| ?- parent(X,pat)
.

X = bob ?

yes
| ?- parent(liz,X).

no
| ?- parent(X,Y),parent(Y,pat).

X = pam
Y = bob ? ;

X = tom
Y = bob ? ;
```

Q2.

Ans:-

a)happy(X) :- parent(X,_).

b)twoChildren(X) :- parent(X,Z), sister(Z,_).

c)grandchild(X,Z) :- parent(X,Y), parent(Y,Z).

d)aunt(X,Y) :- parent(Z,Y),sister(X,Z).

Q3.

Ans:-

a)father(X, Y) :- male(X), parent(X, Y).

b)sister(X, Y) :- female(X), parent(Z, X), parent(Z, Y), X\==Y.

c)grandmother(X, Y) :- female(X), parent(X, Z), parent(Z, Y).

 d)cousin(X, Y) :- parent(U, A), parent(U, B), parent(A, X), parent(B, Y), A\= B

Q4.

Ans:-

sameRank(aardvark,flume):- soldier(aardvark, X), soldier(flume, X).

Q5.

Ans:-

ancestor(X, Y) :- parent(X, Y).

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