

Resolution: Exercises

1 Exercise

Consider the following Prolog code:

```
link(a,b).  
link(a,c).  
link(a,d).  
link(b,e).  
link(d,f).
```

```
path(X,X).  
path(X,Y):- link(X,Z), path(Z,Y).
```

Draw SLD-trees for the queries

1. ? – path(c,T).
2. ? – path(d,T).
3. ? – path(b,T).
4. ? – path(a,T).

For successful computations, also give the result.

2 Exercise

Consider the following Prolog code:

```
combine([],[],[]).  
combine([X|Xs],Ys,[X|Zs]):- combine(Xs,Ys,Zs).  
combine(Xs,[Y|Ys],[Y|Zs]):- combine(Xs,Ys,Zs).
```

Draw SLD-trees for the queries:

1. ? – combine([], [b], L₁).
2. ? – combine([a], [], L₁).
3. ? – combine([a], [b], L₂).
4. ? – combine([a, a], [], L₃).
5. ? – combine([a, a], [b], L₄).

For successful computations, also give the result. Describe the behaviour of Prolog on being set these queries with the program above.