

Exercises

Exercise 1. Consider the simplified flight connection program we saw in the class:

$$\begin{aligned} \text{conn}(X, Y) &:- \text{dir}(X, Y). \\ \text{conn}(X, Y) &:- \text{dir}(X, Z), \text{dir}(Z, Y). \\ \text{dir}(\text{tor}, \text{ott}). \\ \text{dir}(\text{ott}, \text{mtl}). \end{aligned}$$

Construct the resolution search tree for the query $? - \text{dir}(\text{tor}, X)$. What are the answers for each refutation ?

Exercise 2. How will Prolog answer each of the following queries:

- a. $[a, b, c, d] = [a, [b, c, d]]$
- b. $[a, b, c, d] = [a|[b, c, d]]$.
- c. $[a, b, c, d] = [a, b, [c, d]]$.
- d. $[a, b, c, d] = [a, b|[c, d]]$.
- e. $[a, b, c, d] = [a, b, c, [d]]$.
- f. $[a, b, c, d] = [a, b, c|[d]]$.
- g. $[a, b, c, d] = [a, b, c, d, []]$.
- h. $[a, b, c, d] = [a, b, c, d|[]]$.

Solutions are on the next page

Solutions

Exercise 1 Please send me or show me your tree. You can check the answers with Prolog.

Exercise 2 Check the answers with Prolog.