

rules \rightarrow

$$\begin{aligned} \text{enigma2}(A, [A|_]) &:- !. \\ \text{enigma2}(A, [_|T]) &:- \text{enigma2}(A, T) \\ \text{enigma}([A, B|_], [A|T2]) &:- \text{enigma2}(B, T2), !. \\ \text{enigma}([A, B|T1], [_|T2]) &:- \text{enigma}([A, B|T1], T2). \end{aligned}$$

query $\rightarrow \text{enigma}([1, 2], [1, 1, 2]).$

1. $\text{enigma}([A, B|_], [A|T2]) :- \text{enigma2}(B, T2), !.$
 passes where $A=1, B=2, [A|T2] = [1, 2]$

2. $\text{enigma2}(B, T2) \Rightarrow \text{enigma2}(2, [1, 2])$

$\text{enigma2}(A, [A|_])$ Fails

$\text{enigma2}(A, [_|T])$ success so $\text{enigma2}(A, T) !.$
 where $A=2$
 $T=[2]$

3. $\text{enigma2}(2, [2]).$

$\hookrightarrow \text{enigma2}(A, [A|_])$ success so ! (stop) .N

Bubble back to the original call,
 $\text{enigma}([1, 2], [1, 1, 2])$, which succeeded
 so the result is true