Input synthesis for Datalog: Final solution

path(X, Y) <- link(X,Y)

path(X, Y) <- link(X, Z), path(Z, Y)

path(1, 2), !link(1, 2), !path(1, 3)

$\forall X, Y. path_1(X, Y) \Leftrightarrow link(X, Y)$

$\forall X, Y. path_2(X, Y) \Leftrightarrow (link(X, Y) \vee (\exists Z. link(X, Z) \wedge path_1(Z, Y))$

...

$\forall X, Y. path_n(X, Y) \Leftrightarrow (link(X, Y) \vee (\exists Z. link(X, Z) \wedge path_{n-1}(Z, Y))$

$\forall X, Y. path(X, Y) \Leftarrow link(X, Z)$

$\forall X, Y. path(X, Y) \Leftarrow (\exists Z. link(X, Z) \wedge path(Z, Y))$

$path_n(1,2) \wedge \neg link(1, 2) \wedge \neg path(1,3)$

Bounded unrolling for positive queries

No unrolling for negative queries