

$\{X=a, P=\{a\}\}$

$Path(a, b, P)$

$\{N1=a, N2=b\}$
 $P = [N1 | X | P1]$

$Path(a, b, [a])$

$edge(a, X)$
 $Path(X, b, [X | P1])$

$a = b$

(F)

$\{X=a\}$

$edge(a, a)$
 $Path(a, b, [a | P1])$

$edge(a, a)$

(F)

$\{X=b\}$

$edge(a, b)$
 $Path(b, b, [b | P1])$

$P1 = []$

$Path(b, b, [b])$

(T)

$P2 = [b, P2]$

~~$P2 = [c, P2]$~~

$P = [a, P2]$

$\{X=c\}$

$edge(a, c)$
 $Path(c, b, [c | P1])$

$Path(c, b, [c | P1])$

similar to
 $Path(a, b, [a | P1 | P])$
and goes on forever.

$P_1 = [b, P_2]$

$\text{Path}(b, b, [b, P_2])$

$\text{edge}(b, b)$
 $\text{path}(b, b, P_2)$

F

$P_2 = [c, P_2]$

$\text{Path}(b, b, \text{Path}(c, b, P_2))$

$\text{edge}(b, c)$
 $\text{path}(c, b, P_2)$

F