Example 1 *Uvažujme nasledovný logický program P:*

```
edge(a, b).
edge(c, b).

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

Nájdite úspešnú deriváciu pre cieľ $G = \leftarrow path(a, c)$.

Solution 1

G_1: $\leftarrow path(a, c)$
r_1: $path(X, Z) \leftarrow path(X, Y) \wedge path(Y, Z); \theta_1\{X/a, Z/c\}$
G_2: $\leftarrow path(a, Y) \wedge path(Y, c)$
r_2: $path(X, Y) \leftarrow edge(X, Y); \theta_2\{X/a\}$
G_3: $\leftarrow edge(a, Y) \wedge path(Y, c)$
r_3: $edge(a, b) \leftarrow; \theta_3\{Y/b\}$
G_4: $\leftarrow path(b, c)$
r_4: $path(Y, X) \leftarrow path(X, Y); \theta_4\{X/c, Y/b\}$
G_5: $\leftarrow path(c, b)$
r_5: $path(X, Y) \leftarrow edge(X, Y); \theta_5\{X/c, Y/b\}$
G_6: $\leftarrow edge(c, b)$
r_6: $edge(c, b) \leftarrow; \theta_6\{\}$
G_7: $\leftarrow$

Example 2 *Uvažujme nasledovný logický program P:*

```
fly(X) :- bird(X), \+ abnormal(X).

bird(X) :- penguin(X).
bird(X) :- eagle(X).
bird(X) :- duck(X).

abnormal(donald).
abnormal(X) :- penguin(X).

eagle(sam).
penguin(tom).
duck(donald).
```

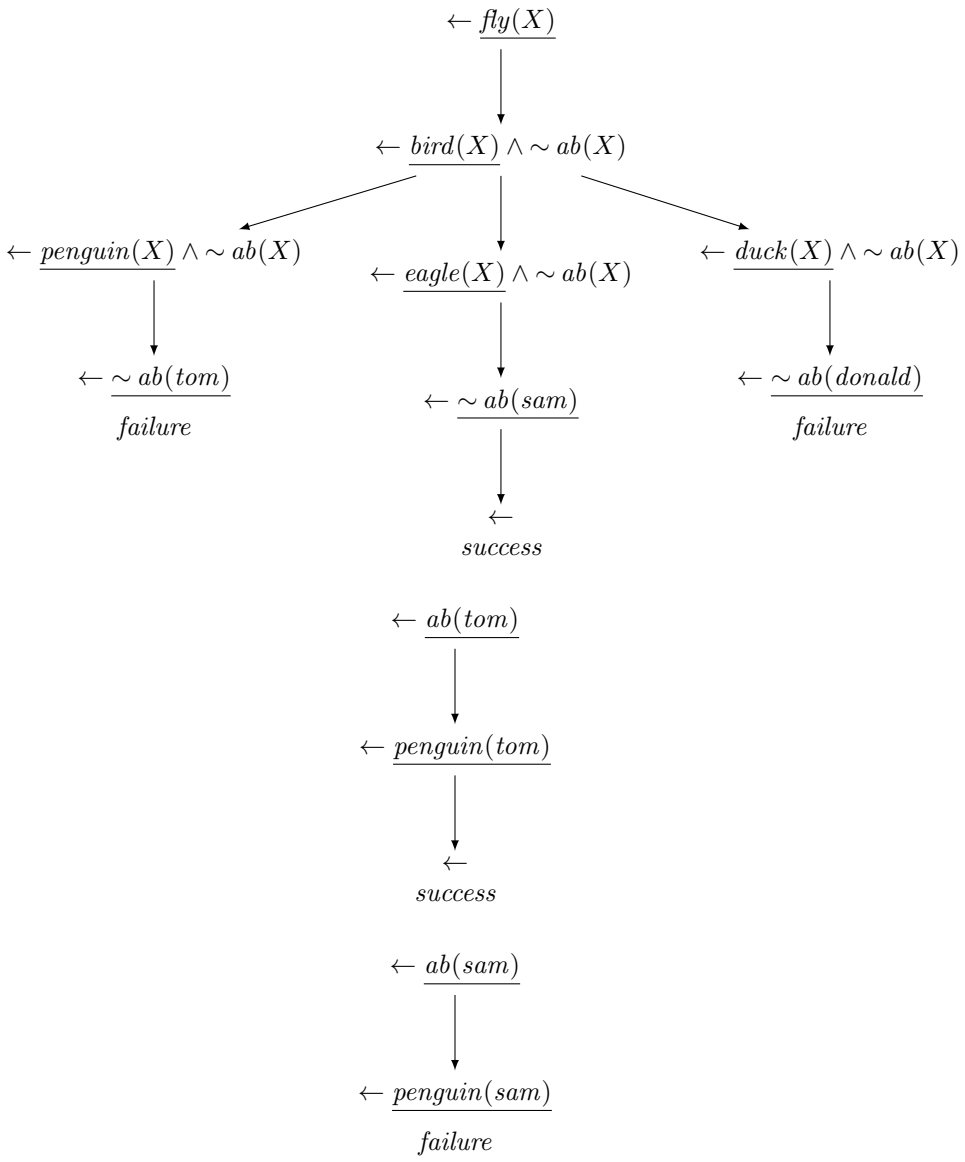
Zostrojte SLDNF-strom pre logický program P a cieľ

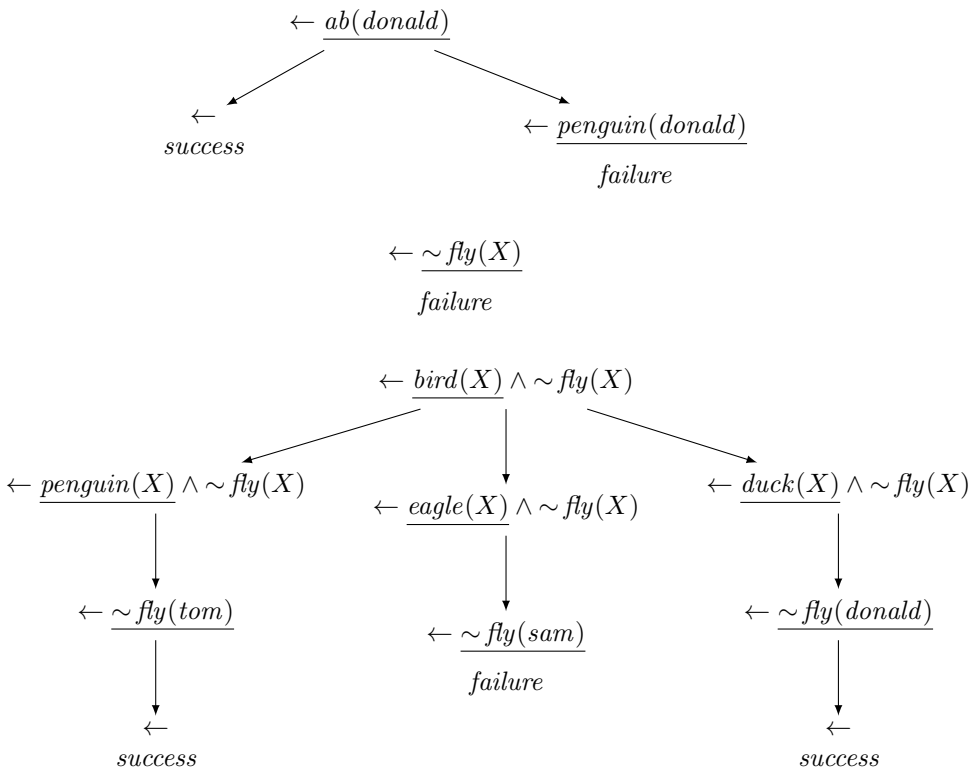
1. $\leftarrow fly(X)$

2. $\leftarrow \sim fly(X)$

3. $\leftarrow bird(X), \sim fly(X)$

Solution 2




← ab(donald)
←
success
← penguin(donald)
failure
← ∼fly(X)
failure
← bird(X) ∧ ∼fly(X)
← penguin(X) ∧ ∼fly(X)
← eagle(X) ∧ ∼fly(X)
← duck(X) ∧ ∼fly(X)
← ∼fly(tom)
← ∼fly(sam)
failure
← ∼fly(donald)
←
success
←
success