

I will give you a set of facts F1 to F90, facts G1 to G9 and a template for a logical rule. Please generate one single rule to match the template and logically entail the facts G1 to G9 based on facts F1 to F90.

Facts:

F1: *r1*(lorenz, emma).

F2: *r45*(emma, lorenz).

F3: *r1*(lorenz, marie).

F4: *r45*(marie, lorenz).

F5: *r1*(lorenz, adrian).

F6: *r45*(adrian, lorenz).

F7: *r1*(lorenz, elena).

F8: *r45*(elena, lorenz).

F9: *r1*(isabella, emma).

F10: *r45*(emma, isabella).

F11: *r1*(isabella, marie).

F12: *r45*(marie, isabella).

F13: *r1*(isabella, adrian).

F14: *r45*(adrian, isabella).

F15: *r1*(isabella, elena).

F16: *r45*(elena, isabella).

F17: *r1*(leo, mia).

F18: *r45*(mia, leo).

F19: *r1*(leo, philipp).

F20: *r45*(philipp, leo).

F21: *r1*(mia, lena).

F22: *r45*(lena, mia).

F23: *r1*(laura, selina).

F24: *r45*(selina, laura).

F25: *r1*(selina, paula).

F26: *r45*(paula, selina).

F27: *r1*(valentin, paula).

F28: *r45*(paula, valentin).

F29: *r1*(dominik, lena).

F30: *r45*(lena, dominik).

F31: *r1*(emma, gertrude).

F32: $r_{45}(\text{gertrude}, \text{emma})$.
F33: $r_1(\text{emma}, \text{lukas})$.
F34: $r_{45}(\text{lukas}, \text{emma})$.
F35: $r_1(\text{marie}, \text{luisa})$.
F36: $r_{45}(\text{luisa}, \text{marie})$.
F37: $r_1(\text{marie}, \text{florian})$.
F38: $r_{45}(\text{florian}, \text{marie})$.
F39: $r_1(\text{marie}, \text{claudia})$.
F40: $r_{45}(\text{claudia}, \text{marie})$.
F41: $r_1(\text{elias}, \text{gertrude})$.
F42: $r_{45}(\text{gertrude}, \text{elias})$.
F43: $r_1(\text{elias}, \text{lukas})$.
F44: $r_{45}(\text{lukas}, \text{elias})$.
F45: $r_1(\text{helga}, \text{elias})$.
F46: $r_{45}(\text{elias}, \text{helga})$.
F47: $r_1(\text{jakob}, \text{elias})$.
F48: $r_{45}(\text{elias}, \text{jakob})$.
F49: $r_1(\text{adrian}, \text{selina})$.
F50: $r_{45}(\text{selina}, \text{adrian})$.
F51: $r_1(\text{christian}, \text{luisa})$.
F52: $r_{45}(\text{luisa}, \text{christian})$.
F53: $r_1(\text{christian}, \text{florian})$.
F54: $r_{45}(\text{florian}, \text{christian})$.
F55: $r_1(\text{christian}, \text{claudia})$.
F56: $r_{45}(\text{claudia}, \text{christian})$.
F57: $r_1(\text{florian}, \text{jonas})$.
F58: $r_{45}(\text{jonas}, \text{florian})$.
F59: $r_1(\text{ella}, \text{jonas})$.
F60: $r_{45}(\text{jonas}, \text{ella})$.
F61: $r_1(\text{claudia}, \text{mia})$.
F62: $r_{45}(\text{mia}, \text{claudia})$.
F63: $r_1(\text{claudia}, \text{philipp})$.
F64: $r_{45}(\text{philipp}, \text{claudia})$.
F65: $r_{43}(\text{lorenz})$.
F66: $r_{44}(\text{isabella})$.

F67: $r44(\text{marie})$.

F68: $r43(\text{adrian})$.

F69: $r43(\text{christian})$.

F70: $r43(\text{florian})$.

F71: $r44(\text{ella})$.

F72: $r43(\text{jonas})$.

F73: $r44(\text{elena})$.

F74: $r44(\text{claudia})$.

F75: $r43(\text{leo})$.

F76: $r44(\text{mia})$.

F77: $r44(\text{laura})$.

F78: $r44(\text{selina})$.

F79: $r44(\text{luisa})$.

F80: $r43(\text{valentin})$.

F81: $r44(\text{paula})$.

F82: $r43(\text{dominik})$.

F83: $r44(\text{lena})$.

F84: $r44(\text{emma})$.

F85: $r43(\text{philipp})$.

F86: $r43(\text{elias})$.

F87: $r44(\text{gertrude})$.

F88: $r44(\text{helga})$.

F89: $r43(\text{jakob})$.

F90: $r43(\text{lukas})$.

G1: $r14(\text{selina}, \text{mia})$

G2: $r14(\text{selina}, \text{philipp})$

G3: $r14(\text{selina}, \text{jonas})$

G4: $r14(\text{luisa}, \text{paula})$

G5: $r14(\text{gertrude}, \text{mia})$

G6: $r14(\text{gertrude}, \text{paula})$

G7: $r14(\text{gertrude}, \text{philipp})$

G8: $r14(\text{gertrude}, \text{jonas})$

G9: $r14(\text{claudia}, \text{paula})$

Template: $\forall A, B, C, D, E, F : \#\#(A, B) \wedge \#\#(B, C) \wedge \#\#(C, D) \wedge \#\#(D, E) \wedge \#\#(E, F) \wedge ++(A) \rightarrow r14(A, F)$

Note that the symbol ‘##’ in the template should be filled with either ‘r1’ or ‘r45’, while the symbol ‘++’ should be filled with either ‘r43’ or ‘r44’. After filling in the template, the generated rule is: