Unification algorithm

Unify(Ψ_1, Ψ_2)

Step 1 : if Ψ_1 or Ψ_2 is a variable or constant, then:

a) If Ψ_1 or Ψ_2 are identical, then return NIL.

b) Else if Ψ_1 is a variable,

a. then if Ψ_1 occurs in Ψ_2, then return FAILURE,

b. Else return {(Ψ_2/Ψ_1)}.

c) Else if Ψ_2 is a variable

a. if Ψ_2 occurs in Ψ_1 then return Failure

b. Else return {(Ψ_1/Ψ_2)}

d) Else return FAILURE

Step 2 : If the initial predicate symbol in Ψ_1 and Ψ_2 are not same, then return FAILURE.

Step 3 : If Ψ_1 and Ψ_2 have a different number of arguments, then return FAILURE.

Step 4 : Set substitution set (SUBST) to NIL

Step 5 : For i = 1 to the number of elements in Ψ_1.

a) Call unify function with the ith element of Ψ_1 and ith element of Ψ_2, and put result into S.

b) if S = failure then return FAILURE.

c) if S ≠ NIL then do,

a. Apply S to the remainders of both L1 and L2

b. SUBST = Append (S, SUBST)

Step 6 : return SUBST.