| **Date:**<br>**Ex No:**<br><br>7.1 | **Title of the Lab**<br>Implementation of Unification in SWI Prolog | **Name:** Mainak Chaudhuri<br>**Registration Number:**<br><br>RA1911027010039<br>**Section:** N1<br>**Lab Batch:** 1<br>**Day Order:** 3 |
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AIM:

To implement Unification in SWI Prolog.

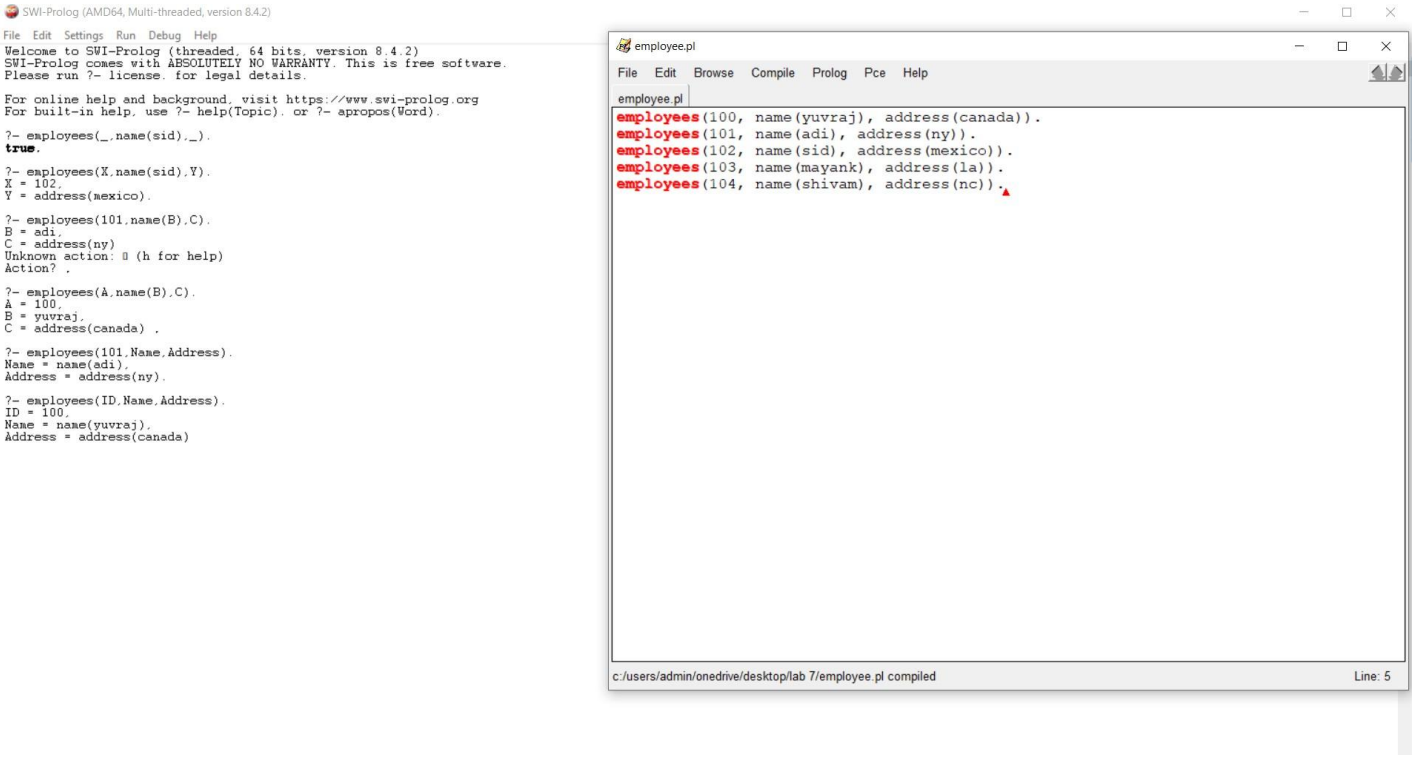
Description of the Concept or Problem given:

Prolog uses the unification technique, and it is a very general form of matching technique. In unification, one or more variables being given value to make the two call terms identical. This process is called binding the variables to values. For example, Prolog can unify the terms cat(A), and cat(mary) by binding variable A to atom mary that means we are giving the value mary to variable A.

Manual Solution:

1. If Y1 or Y2 is a variable or constant, then:
a) If Y1 , or Y2 are identical, then return NIL.
b) Else if Y1 is a variable,
    a. then if Y1, occurs in Y2, then return FAILURE
    b. Else return {({Y2,/Y1)).
c) Else if Y2 is a variable,
    a. If Y2 occurs in Y1, then return FAILURE,
    b. Else return {(Y1/Y2)}.
d) Else return FAILURE.
2. If the initial Predicate symbol in Y1, and Y2 are not same, then return FAILURE.
3. If Y1 and Y2 have a different number of arguments, then return FAILURE.
4. Set Substitution set(SUBST) to NIL.
5. For i=1 to the number of elements in Y1.
a) Call Unify function with the ith element of Y1, and ith element of Y2, and put the result into S.
b) If S=failure then returns Failure
c) If S =/= NIL then do,
    a. Apply S to the remainder of both L1 and L2.
    b. SUBST = APPEND(S, SUBST).
6. Return SUBST.

Screenshots of the Outputs:




Signature of the Student

[MAINAK CHAUDHURI]