

# AI - Lab test - 2

Write up: Prog - 1

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- Q. Answer whether the given pair of statements can be unified or not. If unification is possible, write the code for substitutions. Justify your answer for these cases also along with successful unification.
- 1) Predicates are different
  - 2) Mismatch of no. of arguments
  - 3) if arguments are constants.

noPred = 0

noArg = [None for i in range(10)]

noUse = ''

predicate = [None for i in range(10)]

argument = [[None for i in range(10)] for i in range(10)]

def main():

global noPred

char = 'y'

while (char == 'y'):

print ("\*PROGRAM FOR UNIFICATION\*")

noPred = int(input("Enter Number of Predicates:"))

for i in range(noPred):

# noUse = input() # If to accept "enter" as a character

print ("Enter predicate", (i+1), ":")

predicate [i] = input()

print ("Enter no. of arguments for  
Predicate", predicate[i], ":")

noArg[i] = int (input())

for j in range (noArg[i]):

    print ("Enter argument", j+1, ":")

    argument [i][j] = input()

print predicate()

check - arg - pred()

char = input ("Do you want to continue (y/n) : ")

def unify():

    flag = 0

    for i in range (noPred - 1):

        for j in range (noArg[i]):

            if (argument[i][j] != argument[i+1][j]):

                flag = 0

            if (flag == 0):

                print ("\* SUBSTITUTION IS \*")

                print (argument[i+1][j], "/", argument[i][j])

                flag += 1

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if (flag == 0):

print ("Arguments are Identical")

print ("No need of Substitution")

flag + = 1

def check\_arg\_pred ():

predflag = 0

argflag = 0

for i in range (nolval - 1):

if (predicate [i] != predicate [i+1]):

print ("Predicates are not same")

print ("Unification can not progress")

predflag = 1

break

if (predflag != 1):

ind = 0

key = noArg [ind]

length = len (noArg)

for i in range (0, key - 1):

if i >= key:

continue ~

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~~if first~~

if  $\text{ind}! = \text{length} - 1:$

$\text{ind} + 1$

$\text{key} = \text{noArg}[\text{ind}]$

if ( $\text{noArg}[i] \neq \text{noArg}[i+1]$ ):

print("No of arguments are not same")

$\text{argflag} = 1$

break

if ( $\text{argflag} == 0$  and  $\text{predflag} != 1$ ):

unify()

main()