Manas Agawal 1BM18CSUSZ

Quertian 4 inhou re def get Attributer (string): enpr = '\([^)]+\)' matche = 10. findAll (enpe, etting) return [m for m in str (metcher) if m. is Alphel def get Pudicates (string): enfre [a-Z~]+\([[A-Za-Z,]+\) return re. findAll (enfr., string) de Morgan (centence): string 2 ". join (list (centence). copy ()) etning z etning veflace ('~~', ") flag = '[' in stiming ctung = string replace ('~E', '') string & string strip (']') for predicate in getPredication (string): string = string. replace (predicale, f ~ fredicate 3')

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s. list (string)
    for i,c in enumerate (string):
            stood string replace (postdicale
            ILEC = 2 'V'
                   s[i]= 'N'
              ely c 2 2 ' 1'
                    1(i) = 'V'
              Ming 2 11 join (s)
   stury 2 (1. join(s)
     string = string replace ('nn', ")
      return j'[\Esting\]' if flag, else string
dy skolinization (centenci):
       exolemi-constantia []'schi(c)3' for c in
                      range (ord('A'), ord('Z')+)]
       stalement = ".join (list (sentines). why)
       matcher 2 10 findall ('[+]; statement)
       for match in matches [::-1]:
              statement = statement . replace (match, ")
               statements = 12 M. Jind All ("IETE C 7)
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+\]] statement)

statement; replace (s, s[1:-1]) for sin stalements: for predicate in get Predicates (statement): attributer = get Attributer (nuedicale) if "join (attributer). ishower(). tatement = statement. replace (match[i], skolem-constante.hop(o)) al = [a for a in attributes ija islower()] aUz Ca for a in attributes if not a is lower)] [0] Jalement. 2 stolement. Uplace CaV, J'Esklen-constants, popCo) [{al[v] if lon [aL) else metch[i] ر ٰ (کِ

retur stalement

Joh to CNF (fol): dy statement = fol. replace ("<=)", "-") · while '-' in statement: iz slatement. inden ('-') neur-slatement 2 '[' + slatement [: i] + '=>' + clatement (i+1:)+ 1 JAE' + statement [i+1.]+ '=>' + clatement [:i] + (J' Notement = statement. replace ("=>", '-') enpr 2 (([([^]]+))] statement z re. find All (arps, statement) fori, s in enumerate (statements): if ([) in s and ']' not in s: stertements Ci] +2 (7)

for sizin statement: statement = slatement-replace (S, folto-crof(S))

while '-) in italement: 12 statementa (1-1) br = Haliment inder ('C') if (C' in statement else 0 new statement = 'n' + statement [bi: i] + 'V' + statement [i+1:] glalement : datement (: br) new-statement if 61 >0 else new-ctatement. while (NY' in statement: iz. skatement. inden ('~V') statement = list (statement) Halament [i], Notement [i+17, stalement (1+2) = (7), stalements (1+2)

folement? ". join (statement)

· telements xi 'En' 1 2 Halement. inden ('nj') 3 = list (stalement / S(i), (Ci+1), (Ci+2), (v', s[+2), '~' statement . (join (1) statement « chatement. replace ('N[VI, "[~V') slatement = statement replace (" ~[]', ([~]') enfr > (~ [+ 17.)" Statement ? Sufind All (entry, elatement) jor &'s in statement : statement = statement replace (s, jot to cry enfr 2 (N)[[A]]+1] statement ? 10. find All (lapi - statement) for sin ilatement statement = slatement « replace (s, De Morgan(1) return ilatement fol = infut("Enter FUL") print (Skolemisation (Jol to Cny (Jol))