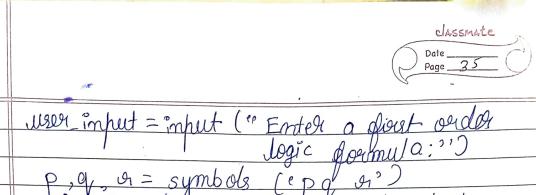
Lab Juggram - 9 Connect à direct order logic to confunctive edgeath of Step 1: Eliminate implications Replace implications with their equivalent forms wing the sule p=>q, = ¬p V q. Step 2: More megations inwoords eapply al Monganis law to mole mejation inwards. FOOD Example = 7 PV 79 Step 3: Distribuite disjunctions over conjunctions · distribute disjunctions (v) oul confunctions ( 4) weing the distoubutible puopeody. .
Fire example pv(9,19)=(pv9)1(pv3) Step +: convert to CNF form Ensure that formula is inc NF ly applying any additional simplifications if needed

Code form sympy import symbols And, a.e. inplies, del eliminate implications (formula): outurn dormula: sules (Tomplies (p. 9.), Or (NO+(p), g.)) def moile negations inway ds (formula): def distribute disjunctions over Conjunctions ectiven downla.simplify ( ) def fol to-onf (fol-formula): formula\_step1 = eliminate implications ( gol formula) Somula\_step2 = mole\_megations inwoods ( formale step 1) formula\_step3 = distocibute\_ disjunctions own conjunctions (formula\_step2) cnf. formula = to cnf (formula\_ Step 3) section ont formula



P, q, on = symbols (epg or)
for formula = eval (user input

print (" NF Formula: " cnf gormula)

print (" NF Formula: " cnf gormula)

Output enter a first order logic: ps

Enter a direct order logic: ps (~9/0)

FOL formula: And (p. or (Not (q), &))

CNF Formula: Or (And (p. or), ANd