PREGATIRE PROGRAMARE LOGICA

1 Algoritmul de unificare:

$$h(a,x,g(x,b)) = h(a,y,y)$$

h-simbol de functi en anh=3, a,bec SINDER

h(a, x, g(x, b) = h(a, y, y) + avern initial lists de ecuation par 1: du compunerex = y $= \alpha$, x = y, g(x, b) = y $a, \alpha \rightarrow eliminane$, revolvane.

varibile (4,6)=4 = nu exista unificator pt ca y apare in g(y, b)

Julia quea termen

Act exemplu: Ganti unificator pentre enmatorii termeni.

\$\f(\f(\gamma\cong\), \h(\gamma\), \begin{aligned}
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\phi(\gamma\cong\)), \h(\phi)\phi) \begin{aligned}
\phi(\gamma\cong\)), \h(\gamma\cong\)), unt variabile fg, h ∈ # -> simboluri de lundre

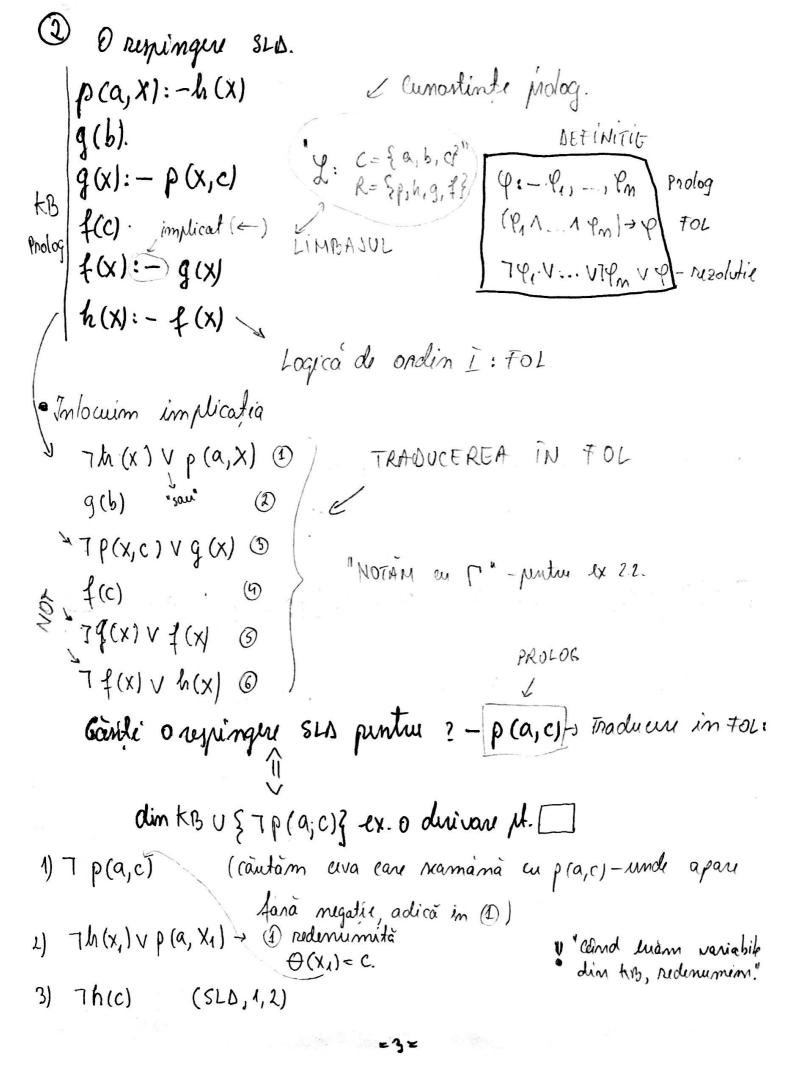
anf=2-anitals de f

ang = anh = 1.

· t, tz, tr - tubuie so facem prechi 2 cab 2:

S	R
	f(v,w)=f(f(g(x),h(y),h(z)), f(v,w)=f(f(4,h(h(x)),h(
	v = f(g(x), h(y), w = h(z), v = f(u, h(h(x)), w = h(y) resolva
$v \leftarrow f(g\alpha), h(y)$	W= h(2), W=h(y), 4(g(x), h(y))= f(v, h(h(x)))
0 = f(g(x), h(y)) W + h(2)	h(z)=h(y), f(g(x), h(y))=f(v, h(h(x))
Full tot Si. in si in R	
{ = 4 = f(g(x), h(y))	g(x) = u, $h(y) = h(h(x))$
WE h(y)	"Variabila n' infocuient cu termenul" Rezolva
M+ g(x)	y = h(x)(x)
y = h(x), u = g(y Ø
$E \leftarrow h(x), v \leftarrow f(g)$ $W \leftarrow h(h(x))$	(x), g(h(x))

M ATENTIE: Se fac infocuiri (als de mai devrence din Sei R).



6 redenumit 4) 7 f(x,) v h(x2) 0(x2)= C 5) 74(c) SLD 3,4 6) f(c) ∈ tB 7) 7 p(a,c) ·Acelani lucius dan pe anbore de resolutie: 1 redenum 7 h(c) (6) redin 7 f(c) 1 (7) 22. Anotati cà din r. re deduce p (a,c): · ([F p (a,c)) - anatam ou diductio dintre salisfiabilitate FUETPRARIS mu ute not = dem rustpraris exader pt []. * Se poat da, remantica inte-un punct fix. (fkB) - hubrard · UNIVERSUL HERBRAND: (format numai din constanti) Ty= { a,b,c) · BAZA HERBRAND: (formulele de ligra, invantiat) By= { p(4, ..., th | P = R · Casul nortru: By = { h(a), h(b,), h(c) } q(a), q(b), q(c) 1(9), f(b), f(c) P(a,a), p(a,b)...p(c,c) }

· Cum Calculam!?

$$f_{KB}^{0}(\phi)=\{f(c),g(b)\} = \text{"all davis faite"} \approx 0.56:00^{u}$$

$$f_{KB}^{0}(f_{KB}(\phi))=\{f(c),g(b)\} \cup \{h(c),f(b)\} \rightarrow \text{Ne obtin}_{KB-1}$$

$$f_{KD}^{4}(\emptyset) = \{f(c), f(b), g(b), h(c), p(a,c)\} \cup \{g(a)\}$$

$$f_{KB}^{5}(\phi) = \{ -1, g(a) \} \cup \{f(a) \}$$

$$f_{KB}^{\delta}(\phi) = \{ ---, f(\alpha) \} \cup \{ h(\alpha) \}$$
 am gant junctul fix in the option $f_{KB}^{\dagger}(\phi) = \{ ---, h(\alpha) \} \cup \{ p(\alpha, \alpha) \}$

- (3 xR (x,y) ← (+y Q (x,y)) → sà o ducem pânà la forma 'scolen!
- PAS 1: Sà il facem redemembre ai sà determinam forma redusa (sà mu avem aceiasi varialielà cuandificata de davo oi).

→ adica adata pu x si o dota pe y.

"~1:66:00"

P~3*R(*, y1) ↔ Yy Q(X1,y) → FORMA REDUSA"

· PAS 2: Trehuie sà scăpâm de implicații, echivalente, etc:

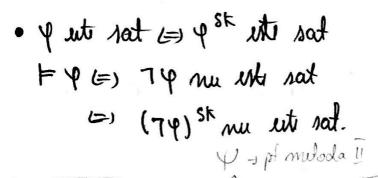
T 3x R (x, y,1) x by & (x, y)

7-tuce in interior

4x78(x,4,)44yQ(x,y) 4x4y((78(x,4,))vQ(x,,4,) " sunt niste reguli, vezi aus !

* Actinimati Forma Skalem 3*+4417*2 (P(41)VR(x2,X2))

- → su pareurig in sens → si su elimina existentiali eu o constantà mouà
- · 9 = 4 y 1 = X2 (P(y1) + R(C1, X2) + Am inlocuit existentialul X1 cu C2 C1-constata' mouà
- · 42= 441 (P(41) VR(C1, f(41))) -> f. substitute de funde nouà
- · 4 sk = 42 ! Skolemnizarea pointraro satisfialilitatia!



+ 4+4/7 Q(b) ∧ P(*) ∧ (Q(y) V 7 pf(a))) - formula este un FNC

1: 16:20"

· FORMA CLAUZALĂ: a lui φ= {{ TQ(6), {P(y}), {Q(y), τP(f(α))}}

Vrem sà anatàm satisfiabilitatea lui q. Adica sa ajungem la 'patrotel' [].

• 2 METODE:

I: G= { 7 Q(b)} -> Clause.

(3= {a(y), 7p(f(a))} ->

• Din C_4 ii C_3 obtinem C_4 prin repolete: $C_4 = \{7P(f(\alpha))\} \quad \Theta(y) = 5$, Repolete into C_4 , C_3 \Box , $Q(x) = f(\alpha)$, Resolute into C_4 , C_2

II: Prin formula lui Herbrand.

-> Expanniumea Herbrand at lu ?

· Universal HERBRAND: TE (4)= {b, a} u {4 m(a), 4 m(b) | m=1}

Se ia toata formula: Y

4={4++1+3++= Tx++)} = { 4 (x | t1, y | t2 | t1, t2 ∈ Tx (4)} y re infocusable on t

· p ut satisfialilà (=) expasiunea Herband ut satisfialile

Ψ [x] f(a); y | b] = (](Q(b) \ P(f(a)) \ (Q(b) \ 7 P(f(a)) \)

mu are model

Pt. exemen o diducte naturalà. Resolvani in euro di pe site.