wall 10 1 Resolution in First-orden Logic. Data____ Step- 1 3-Express knowledge Base (ies) in fivel ord- 10gil 1. Premises: · Vx Food Ca) -> Likes (sonn,x) (John Ilkes all wind of food) · Food CApple) A Food (vegetables) CAPPLE and regolarbles are food) · YXYY (Eachs (Y, x) N - Killed (y)) - Food (si) canything anyone eads ers not willed is food) · Eats (Anil, Peanuts) 17 Killed (Anil) CAnil eachs peaneds and is still alive) · Hoc Earls (Angl, x) -> Ecots (Hanny, x) (nanny earls everything that Anil Roots) · Ax Hishera) - Hilled (10) (Anyone who is alive is not killed) · tx-pilled (2)-> Alive (2) (Anyone who is not hilled is ad alive) 2. Goal (n) · Proves : Likes (John, Peamuts) STEPR: convent to clausal Form convert each statement into conjunctive normal Form(INF) 1/ TFOOD (C) V Likes (John, X) & FOOD (APPLE) Food (Vegetables) 26 - texts Cy, on V Killed Cy) V Food (x) (a) tads (Anil, peanuts) - Killed (Anil (6) TEads (Anil, x) V Eads (Harry, 2) (6) 1 TALIVE (a) V TRILLED (x) 7 & Killed Cas V Alive (x) goal = 71.º Kes (John, Peanuts)

	Steps: Apply Resolution
	(D From (4):
	tate Connel, peanute) 1 -1 Killed (Anil)
	& From(3);
	substitute y= Anil, x=peanuts:
	TENDS (Anil, peanuts) V Killed (Anil) Viron
	(Peanut B)
12 1/25	The state of the s
	Resolve with Eats (Anil, Peanuts);
	Killed CAnil) V Food (Peanuts)
	-Resolve with - Killed (Anil):
- 27	Pood (Peanuts)
0	(a) = 1
	3 From (1):
19/4	substitute & = Peanets:
	Posolve len 5 () V Likes (John, Peanests)
	Rosolve with Food (Peanuts); Likes (John, Peanuts)
	(4) Negation of good - 19k . of tol 2
	(4) Negation of goal -1Cikes (John, Peanuts) is resolved
	Or 154 (C) ()
	By resolution, Likes (John, Fearuts) 93
	the state of the s

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	Chilon the knowladge base
/	
_	a tonn 1840s all Mind of food
	n Apple and vegetable
	o. Apple and vegetables one food
	c. Anything any one eats & not killed 95
	4000
	do Hnil eats reamets and still sieve
	e. Harry eats every thing that soll ente
	+. Huyone who is all vo implies not willed
	y : Anyone who is not killed implies alive.
	ENDING VIVE SERVE VICE PROPERTY OF THE PARTY
	Step 1:
	expressing KB in FOL
	THE RESIDENCE OF THE PARTY OF T
	a. Voc: food (x) -> 1ºKes (John, x)
	5. food (Apple) A food (vegetables)
	CO YX TY: ROOS (X, Y) A TRILLED (X) -> food (Y)
	d. eats (Anol, Peanuts) ralive (Anol).
	e. tx: eats (Anil, x) -> eats (Hanny, x)
1 683	f. va; - nilled (x) -> alive (x)
	g. +x: alive (n) -> - milled (n)
	h. likes (John, Reares).
	Step 2 1/-
	constanting. Clacisal form
	a food(a) V. likes(John, x)
	b. food (Apple)
	c. food (vegetables)
	do geats (7,2) V Killed (7) V food (2)
	l. Roots (Anil, Peantits)

Date_/	
f. alive (Angl)	
- avt8(+n11, v	
- I Mad (N) Vali	
- 10 DOVOCK) VIRI	
j. 19 kus (John, Pearrest 8)	
proof by Resolution	
O From (g):	
eats (Anil, Pearduts)	
(a) From (w):	
neods (4,2) V Killed (4) V Food (2)	
put Y = Anol, @ Z = Peantits	
7 earls (Anil, peantits) V Killed (Anil)	V
Food (Reamets)	
(x into E.) 2 person e. Colo bomo : 1 solo . Do	
(B) From (1):	
T food (x) V 1º Kes (John, X).	
put x = Pecencut S	
(V) Y & ON () (X) (
7 Lood Ca) V 1º Kes (John, Reaments	
My polyty - e-Chamber of KA 10	
out rus la	
hercel.	
(30th 19 Kug C John, Peanuts)	
John, 1912es Peaners.	
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The first of the f	

Min MAX Algorithm Algorithm codes-Emport math dot minmax (eur Depth, node Index, masi turn score, larget_ Dapter): ; of (corpeaptn == fanget peptin); meturn score[modeIndeni] of (max Term); refer n max (minimase (cur Depty +1, node Ender # 2, False, score, tanget Depta), minim ces (curpentn+1, no de In lex # 2 71, palse, & core, tooget pepth)) else? return min (minmax (current depth +1, nodeindex & a, True, Score, farget Depth), minmase (cumber +1, node Indus +2+1, true, score, fanget peptin)] Score = [3,5,2,a,12,5, 23, 28] print " me optimed 'lake is", end = ") Printingan (0,0, tral, Score, tree pepter) min (3) 2

	Page
	Alma-Befa Painnia.
	Function minimal (node, depth, iomeraimising plays
	Function miniman (node, departies
	Function minimale (nota):
	il node is a conf node
	if node is a cearf hotenody
	es is madimising playes.
	vest val = - INFINITY
	for each child node; value = minimax (node, depth +1, false
136-3	Value = minimad (no de)
	olpher. veta) vetaval = max(vest val, value)
1411	alpha = mar (alpha, be sal(al)
	it beto L= alpha;
	else:
14 24 3	clse: 1008t val = INFINITY
	tor each child node:
	value = minimax (node, destn+1, there,
	ofpha, beta)
	per val = min (best val, value)
1	
	beta=min(besta, bestval)
	i de voita de alma
	preak /
	yeturn pertial
	minimax (0,0, tree, -INFINITY)