Name: Veuransh shah Reg 12: 221070063 Artificial Intelligence K-SAT Problem : Militagh Maldard Problem : Maldard Problem : Statement ! · input parameters & (no. of literale: mit col The aim of this experiment is to develop a program that can generate random K-SAT The program should generate K-SAT problems by randomly assigning truth values to a set Variables within Clauses. Each clause has a fined length K and consists to gt kt literals which are either the variable or its negation. The program should ensure that each problem generated conforms to? constraints of K-SAT Where each clause is composed of enactly ki liter also organ noitulas ant sex y rot heuristics or approximation for larger K-SAT is a fundamental problem particularly in Computational complexity theory and the Study of algorithms. It is a special case of the Boolean satisfiability problem, where each clause in the boolean formula is limited to at most ki literals. The problem involves determining if there enists an assignment to the boolean variables that satisfies the formula. Sundaram FOR EDUCATIONAL USE

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	Artificial Intelligence
	Algorithm: reldort TAZ-X
	1. Ocienerate K-SAT Problem
- AF .	- input parameters k (no. of literals per clause),
م	of M (number of clause) in (No of Variables).
T.	2=x Procecen start can generate 1000 porq K=S
	1. initialize an empty formula 11000. 2. For each clause up to m:
	2. For each clause up to m:
	- randomly select k distinct variables
oblens	19 TAZ For each variable wandonly decide
set of	is of soulif it it Should: be senegated not you
× 2	and add constructed clause to formula
dividu el	- output: A K- SAT problem trepresented as
V. TRE	eitoped di a listoiofi clauses estis en
	program should enouge that each stables
TA2	2: Solving and K-SAT Problem: between 19 NP-Complete
مدال	Criven the nature of the problem as NP-Complete
V	for K>2, the solution approach will involve
	heuristics or approximation for larger
rticularly	in Computational Complexity theory as
با خلدو.	Architectures it is mutitople to plants
76 27	-use lists to store Clauces to Variables
ره ومرد	- use boolean arrays or dictionaries to
botion,	manage Variable assignments,
panja.	determining it there emists an assign
3A9N	to the bootean variables that colice
391	the formula.
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