SAT solver

Created for classes C++ at MFF UK.

1. Goal

Goal of this semestral project is develop SAT solver in C++ language. Users will have Command line interface to control SAT solver features.

2. Functional description

Application will be able to solve Boolean satisfiability problem. User gives problem rewrited to propositional formula in file. Structure of file will have special format for describe all basic logical operators (negation, AND, OR, implication and equivalation), but app will be able to handle classic Dimacs format as well.

3. User Interface

Command line interface with some basic commands like help, start, etc… Input will be file, which represents description of logical formula in supported format.

4. Functional requirements

I implement some common heuristics like backtracking, unit propagation, DPLL or CDCL algorithm (learning clauses). Another thing will be simple log to inform user about process. And option to show assignment that satisfies formula. Application requires CNF format for using solving algorithm. But there will be implemented converter.

5. Data Input

File contains formula in new format, which will be describe in product manual or Dimacs format.