

## Project 2: Propositional Logic Prover

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The project has been developed using Eclipse IDE. The Main.java is main class for the project and contains the main method. The logic prover works as follows:

- Read input file that contains logic expressions
- Parse file and convert it into CNF
- Negate the conclusion
- Perform resolution by matching complementary literals in clauses
- Return output as satisfiable or unsatisfiable

There is a variable fileName in Main.java class wherein it reads the input file from the local machine. We can change the path on this variable to test for different input files. The program reads expressions in the following format.

- All clauses are in curly braces {,} with each clause separated by a comma.
- The conclusion is separated from the clause with ':' and is in the same line as the clauses.
- An example would be {(A | B), (B -> P), (P & Q)} : (P | Q)

An example file is provided named test.txt in the zip folder. Once the clauses are converted to CNF, they are displayed with conjunctions represented by commas. The following symbols are considered for the logic symbols.

- AND : &
- OR : |
- NOT : -
- IMPLICATION : ->
- EQUIVALENCE : <->

Running the Main.java file should be good as there are no other dependencies apart from the classes itself.