COL703: Logic for Computer Science October 13, 2017

Assignment 2

Problem: Resolution in Propositional Logic

In this assignment you will implement Propositional Resolution to check the satisfiability of sentences in $\mathcal{P}_0$. This assignment builds on Assignment 1 - input and output will be given as in the last assignment, and the work used therein must be used to parse the input sentences into ASTs.

Extend the `AST` signature to include the following datatypes and functions :

```
datatype Lit = P of string
             | N of string

datatype Clause = CLS of (Lit list)
datatype Cnf = CNF of (Clause list)

val makeCnf     : Prop -> Cnf
val resolve     : Cnf -> bool
```

The constructors `P` and `N` signify an atom and its negation, respectively. Together, they define the literals. In essence, you are required to convert the `Prop` to `Cnf`, and apply resolution on the resultant `Cnf` to check satisfiability.