

Assignment 1 : COL703

2014CS50280

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Precedence grammar rule (for OR,AND operator) :-

(suppose AND operator has higher precedence order than OR, then rule would be the following)

```
< expr > ::= < term >
           | < expr > OR < term >
< term > ::= < element >
           | < term > AND < element >
< element > ::= < atom > | (< expr >)
```

Left associativity grammar rule (for OR, AND operator) :-

```
< expr > ::= < element >
           | < expr > OR < element >
           | < expr > AND < element >
                                     {<element> IFF <expr> => in case of right associativity for IFF operator}
< element > ::= < atom > | (< expr >)
```

Now, Whole Grammar Rule :-

Terminal :- AND, FALSE, TRUE, SEMI, EOF, OR, NOT, LPAREN, RPAREN, IF, THEN, ELSE, IFF, ATOM

Non-terminal :- EXP, START, TERM, TERM2, TERM3

Rule :-

START ::= EXP | epsilon (empty)

EXP ::= TERM3 | IF TERM3 THEN EXP
 | TERM3 IFF EXP | IF TERM3 THEN EXP ELSE TERM3

TERM3 ::= TERM2 | TERM3 OR TERM2

TERM2 ::= TERM | TERM2 AND TERM

TERM ::= ATOM | TRUE | FALSE | NOT EXP | (EXP)

Command for running program :-

\$ sml execute.sml <input_filename_txt> <output_file_txt>

