

The way to execute the program is as follows:

- a. First type menu.
- b. The menu will be displayed
 - 1.Check for Tautology, only.
 - 2.Check for Satisfiable, only.
 - 3.Check for Contradiction, only.
 - 4.Check for the Truth value of the Expression.
 - 0.ExitPlease Enter your choice:
- c. Depending on the choice the True or False Tableaux method is carried out in the case of determining whether the truth value of the expression is tautology or satisfiable or contradiction.
- d. Then the program asks the user to input the expression. The rules for inputting the expression are as follows:

AND : \wedge
OR : \vee
NOT : \sim
IMPLICATION : \Rightarrow

So a sample expression would be : $((a \wedge b) \Rightarrow (a \vee b))$

- e. If the user wants to exit he/she has to just type 0 for the menu option.
- f. Then the truth value of the expression is outputted.

NOTE :: All the operators are delimited by a space. So if there is a NOT(\sim) after or before a AND(\wedge), OR(\vee), IMPLICATION(\Rightarrow) it should be delimited by a space.

Some Sample Runs :

Sample Run1

menu.

1.Check for Tautology, only.
2.Check for Satisfiable, only.
3.Check for Contradiction, only.
4.Check for the Truth value of the Expression.
0.Exit
Please Enter your choice:1.

Hmmm...You have chosen to check for TAUTOLOGY. OK!!

Input the Expression:: $((a \wedge b) \vee c) \Rightarrow (a \vee c)$.

The expression is a TAUTOLOGY.

Sample Run 2

menu.

1. Check for Tautology, only.
 2. Check for Satisfiable, only.
 3. Check for Contradiction, only.
 4. Check for the Truth value of the Expression.
 0. Exit
- Please Enter your choice:2.

Wow...It seems you like SATISFIABILITY. OK!!

Input the Expression::(((a->b)\(c\d^(e->a)))->(((b\|e)\|f)->(a\ ~d\|c))).

The expression is SATISFIABLE

Sample Run 3

menu.

1. Check for Tautology, only.
 2. Check for Satisfiable, only.
 3. Check for Contradiction, only.
 4. Check for the Truth value of the Expression.
 0. Exit
- Please Enter your choice:4.

I see...You want to ME to find it. That is a lot of WORK!!

Input the Expression::((a\|b\|c) => (~a \| ~b \| ~c)) \| ((~a \| ~b \| ~c) => (a\|b\|c)).

The expression is CONTRADICTION

Sample Run4

menu.

1. Check for Tautology, only.
 2. Check for Satisfiable, only.
 3. Check for Contradiction, only.
 4. Check for the Truth value of the Expression.
 0. Exit
- Please Enter your choice:0.

You want to EXIT so soon. OKAY!