DISCRETE STRUCTURES
Essay

Programing Language: Python 3.

Programing Requirement:

1. Write function def Infix2Postfix(Infix):
    a. Input: Infix is a string of logical operators (Table 1) and alphabet characters from "A" to "Z" express a logic expression.
    b. Output: Postfix is a string calculated from Infix using Reverse Polish notation.
2. Write function def Postfix2Truthtable(Postfix):
    a. Input: Postfix from (1.)
    b. Output: The truth table from the input logic expression Infix.

* The truth tables should be in alphabet order for initial variables

* Student must not add header to your truth table.

3. Apply your functions on Essay.py (given by Instructors)
4. Change the file name to <StudentID>.py (ex: student 00000123 should make the file 00000123.py)
5. Summit your file to appropriate place on your Google classroom.

Example:

Input:

R|(P&Q)

Output: (Student must not add header)

P	Q	R	P&Q	R|(P&Q)
False	False	False	False	False
False	False	True	False	True
False	True	False	False	False
False	True	True	False	True
True	False	False	False	False
True	False	True	False	True
True	True	False	True	True
True	True	True	True	True

Operator	Meaning
(	Open parenthesis
~	Not
&	And
|	Or
>	Implication
=	Bi implication
)	Close parenthesis

Table 1. Logic Operator with precedence from top to bottom

Report Requirement:

!!The report should be written individually even if you are in a group of 2.

Create a Word or Latex document Using the report template and format your document properly. The content should cover all the following requirements.

1. First chapter introduces your group members (up to 2), work you finished up on each week, how you shared your work (if you have 2 members), and finally introduce what other chapters do.
2. Second chapter includes the theory of Reverse Polish and Basic logic used on calculation of Truth tables.
3. Third chapter should explain your program by doing step by step each function on Test Case 1 and 2 (The codes should be on your report).
4. Fourth chapter shows your experimental result on 5 testcases (run the code on 5 test cases and copy the screen picture **(!!!don't use mobile phone to catch the screen!!!)**).
5. Fifth chapter lists all the references (if any including website)
6. Export your document to PDF format and change the file name to <StudentID>.pdf
7. Summit your file to appropriate place on your Google classroom.