COMP5361 Assignment #2 **Eric Spensieri (ID 26997252)**

Question 1:

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Welcome to Assignment 2A!
Please consult the legend below before continuing

LEGEND
======
Type P1, P2, P3.... etc. for all variables
Type AND to represent a conjunction
Type OR to represent a disjunction
Type NOT to represent a negation
Type THEN to represent an implication
Type WITH to represent a biconditional relation
Add a space between each variable or operator
Insert parentheses () where needed

Example: ((P1 AND P2) OR (P3 AND T)) OR ((NOT P1 AND NOT P3) AND P2)

Please enter your propositional statement: ((P1 AND P2) OR (P3 AND T)) OR ((NOT P1 AND NOT P3) AND P2)
Please input the truth value for P1 using T for True, F for False: T
Please input the truth value for P2 using T for True, F for False: T
Please input the truth value for P3 using T for True, F for False: F

RESULTS
=======
For the entered logical statement: ( ( P1 AND P2 ) OR ( P3 AND T ) ) OR ( ( NOT P1 AND NOT P3 ) AND P2 )
With associated truth values: ( ( T AND T ) OR ( F AND T ) ) OR ( ( NOT T AND NOT F ) AND T )
The result is T

Process finished with exit code 0
```

Statement 2A:

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Welcome to Assignment 2B!
Please consult the legend below before continuing

LEGEND
======
Type P1, P2, P3.... etc. for all variables
Type AND to represent a conjunction
Type OR to represent a disjunction
Type NOT to represent a negation
Type THEN to represent an implication
Type WITH to represent a biconditional relation
Add a space between each variable or operator
Insert parentheses () where needed

Example: ((P1 AND P2) OR (P3 AND T)) OR ((NOT P1 AND NOT P3 ) AND P2)

Please enter your propositional statement: (NOT P1 AND (P1 OR P2)) THEN P2

RESULTS
=======
For the entered logical statement: ( NOT P1 AND ( P1 OR P2 ) ) THEN P2
The resulting truth table is a TAUTOLOGY

Process finished with exit code 0
```

Statement 2B:

```
Welcome to Assignment 2B!
Please consult the legend below before continuing

LEGEND
======
Type P1, P2, P3.... etc. for all variables
Type AND to represent a conjunction
Type OR to represent a disjunction
Type NOT to represent a negation
Type THEN to represent an implication
Type WITH to represent a biconditional relation
Add a space between each variable or operator
Insert parentheses () where needed

Example: ((P1 AND P2) OR (P3 AND T)) OR ((NOT P1 AND NOT P3 ) AND P2)

Please enter your propositional statement: P2 AND (P1 THEN NOT P2) AND (NOT P1 THEN NOT P2)

RESULTS
=======
For the entered logical statement: P2 AND ( P1 THEN NOT P2 ) AND ( NOT P1 THEN NOT P2 )
The resulting truth table is a CONTRADICTION

Process finished with exit code 0
```

Statement 2C:

```
Welcome to Assignment 2B!
Please consult the legend below before continuing

LEGEND
======
Type P1, P2, P3.... etc. for all variables
Type AND to represent a conjunction
Type OR to represent a disjunction
Type NOT to represent a negation
Type THEN to represent an implication
Type WITH to represent a biconditional relation
Add a space between each variable or operator
Insert parentheses () where needed

Example: ((P1 AND P2) OR (P3 AND T)) OR ((NOT P1 AND NOT P3 ) AND P2)

Please enter your propositional statement: (P1 THEN (P2 THEN P3)) THEN ((P1 THEN P2) THEN P3)

RESULTS
=======
For the entered logical statement: ( P1 THEN ( P2 THEN P3 ) ) THEN ( ( P1 THEN P2 ) THEN P3 )
The resulting truth table is a CONTINGENCY

Process finished with exit code 0
```