**CSCE 451 Lab4**

**Due July 29 at 6:00pm**

**Inference experiments, using python**

In this lab we experiment how to use logic to prove inferences and statements.

**Task 1: What we need?**

1. Download the package BasicLogic\_Lab.zip from the BB.
2. Unzip the file, browse the folder. This is the code comes with book (you may saw that before)
3. Find the file “main.py”. We are going to write our code in this file.
4. Find the file “logic.py”. Open the file in your favorite editor and brows the code.

Find some familiar name such as KB, entail … . Read the comments about these keyword/fuctions.

**Task 2: How to build our first KB**

A KB (KnowledgeBase) can be defined in several ways using logic.py APIs. One way is using “**PropKB()**”

class.

Method tell of PropKB object adds statement into your KB.

For example in your python code (main.py) add the code below and run the code:

kb = PropKB()

kb.tell(expr('A | C'))

Don’t worry, if you don’t get anything as output, that’s ok. But if you see the error, we should fix it!

Now let’s complete our knowledge base:

kb = PropKB()

kb.tell(expr('A | C'))

kb.tell(expr('B | ~C'))

print(kb.ask\_if\_true(expr('A | B')))

Check the code for ask\_if\_true function. Observe the result.

For this example, draw the truth table and confirm the output is correct!

Put your truth table in a word document and submit it with your code!

**Task 3: Do some more KB inference.**

Repeat the above exercise, but this time use the statements from lecture slides 18 and 19. Confirm the

result.

**Task 4**: **How to use tt\_entails() function?**

Open logic.py find the fucntion tt\_entails(). Try to use it as a stand-alone function that you send your expressions and query for evaluation. Use expressions in task 2.

Once you finish this tasks zip your code and the word document from task 1, submit it on the BB.