CSci 3501 Lab 11
40 points (See canvas for due date)
Work in pairs

- All lab submissions should be done by canvas. Please be sure to include your group members.

- When working on the lab, please comment your work so that it is clear what the contributions from each person are.

- At the end of the lab each group should submit the results of their in-class work. Please indicate if this is your final submission. Don't forget to answer all the questions below.

- If your submission at the end of the lab time was not final, please submit a final copy before the due time.

Lab overview and goals

The goals of the lab are: To gain experience using jflap with Turing Machines and multi-tape Turing Machines.

Introduction to Turing Machines (30 points)

Carefully go through jflap Turing Machine Tutorial.

- Create a Turing machine that matches each example in the tutorial. Do not load the predefined examples. There are three Turing Machines to produce:

    - $L = \{a^n b^n c^n\}$ without shortcuts.
    - $L = \{a^n b^n c^n d^n\}$ using your previous Turing Machine as a building block.
    - $L = \{a^n b^n c^n\}$ with shortcuts (their example is called TuringAnBnCn2).

- For each Turing machine, you created in the previous part, use fast-run on two or three inputs– take a few screen shots of your results and turn them in as jpegs (or pngs).

Multi-tape Turing Machine (10 points)

Carefully go through jflap Multi-tape Turing Machine Tutorial.

- Create a Turing machine that matches the example in the tutorial (turingAnBnCnMulti.jff)

- Play around with the machine for a bit

What to submit

1. Submit your JFLAP files as attachments, CC your group. Make sure to submit your automata files (as .jff) your input data (as .txt), your pumping lemma examples, and your .jpeg files. Make sure to follow the naming requirements! Make it clear which data refers to which Turing machine.