Project
CpE3110/CS3803
Due date April 10

You are expected to develop a **simulator** to mimic the behavior and analyze the performance of **Booth** (group of 2) and **modified Booth** (group of 3) multiplication techniques. You are free to use any programming language as you are familiar and comfortable with.

Two binary numbers ($4 \leq$ length ≤ 12) are the input to the simulator. For each pair of given test data, your simulator should generate the multiplication result in binary, calculate the execution time of the multiplier modules in term of the number of iterations and the number of additions/subtractions.

Your project report is a **technical paper**. It should be typed and contain:
1) An abstract,
2) An introduction and motivation section,
3) A detail discussion about your simulator and its implementation (for example the structure and implementation of Booth's tables). Make sure to include a pseudo code for your simulator,
4) Simulation results and **detail analysis** of the results, including:
   a. A table showing the operands in binary, multiplication results (both in binary and hexadecimal), Number of iterations and number of additions/subtractions for both Booth and modified Booth,
   b. Two figures, each figure with two overlapping curves (graphs) showing:
      i. The number of additions/subtractions vs. the length of operands for Booth and Modified Booth and
      ii. The number of iterations vs. the length of operands for Booth and Modified Booth,
5) A conclusion section, and
6) A copy of well documented simulator as an appendix

Please note the following:
1) Your report should show and justify that your **simulator operates correctly**.
2) You run your simulator on given test data and generate the results accordingly.
3) Test data will be made available on April 1.
4) You may be asked to demo your simulator and run it for some given input data.
5) Deadline is firm and will not change under any circumstances.