Home Work #1
DUE: 1pm Saturday August 29 (portrait-mode PDF)

☞ Handwritten assignments will not be accepted.

- Write your name at the top of the page.
- Start your assignment with the following text if you can honestly agree with it.
  - I certify that every answer in this assignment is the result of my own work; that I have neither copied off the Internet nor from any one else's work; and I have not shared my answers or attempts at answers with anyone else.

1. Using the pseudo-code syntax introduced in class, write an algorithm EGYPTIANMULTIPLICATION(n_1, n_2) to multiply two positive integers n_1, n_2 using the *Egyptian method of multiplication* we covered in class through an example (see lecture file intro.pdf).

   Assume that the only arithmetic operation available is addition of integers. (Doubling is achieved by addition.) Comparison operators ($>, \geq, <, \leq, =$) are available.

   For the second last operation, finesse the *delete rows* step by calling a separate algorithm FINDROWS which returns an array containing the row numbers that would not be deleted; and use it for the last step.

   You could use two arrays for the two columns with a common index for the rows, i.e., $L[i], R[i]$ would contain the i^{th} entry for the left and right columns.

   Include *meaningful* comments such that a grader can understand your algorithm.

   (Recap: Array indices start at 1; each array has a size attribute which contains the upper index of the valid segment of the array. We saw an example in the lab.).