APPM 2460 Homework Week 3

Submit a published pdf of your script solving the following problem to Canvas by Monday, September 14 at 11:59 p.m. See the 2460 webpage for formatting guidelines.

Definition The binomial coefficient $\binom{n}{k}$ (read "n choose k") is defined as

$$\binom{n}{k} = \frac{n!}{(n-k)!\,k!}$$

where the ! is the factorial symbol (e.g. 5! = 5 * 4 * 3 * 2 * 1 = 120) and n and k are non-negative integers with $n > k$.

(a) Write a script that calculates n choose k **without using Matlab's built-in `factorial` function.** This will involve multiple loops.

- Your script should include `if`-statements that return an error (for example, `disp('Danger Will Robinson!')`) if n is less than k OR if either n or k is negative.

(b) Divide your script into three sections using the command `%%`. Copy and paste your script into each section and run the scripts (i) once in the scenario where everything works, (ii) once where $n < k$ and an error message is returned, and (iii) once where one of n or k is negative and an error message is returned.