ENGG*1410: "Introductory Programming for Engineers", Assignment #4
Loops and Decisions

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Start Date: Week #4, Due Date: Week #5 (Friday, 5:00 PM) in Dropbox

1. Write a program that asks the user to type in two integer values at the terminal. Test these two numbers to determine if the first is evenly divisable by the second, and then display an appropriate message at the terminal.

2. Write a program that accepts two integer values typed in by the user. Display the result of dividing the first integer by the second, to three-decimal-place accuracy. Remember to have the program check for division by zero.

3. Write a program that takes an integer keyed in from the terminal and extracts and displays each digit of the integer in English. So, if the user types in 932, the progrm should display
nine three two
Remember to display "zero" if the user types in just a 0. (Note: this exercise is a hard one!)

4. Write a program to generate and display a table of n and n^2, for integer values of n ranging from 1 to 20. Be certain to print appropriate column headings.

5. The factorial of an integer n, written $n!$, is the product of the conescutive integers 1 through n. For example, 5 factorial is calculated as:
$5! = 5x4x3x2x1 = 120$ Write a program to generate and print a table of the first 10 factorials.

6. Write a program that calculates the sum of the digits of an integer. For example, the sum of the digits of the number 2155 is 2 + 1 + 5 + 5 (i.e., 13). The program should accept any arbitrary integer typed in by the user.

7. Write a program that draws a triangle.

   - The program will first prompt the user for the height of the triangle.
   - If the line is odd it will print a star "*"
   - else if the line is even it will print a hash "#"

   Below is an example with height of 5

```
*
##
***
####
*****
```