# Program_04_2

## Requirements

Write a script that will load raw grade data from **RawGrades.txt** and calculate the letter grade received, based on a curve algorithm.

- Load grade data from **RawGrades.txt**
- Compute the total numerical grade based on the following formula

HW 20%, Tests 35%, Final Exam 45% rounded to the **nearest** whole number

- Compute a letter grade based on the following curve

A >= Mean Numerical Average + 1.5* Standard Dev of Numerical Averages

B >= mean + 0.5*Stdev and less than mean + 1.5*Stdev

C >= mean - 0.5*Stdev  and less than mean + 0.5*Stdev

D >= mean - 1.5*Stdev  and less than mean - 0.5*Stdev

F <  mean - 1.5*Stdev

- Output should print to the command window
- Output should print to the file **Tutorial_04_1_Data.xlsx** sheet **Coins** in the appropriate cell array to fill the fields for quarters, dimes, nickels, pennies, and total number of coins.

## Program

In the code block below, create your program, editing the existing text as necessary.

**Tip:** You will likely use the following functions which will help compute the values needed.

- floor()  - Rounds down to the nearest integer
- rem()  - Calculates the remainder from a division

**Note:** If you are using Octave then you will need to create a separate script file, save that separate file as the name **Program_02_01**. It will not conflict with this file of the same name since the extension will be different.

```
% Filename: Program_04_2
% Author:   Geoff Berl
% Assisted by: No one

% Program Description:
% The purpose of this program is to read raw grades from the file RawGrades.txt
% and to compute the numerical average and the letter grade for each student.

% The results will be displayed in  the file:
% FinalGrades.txt in tabular form with table headings.

% Clear the command window and all variables
clc        % clc clears the contents of the command window
```

```
clear      % clear, clears all defined variables from the Matlab workspace

% Output of the title and author to the command window.



% Don't forget to close the file
```

### Example Output

Your program output should match the following, be sure to check that your values are correctly stored in the Excel file.

```
Output for Program_04_2 written by Geoff Berl.


The calculated grade values have  been written to FinalGrades.txt
```

The file output should match the following. Note, this is only the first few rows, there should be as many rows of grades in the output file as there are in the raw grades input file.

```
Final Grade Report for ENR 261

Mean Numerical Grade =  72.1 , Standard Deviation = 14.2

STUDENT #    HW AVE      TEST AVE    FINAL EXAM      NUMERICAL AVE    LETTER GRADE
 10101         78          59          36              52               D
 10102         88          73          79              79               C
 10103         88          91          90              90               B
 10104         76          20          45              42               F
 10105         83          72          78              77               C
 10106         95          92          91              92               B
```