Unit 3 - Module 1: Introduction to MATLAB

Chapter 1: Getting Started with MATLAB

1. Problem 1: Obtaining the Minimum Value
   - You are given a vector `x = [2, 4, 6, 8, 10]`.
   - Write a MATLAB script to find the minimum value of `x`.
   - Code:
     ```matlab
     x = [2, 4, 6, 8, 10];
     min_value = min(x);
     disp(min_value);  
     ```

2. Problem 2: Vector Summation
   - Write a MATLAB function to calculate the sum of all elements in a vector.
   - Code:
     ```matlab
     function sum_value = vec_sum(vec)
         sum_value = sum(vec);
     end
     ```
   - Test:
     ```matlab
     vec = [1, 2, 3, 4, 5];
     result = vec_sum(vec);
     disp(result);  
     ```

3. Problem 3: Matrix Problem
   - Consider the matrix `A` given below.
     ```matlab
     A = 
     2 3 4 
     5 6 7 
     8 9 10 
     ```
   - Write a MATLAB script to:
     a) Find the sum of all elements in `A`.
     b) Find the maximum value in `A`.
     c) Find the average of all elements in `A`.
     ```matlab
     A = [2 3 4; 5 6 7; 8 9 10];
     sum_A = sum(A(:));
     max_A = max(A(:));
     avg_A = mean(A(:));
     disp(sum_A);
     disp(max_A);
     disp(avg_A);
     ```

4. Problem 4: Plotting the data
   - Define the function `y = x^(-2)`, where `x` is a vector of values.
   - Plot the function using a line graph.
   ```matlab
   x = linspace(1, 10, 100);
   y = x.^(-2);
   plot(x, y);
   ```

- Due on 2020-01-12, 11.59 PM ET