Assignment 1 Pseudocode

Matrix.java

Initialize public class Matrix

Initialize private var

Private int numRows

Private int numCols

Private double[][] data

Initialize the constructor with two parameters only

Public Matrix(int r, int c), r is row, c is column

Data[][] will be filled with r and c as its rows and columns (data = new double[r][c])

Initialize another matrix constructor with r, c and “double[] linArr”

Public Matrix(int r, int c, double[]linArr)

Use a two while loops (nest second one) to iterate through the rows and cols of data

* Keep a counter to track if the spaces data has for variables (r \* c) exceeds the amount of elements in linArr
  + Counter should increment in the nested while loop before assigning data with the new cell to avoid an indexing error
  + Declare a new variable to store the length of linArr
  + Perform a check every iteration
  + If count > elements, fill the space with 0.000

Public int getNumRows()

Return numRows

Public int getNumCols()

Return numCols

Public double[][] getData()

Return data

Be sure to truncate the cells to 3 decimals points each

Public double getElement(r, c)

Return data[r][c]

Initialize Public void Transpose()

* Create an interim array to store all the values of data in a single array (much like linArr)
  + Potentially create a private method to iterate through our array
* Utilize the row and column getters to swap their values. Use an interim variable to store one of the values while swapping
* Run a nested for loop to repopulate data with new rows and cols

Initialize MatrixMultiply(double scalar)

Make a copy of the matrix