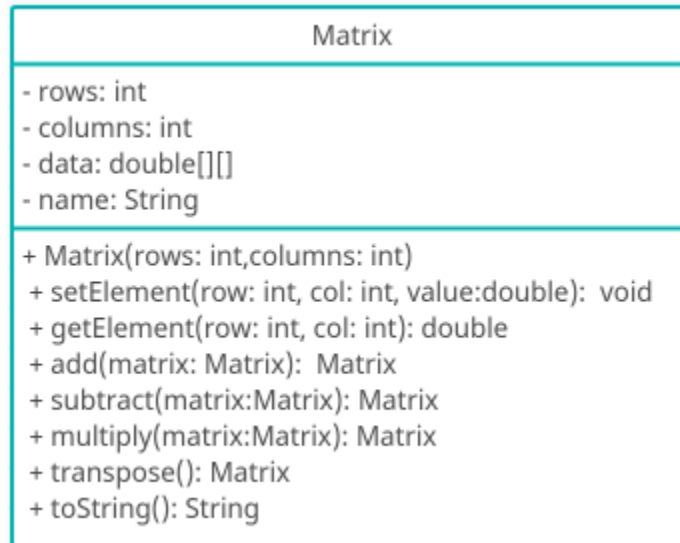


23-813-0207: Lab 4 - Java Programming Lab

Lab exercise - 1

Date: 1/2/2024



1. Create a Java class "Matrix" with data fields and methods as shown in the UML Class diagram. Write a main function that reads the number of rows and columns from the user to create an object of the class and demonstrate each of its methods.
2. Write a program to create a Matrix object by reading input as command-line arguments. The input shall be space-separated values as no. of rows and no. of columns followed by all elements in row-major format.
3. Write a menu-driven program that repeatedly reads and carries out the following operations on a matrix object.
 - a. Create an object of the Matrix class by prompting the user for input, and storing it in the variable *matx* . You may replace the previous object with the new one if one already exists.
 - b. Print the values of the matrix in a proper format.
 - c. Print the column sum for any given column.
 - d. Print the row sum for any given row.
 - e. Print the average of all the values in the matrix
 - f. Check if the matrix is diagonal and Print YES or NO.
 - g. Exit the program after printing "Thank You!"
4. Add a no-argument constructor Matrix() that creates a matrix of random size (between 1 and 10) and populated with random values between 1 to 1000. Demonstrate.
5. Add data field *UniqueID* that stores a unique value for each object created. Hint: Keep count of no. of objects created and use it to generate the *UniqueID*.