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Script started on 2021-02-05 17:05:05-0600
l_ladios@ares:~$ MatrixLab.info
MatrixLab.info: command not found
l_ladios@ares:~$ cat MatrixLab.info
 /*************************************************************************

     *                                                                     *

     *  NAME:  Leia Ladios                         CLASS:  CSC121-W01      *

     *                                                                     *

     *  Assignment: Lab P-3.36 Java                Level:   3              *

     *                                                                     *

     *  Description:                                                       *

     *                                                                     *

        P - 3.36: LinkedList class and Main driver programs.

                          Matrix class that adds and multiplies arbitrary

                          2D arrats of integers.



                          Thank you.

     *                                                                     *

    ************************************************************************/




l_ladios@ares:~$
l_ladios@ares:~$ cat Matrix.java
import java.util.Scanner;

public class Matrix {

        private int[][] nums;
        private int rows, cols;


        public Matrix(int[][] inputMatrix) {

                this.nums = inputMatrix;
                rows = nums.length;
                cols = nums[0].length;
        }

        public int getRows() {
                return rows;
        }

        public int getCols() {
                return cols;
        }

        public int[][] getArray(){
                return nums;
        }
        public Matrix add(Matrix mat) {

                if(mat.getRows() != this.getRows() || mat.getCols() != this.getCols
                        return null;
                }

                int[][] addedMatrix = new int[mat.getRows()][mat.getCols()];
                for(int i = 0; i < mat.getRows(); i++) {
                        for(int j = 0; j < mat.getCols(); j++) {
                                addedMatrix[i][j] = this.nums[i][j] + mat.getArray
                        }
                }
                return new Matrix(addedMatrix);
        }

        public Matrix multiply(Matrix mat) {
                if(mat.getCols() != this.getRows() ) {
                        return null;
                }

                int[][] multipliedMatrix = new int[mat.getRows()][this.getCols()];
                for(int i = 0; i < mat.getRows(); i++) {
                        for(int k = 0; k < this.getCols(); k++) {
                                for(int m = 0; m < mat.getRows(); m++) {
                                        multipliedMatrix[i][k] += (this.nums[i][m]
                                }
                        }
                }
                return new Matrix(multipliedMatrix);
        }

        public String toString() {
                String buildString = "";
                for(int i = 0; i < nums.length; i++) {
                        buildString += "{ ";
                        for(int j = 0; j < nums[0].length; j++) {
                                buildString += nums[i][j] + " " ;
                        }
                        buildString += "}";
                        buildString += "\n";
```

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                }
                return buildString;
        }
}
l_ladios@ares:~$ javac Matrix.java
l_ladios@ares:~$
l_ladios@ares:~$ cat MatrixMain.java
import java.util.Scanner;

// Main method
public class MatrixMain {
        public static void main(String args[]) {


                Scanner in = new Scanner(System.in);

                System.out.println("Make your first matrix!");
                System.out.print("Rows: ");
                int rows = in.nextInt();

                System.out.print("Columns: ");
                int cols = in.nextInt();

                System.out.println("Enter the values you would like to have in you

                int[][] values = new int[rows][cols];
                for(int i = 0; i < rows; i++) {
                        for(int j = 0; j < cols; j++) {
                                values [i][j] = in.nextInt();
                        }
                }

                Matrix first = new Matrix (values);

                System.out.println("Make another Matrix to Add/Multiply!");

                System.out.print("Rows: ");
                int rowsTwo = in.nextInt();

                System.out.print("Columns: ");
                int colsTwo = in.nextInt();

                System.out.println("Enter the values you would like to have in you

                int[][] valuesTwo = new int[rowsTwo][colsTwo];
                for(int i = 0; i < rowsTwo; i++) {
                        for(int j = 0; j < colsTwo; j++) {
                                valuesTwo[i][j] = in.nextInt();
                        }

                }

                Matrix second = new Matrix (valuesTwo);

                System.out.println("Actions: 1) Add Matrices \n\t 2) Multiply Matr
                int choice = in.nextInt();

                if(choice == 1) {
                        Matrix status  = first.add(second);

                        if(status == null) {
                                System.out.println("You can't add these matrices. I
                        }
                        else{
                                System.out.println("\n" + status);
                        }

                }
                else if(choice == 2) {
                        Matrix status  = first.multiply(second);

                        if(status == null) {
                                System.out.println("You can't multiply these matri
                        }
                        else{
                                System.out.println("\n" + status);
                        }
                }
                else{{
                        System.out.println("You entered an invalid choice. Please
                }



        }

}
}



l_ladios@ares:~$ javac MatrixMain.java
l_ladios@ares:~$ java MatrixMain
Make your first matrix!
Rows: 2
Columns: 2
Enter the values you would like to have in your matrix:
1
2
3
4
Make another Matrix to Add/Multiply!
Rows: 2
Columns: 2
Enter the values you would like to have in your matrix:
1
2
3
```

```
4
Actions: 1) Add Matrices
         2) Multiply Matrices (Please Enter 1 or 2)
2

{ 7 10 }
{ 15 22 }

l_ladios@ares:~$ exit
exit

Script done on 2021-02-05 17:06:34-0600
```