13016209 Object-Oriented Concepts and Programming

Lab 12

Start your program with your information using the following format:

/*

ID:

Name:

Lab No:

Question No:

Date:

*/

1. Modify the Matrix Class in Lab 7.2, this class must overload the + and * operators for matrix addition and multiplication respectively. The operator << needs to be overloaded to display the value of the matrix row by row, for example if the matrix is 2X3 the matrix data must be showing in the following format:
   5 6 7
   4 8 9

   The operator >> needs to be overloaded to ask user to enter the values to the matrix, for example if the matrix is 2X3 the input must be in the form:
   index[1][1] 5
   index[1][2] 6
   index[1][3] 7
   index[2][1] 4
   index[2][2] 8
   index[2][3] 9

An exception class must be provided to throw the exception when the dimensions of the two matrices are not matched for the specified operation.

The example output is as follow:

1.Matrix Addition

2.Matrix Multiplication

0.Exit

Your choice: 2

Enter rows and cols for Matrix A separated By space 2 3

Enter rows and cols for Matrix B separated By space 3 2

A

index[1][1] 5

index[1][2] 6

index[1][3] 7

index[2][1] 4

index[2][2] 8

index[2][3] 9

B

index[1][1] 6

index[1][2] 4

index[2][1] 5

index[2][2] 7

index[3][1] 1

index[3][2] 1

A

5 6 7

4 8 9

B

6 4

5 7

1 1

C

67 69

73 81

The program to do the matrix addition or multiplication

This program will ask you the information of Matrix A and B and show the result in Matrix C

1.Matrix Addition

2.Matrix Multiplication

0.Exit

Your choice: 1

Enter rows and cols for Matrix A separated By space 2 2

Enter rows and cols for Matrix B separated By space 2 2

A

index[1][1] 4

index[1][2] 5

index[2][1] 6

index[2][2] 7

B

index[1][1]

1

index[1][2] 2

index[2][1] 3

index[2][2] 4

A

4 5

6 7

B

1 2

3 4

```
----------------------
C
5 7
9 11
----------------------
The program to do the matrix addition or multiplication
This program will ask you the information of Matrix A and B and show the result in Matrix C
1.Matrix Addition
2.Matrix Multiplication
0.Exit
Your choice: 1
Enter rows and cols for Matrix A separated By space 2 3
Enter rows and cols for Matrix B separated By space 2 2
A
index[1][1] 1
index[1][2] 2
index[1][3] 3
index[2][1] 4
index[2][2] 5
index[2][3] 6
B
index[1][1] 1
index[1][2] 2
index[2][1] 3
index[2][2] 4
Matrix dimension mismatch for the operation
```

The program to do the matrix addition or multiplication

This program will ask you the information of Matrix A and B and show the result in Matrix C

1.Matrix Addition

2.Matrix Multiplication

0.Exit

Your choice: 2

Enter rows and cols for Matrix A separated By space 2 3

Enter rows and cols for Matrix B separated By space 2 3

A

index[1][1] 1

index[1][2] 2

index[1][3] 3

index[2][1] 4

index[2][2] 5

index[2][3] 6

B

index[1][1] 4

index[1][2] 5

index[1][3] 6

index[2][1] 7

index[2][2] 8

index[2][3] 9

Matrix dimension mismatch for the operation

The program to do the matrix addition or multiplication

This program will ask you the information of Matrix A and B and show the result in Matrix C

1.Matrix Addition

2.Matrix Multiplication

0.Exit

Your choice: 0

Good Bye