Name: Faith Lee

Student ID: T00673968 Course: COMP 3411

Assignment 3

Write Java Code to perform multithreaded matrix multiplication.

Code structure:

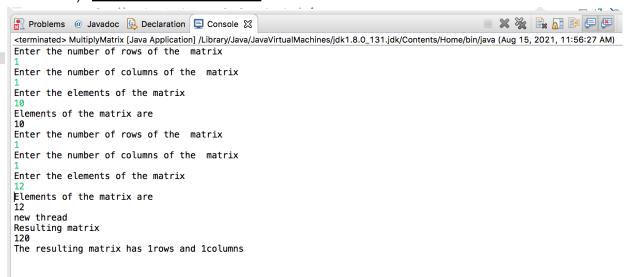
- Multiplier class with the Runnable interface : implements matrix multiplication by assigning a thread to each resulting element
- MultiplyMatrix : class to take in two matrices and prints out resulting matrix
- Input matrices are not commutable
 le. we input a 1 by 2 matrix and a 1 x 3 matrix

2. When matrices are commutable

a) ie. a 3 x 2 matrix with a 2x2 matrix

```
Problems @ Javadoc 🖳 Declaration 📮 Console 🛭
<terminated> MultiplyMatrix [Java Application] /Library/Java/JavaVirtualMachines/jdk1.8.0_131.jdk/Contents/Home/bin/java (Aug 15, 2021, 11:54:04 AM)
Enter the number of rows of the matrix
Enter the number of columns of the matrix
Enter the elements of the matrix
Elements of the matrix are
1 1
1 1
1 1
Enter the number of rows of the matrix
Enter the number of columns of the matrix
Enter the elements of the matrix
Elements of the matrix are 1 1 1
new thread
Resulting matrix
2
2
2
2
2
2
The resulting matrix has 3rows and 2columns
```

b) 1x1 matrix with 1x1 matrix



c) 5 x 5 matrix with 5 by 1 matrix (had two take two screen captures)

```
Problems @ Javadoc 🗓 Declaration 📃 Console 🛚
              <terminated> MultiplyMatrix [Java Application] /Library/Java/JavaVirtualMachines/jdk1.8.0_131.jdk/Contents/Home/bin/java (Aug 15 processes)
             Enter the number of rows of the matrix
             Enter the number of columns of the matrix
             Enter the elements of the matrix
.0_131]]
              11222223333344
              4
4
              4
5
5
5
5
5
             Elements of the matrix are
             1
2
3
                1 1 1 1
2 2 2 2
3 3 3 3
                        4
                           4
                5 5 5 5
              Enter the number of rows of the matrix
             Enter the number of columns of the matrix
             Enter the elements of the matrix
             1
```

```
<terminated> MultiplyMatrix [Java Application] /Library
4
4
4
4
5
5
5
Elements of the matrix are
1 1 1 1 1
2 2 2 2 2
3 3 3 3 3 3
4 4 4 4 4 4
5 5 5 5 5
Enter the number of rows of the matrix
 5
Enter the number of columns of the matrix
 Enter the elements of the matrix
Elements of the matrix are
1
1
1
 new thread
new thread
new thread
new thread
new thread
Resulting matrix
Resulting matrix
5
10
15
20
25
The resulting matrix has 5rows and 1columns
```