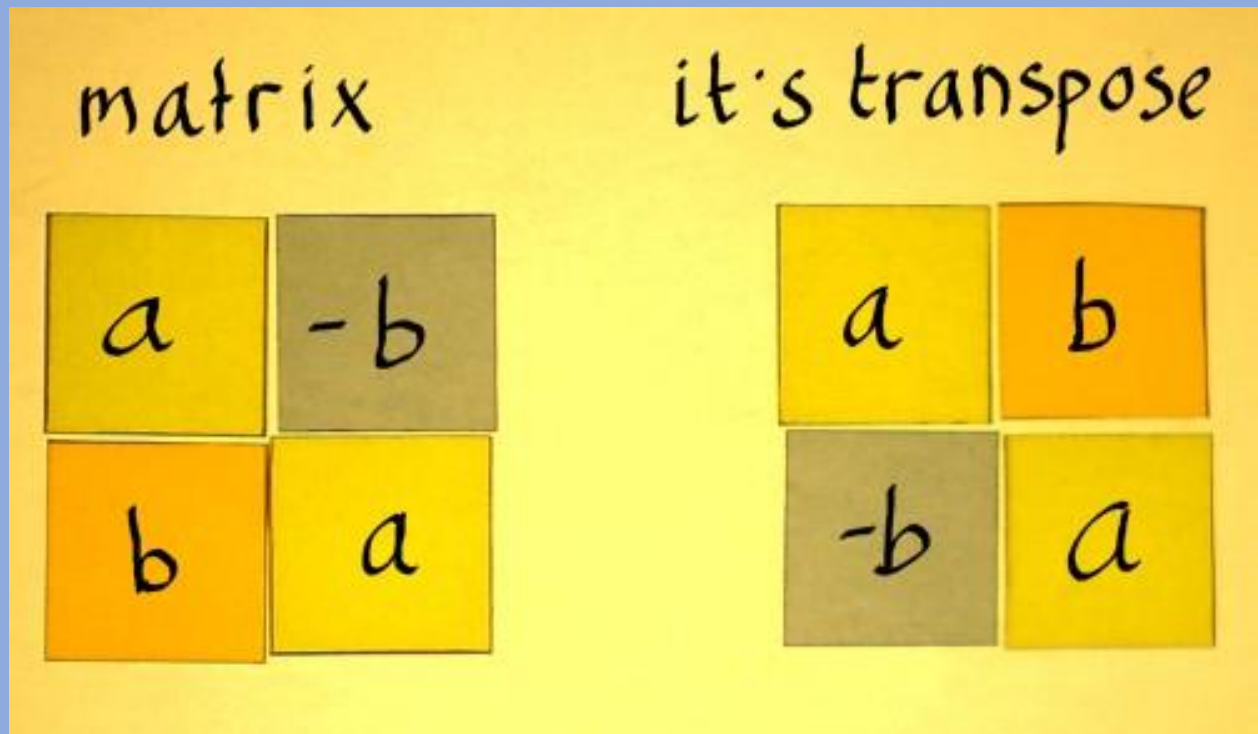# Homework #2



*ECE 330 – Transpose of a Matrix Report*

Spring 2021

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Course: Software Design

# Table of Contents

# List of Figures

# Static Matrix Output Results (Double Precision Values)

```
[(base) clarizza@MacBook-Pro ECE-330-SoftwareDesign-HW-2 % ./run_staticMat
Hello, please enter the total # of rows and columns 1 at a time:
4
3
Please, input the elements for your matrix:
(Row[0],Col[0]):
1.3
(Row[0],Col[1]):
4.5
(Row[0],Col[2]):
8.7
(Row[1],Col[0]):
9.2
(Row[1],Col[1]):
0.44
(Row[1],Col[2]):
2.976
(Row[2],Col[0]):
3.4
(Row[2],Col[1]):
5
(Row[2],Col[2]):
8
(Row[3],Col[0]):
1
(Row[3],Col[1]):
0
(Row[3],Col[2]):
3.87
You have entered the following matrix:


    1.300    4.500    8.700
    9.200    0.440    2.976
    3.400    5.000    8.000
    1.000    0.000    3.870
Your transposed matrix is:

    1.300    9.200    3.400    1.000
    4.500    0.440    5.000    0.000
    8.700    2.976    8.000    3.870
```

*Figure 1. Static (Double Input Values)*

# Dynamic Matrix Output Results (Double Precision Values)

```
(base) clarizza@MacBook-Pro Dynamic % make
[gcc -c mainDynamic.c
cc    -c -o matrix_dynamic.o matrix_dynamic.c
gcc  mainDynamic.o matrix_dynamic.o -o run_dynamicMat
(base) clarizza@MacBook-Pro Dynamic % ./run_dynamicMat
[Hi, please enter # of rows and # of columns 1 at a time:
3
4
Please, input the elements for your matrix:
(Row[0],Col[0]):
1.2
(Row[0],Col[1]):
3.5
(Row[0],Col[2]):
3.2
(Row[0],Col[3]):
6.5
(Row[1],Col[0]):
7
(Row[1],Col[1]):
9
(Row[1],Col[2]):
0
(Row[1],Col[3]):
1.4
(Row[2],Col[0]):
7.66
(Row[2],Col[1]):
3
(Row[2],Col[2]):
2
(Row[2],Col[3]):
7.9
You have entered the following matrix:


   1.200    3.500    3.200    6.500
   7.000    9.000    0.000    1.400
   7.660    3.000    2.000    7.900
Your transposed matrix is:

   1.200    7.000    7.660
   3.500    9.000    3.000
   3.200    0.000    2.000
   6.500    1.400    7.900
(base) clarizza@MacBook-Pro Dynamic % ▊
```

*Figure 2. Dynamic (Double Input Values)*

# Static Matrix Output Results (Integer Values)

```
[(base) clarizza@MacBook-Pro ECE-330-SoftwareDesign-HW-2 % ./run_staticMat
Hello, please enter the total # of rows and columns 1 at a time:
2
3
Please, input the elements for your matrix:
(Row[0],Col[0]):
1
(Row[0],Col[1]):
4
(Row[0],Col[2]):
3
(Row[1],Col[0]):
6
(Row[1],Col[1]):
4
(Row[1],Col[2]):
9
You have entered the following matrix:


   1.000    4.000    3.000
   6.000    4.000    9.000
Your transposed matrix is:

   1.000    6.000
   4.000    4.000
   3.000    9.000
```

*Figure 3. Static (Integer Input Values)*

# Dynamic Matrix Output Results (Integer Values)

```
[(base) clarizza@MacBook-Pro Dynamic % ./run_dynamicMat
Hi, please enter # of rows and # of columns 1 at a time:
5
2
Please, input the elements for your matrix:
(Row[0],Col[0]):
1
(Row[0],Col[1]):
2
(Row[1],Col[0]):
5
(Row[1],Col[1]):
3
(Row[2],Col[0]):
6
(Row[2],Col[1]):
7
(Row[3],Col[0]):
9
(Row[3],Col[1]):
7
(Row[4],Col[0]):
0
(Row[4],Col[1]):
8
You have entered the following matrix:


   1.000    2.000
   5.000    3.000
   6.000    7.000
   9.000    7.000
   0.000    8.000
Your transposed matrix is:

   1.000    5.000    6.000    9.000    0.000
   2.000    3.000    7.000    7.000    8.000
```

*Figure 4. Dynamic (Integer Input Values)*

# **Static Matrix *test_static.c* Output**

```
[(base) clarizza@MacBook-Pro ECE-330-SoftwareDesign-HW-2 % gcc test_static.c matrix_static.c
[(base) clarizza@MacBook-Pro ECE-330-SoftwareDesign-HW-2 % ./a.out

[ Matrix a:

    1.000    2.000
    3.000    4.000

 Matrix b:

    1.000    2.000
    3.000    4.000

 a+b:

    2.000    4.000
    6.000    8.000
```

*Figure 5. test_static.c*

# Dynamic Matrix *test_dynamic.c* Output

```
[(base) clarizza@MacBook-Pro Dynamic % gcc test_dynamic.c matrix_dynamic.c
[(base) clarizza@MacBook-Pro Dynamic % ./a.out

 Matrix a:

    1.000    2.000
    3.000    4.000

 Matrix b:

    1.000    2.000
    3.000    4.000

 a+b:

    2.000    4.000
    6.000    8.000
```

*Figure 6. test_dynamic.c*