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# PROJECT REPORT

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# Matrix Calculator

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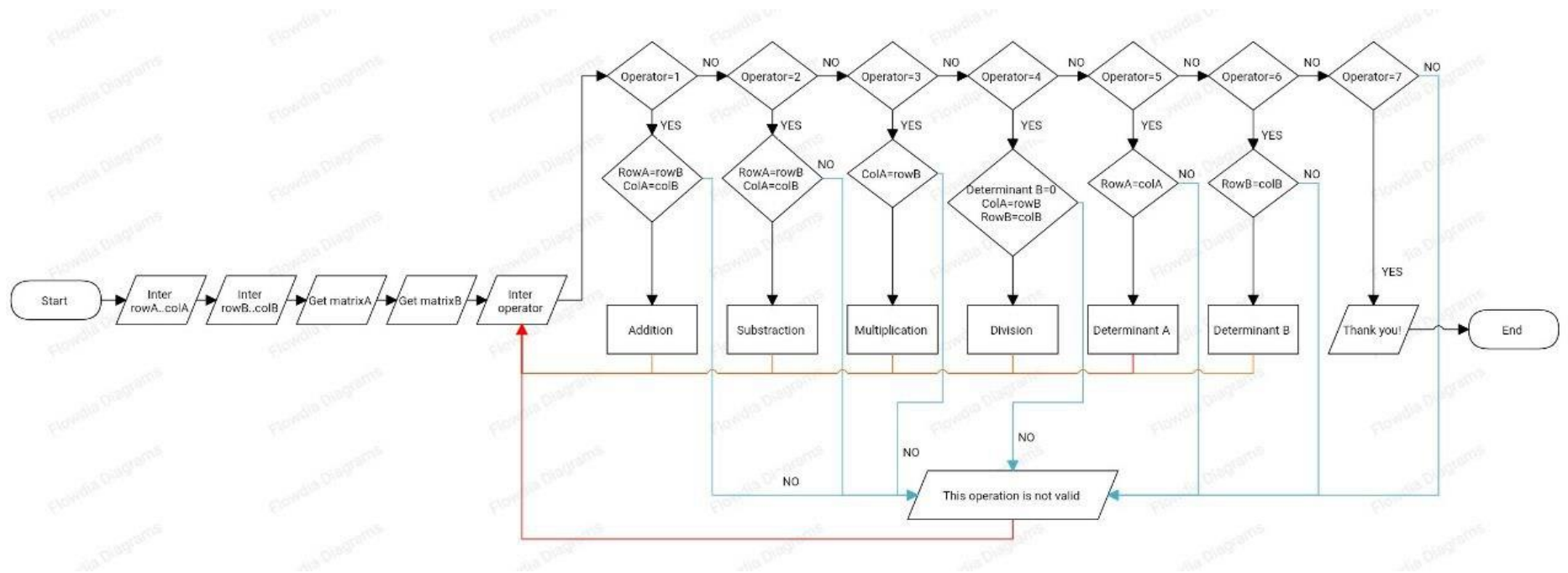
ID : 2001377

SEC : 13

Group : 2

Spring 2022....

The main required is to do some operations on matrices and there some examples for my  
program while running....



*A simple flowchart for the program*

## 1<sup>st</sup> example:-

```
"D:\code blocks\last code\bin\Debug\last code.exe"
Please enter dimensions of Matrix A:
10 10
Please enter dimensions of Matrix B:
10 10
Please enter values of Matrix A:
7 5 0 4 0 0 3 4 0 8
0 9 8 5 8 0 1 2 4 0
7 6 9 8 1 5 0 5 0 9
9 1 4 2 7 5 1 4 6 2
4 8 6 7 9 9 4 1 5 3
7 3 7 3 0 6 4 6 7 5
1 7 9 9 5 4 6 6 4 2
2 2 1 0 4 1 0 4 0 4
8 3 1 5 4 8 8 4 3 3
2 4 3 7 1 3 0 7 9 5
Please enter values of Matrix B:
6 3 0 6 3 5 9 3 7 3
9 8 2 8 8 1 0 9 8 9
5 5 6 2 8 1 8 4 9 6
9 2 7 7 5 8 8 3 3 4
8 8 7 5 0 8 8 5 8 9
9 5 4 8 8 7 2 6 0 2
8 8 0 4 5 8 2 8 5 0
9 6 0 3 4 8 0 8 9 0
8 5 6 8 4 4 6 1 4 0
3 5 9 8 0 2 4 3 8 1
Please choose operation type(1: A+B, 2: A-B, 3: AxB, 4: A*inverse(B), 5: |A|, 6: |B|, 7: quit):
1
13      8      0      10      3      5      12      7      7      11
9       17     10     13     16      1      1      11     12      9
12      11     15     10      9      6      8      9      9     15
18      3      11      9     12     13      9      7      9      6
12      16     13     12      9     17     12      6     13     12
16      8      11     11      8     13      6     12      7      7
9       15      9     13     10     12      8     14      9      2
11      8      1      3      8      9      0     12      9      4
16      8      7     13      8     12     14      5      7      3
5       9      12     15      1      5      4     10     17      6
Please choose operation type(1: A+B, 2: A-B, 3: AxB, 4: A*inverse(B), 5: |A|, 6: |B|, 7: quit):
2
1       2      0      -2      -3      -5      -6      1      -7      5
-9      1      6      -3      0      -1      1      -7     -4     -9
2       1      3      6      -7      4      -8      1     -9      3
0      -1     -3     -5      2     -3     -7      1      3     -2
-4      0     -1      2      9      1     -4     -4     -3     -6
-2      -2      3     -5     -8     -1      2      0      7      3
-7      -1      9      5      0     -4      4     -2     -1      2
-7      -4      1     -3      0     -7      0     -4     -9      4
0      -2     -5     -3      0      4      2      3     -1      3
-1     -1     -6     -1      1      1     -4      4      1      4
Please choose operation type(1: A+B, 2: A-B, 3: AxB, 4: A*inverse(B), 5: |A|, 6: |B|, 7: quit):
3
```

"D:\code blocks\last code\bin\Debug\last code.exe"

```
-2      -2      3      -5      -8      -1      2      0      7      3
-7      -1      9      5      0      -4      4      -2      -1      2
-7      -4      1      -3      0      -7      0      -4      -9      4
0       -2      -5      -3      0      4      2      3      -1      3
-1      -1      -6      -1      1      1      -4      4      1      4
```

Please choose operation type(1: A+B, 2: A-B, 3: AxB, 4: A\*inverse(B), 5: |A|, 6: |B|, 7: quit):

```
3
207      157      110      198      112      144      133      158      216      90
288      226      181      205      190      161      194      196      262      221
338      238      230      296      241      215      253      237      327      189
300      212      163      239      162      225      241      175      250      143
432      315      257      349      275      291      280      282      312      250
342      244      180      279      236      229      225      223      287      119
411      296      224      290      278      277      245      284      327      211
124      108      78      102      54      92      76      98      139      72
362      253      152      285      213      286      214      246      248      132
311      202      193      261      185      204      186      178      241      108
```

Please choose operation type(1: A+B, 2: A-B, 3: AxB, 4: A\*inverse(B), 5: |A|, 6: |B|, 7: quit):

```
4
-2      3      -1      4      -1      -5      5      -3      1      0
1       -2      2      -6      2      6      -4      2      0      0
-1      1      0      0      1      0      0      0      0      0
0       0      0      1      0      0      -1      1      0      0
4       -5      3      -11      4      12      -10      5      0      0
-1      1      -1      4      -1      -3      3      -1      0      0
1       -1      1      -1      0      2      0      0      -1      1
0       0      0      1      0      0      1      0      0      0
0       0      0      1      0      -1      1      0      0      0
1       0      0      -2      1      2      -2      1      -1      1
```

Please choose operation type(1: A+B, 2: A-B, 3: AxB, 4: A\*inverse(B), 5: |A|, 6: |B|, 7: quit):

```
5
-241404593
```

Please choose operation type(1: A+B, 2: A-B, 3: AxB, 4: A\*inverse(B), 5: |A|, 6: |B|, 7: quit):

```
6
-152101591
```

Please choose operation type(1: A+B, 2: A-B, 3: AxB, 4: A\*inverse(B), 5: |A|, 6: |B|, 7: quit):

```
7
Thank you!
```

Process returned 0 (0x0) execution time : 469.232 s  
Press any key to continue.

## 2<sup>nd</sup> example:-

```
"D:\code blocks\last code\bin\Debug\last code.exe"
Please enter dimensions of Matrix A:
5 4
Please enter dimensions of Matrix B:
4 5
Please enter values of Matrix A:
1 2 3 1
9 6 3 0
8 7 9 2
1 2 3 5
1 2 5 6
Please enter values of Matrix B:
1 2 3 4 5
6 3 2 5 0
9 6 3 1 4
7 8 9 4 5
Please choose operation type(1: A+B, 2: A-B, 3: AxB, 4: A*inverse(B), 5: |A|, 6: |B|, 7: quit):
1
The operation you chose is invalid for the given matrices.
Please choose operation type(1: A+B, 2: A-B, 3: AxB, 4: A*inverse(B), 5: |A|, 6: |B|, 7: quit):
2
The operation you chose is invalid for the given matrices.
Please choose operation type(1: A+B, 2: A-B, 3: AxB, 4: A*inverse(B), 5: |A|, 6: |B|, 7: quit):
3
47      34      25      21      22
72      54      48      69      57
145     107     83      84      86
75      66      61      37      42
100     86      76      43      55
Please choose operation type(1: A+B, 2: A-B, 3: AxB, 4: A*inverse(B), 5: |A|, 6: |B|, 7: quit):
4
The operation you chose is invalid for the given matrices.
Please choose operation type(1: A+B, 2: A-B, 3: AxB, 4: A*inverse(B), 5: |A|, 6: |B|, 7: quit):
5
The operation you chose is invalid for the given matrices.
Please choose operation type(1: A+B, 2: A-B, 3: AxB, 4: A*inverse(B), 5: |A|, 6: |B|, 7: quit):
6
The operation you chose is invalid for the given matrices.
Please choose operation type(1: A+B, 2: A-B, 3: AxB, 4: A*inverse(B), 5: |A|, 6: |B|, 7: quit):
7
Thank you!
Process returned 0 (0x0)   execution time : 54.962 s
Press any key to continue
```

### 3<sup>rd</sup> example:-

```
"D:\code blocks\last code\bin\Debug\last code.exe"
Please enter dimensions of Matrix A:
2
3
Please enter dimensions of Matrix B:
2
3
Please enter values of Matrix A:
4 5 6
9 8 7
Please enter values of Matrix B:
3 6 5
9 6 1
Please choose operation type(1: A+B, 2: A-B, 3: AxB, 4: A*inverse(B), 5: |A|, 6: |B|, 7: quit):
1
7      11      11
18     14      8
Please choose operation type(1: A+B, 2: A-B, 3: AxB, 4: A*inverse(B), 5: |A|, 6: |B|, 7: quit):
2
1      -1      1
0      2      6
Please choose operation type(1: A+B, 2: A-B, 3: AxB, 4: A*inverse(B), 5: |A|, 6: |B|, 7: quit):
3
The operation you chose is invalid for the given matrices.
Please choose operation type(1: A+B, 2: A-B, 3: AxB, 4: A*inverse(B), 5: |A|, 6: |B|, 7: quit):
4
The operation you chose is invalid for the given matrices.
Please choose operation type(1: A+B, 2: A-B, 3: AxB, 4: A*inverse(B), 5: |A|, 6: |B|, 7: quit):
5
The operation you chose is invalid for the given matrices.
Please choose operation type(1: A+B, 2: A-B, 3: AxB, 4: A*inverse(B), 5: |A|, 6: |B|, 7: quit):
6
The operation you chose is invalid for the given matrices.
Please choose operation type(1: A+B, 2: A-B, 3: AxB, 4: A*inverse(B), 5: |A|, 6: |B|, 7: quit):
7
Thank you!
Process returned 0 (0x0)   execution time : 156.386 s
Press any key to continue.
```

## 4<sup>th</sup> example:-

```
"D:\code blocks\last code\bin\Debug\last code.exe"
Please enter values of Matrix B:
1 2 3
4 5 6
7 8 9
Please choose operation type(1: A+B, 2: A-B, 3: AxB, 4: A*inverse(B), 5: |A|, 6: |B|, 7: quit):
1
3      7      11
13     11      9
15     15     18
Please choose operation type(1: A+B, 2: A-B, 3: AxB, 4: A*inverse(B), 5: |A|, 6: |B|, 7: quit):
2
1      3      5
5      1     -3
1     -1      0
Please choose operation type(1: A+B, 2: A-B, 3: AxB, 4: A*inverse(B), 5: |A|, 6: |B|, 7: quit):
3
78     93     108
54     72     90
99     123    147
Please choose operation type(1: A+B, 2: A-B, 3: AxB, 4: A*inverse(B), 5: |A|, 6: |B|, 7: quit):
4
The operation you chose is invalid for the given matrices.
Please choose operation type(1: A+B, 2: A-B, 3: AxB, 4: A*inverse(B), 5: |A|, 6: |B|, 7: quit):
5
-99
Please choose operation type(1: A+B, 2: A-B, 3: AxB, 4: A*inverse(B), 5: |A|, 6: |B|, 7: quit):
6
0
Please choose operation type(1: A+B, 2: A-B, 3: AxB, 4: A*inverse(B), 5: |A|, 6: |B|, 7: quit):
7
Thank you!
Process returned 0 (0x0)   execution time : 31.956 s
Press any key to continue.
```