

LAB VIII

1. Run the following program and examine the output.

l8p1.c

2. Create a data file **matA.dat** with data for matrix **A** and a data file **matB.dat** with data for matrix **B**. In each data file, the first line contains the row and column dimensions of the matrices and then the matrix elements stored row-wise.

Copy the given code (omitting the comments) with modifications at appropriate places (see the comment parts of the program). After completion of the function **matread**, rowA (resp. rowB) and colA (resp. colB) contain the row and column dimensions of A (resp. B) and the respective components are stored in A (resp. B). These are read from the files matA.dat (resp. matB.dat). The function **matprintt** prints a matrix in the terminal. After completion of the function **matmul**, flag=0 if the matrix multiplication AB is not possible. Otherwise, rowC and colC contain the row and column dimensions of C with $C=AB$ and flag=1. After completion of the function **matprintf**, the matrix C is written in matC.dat with row and column dimensions in the first line and then the matrix components row-wise.

q18p2.c

Expected input: See **matA.dat** and **matB.dat**

Expected output:

The matrix A is:

```
2.00  0.00  5.00  1.00
4.00  0.00 -6.00  1.00
5.00  1.00  2.00  1.00
```

The matrix B is:

```
0.00  2.00  5.00  2.00
0.00  4.00  6.00  1.00
4.00  1.00  0.00  1.00
1.00 -5.00  6.00  0.00
```

The matrix C is:

```
21.00  4.00 16.00  9.00
-23.00 -3.00 26.00  2.00
9.00  11.00 37.00 13.00
```

Also see **matC.dat**