

# Lab Lesson 03

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## Exercises

1. Read from console an arbitrary space separated string of doubles, and return the maximum value.
2. Create a program that reads a matrix from console. Ask the user the matrix's number of rows and columns first, read the matrix by row, and then check that the number of imputed cells per row matches with the number of columns. Print the matrix

Use `System.out.printf("%nd", i);` in order to print the integers formed by at most n digits

3. Edit the previous exercise to sum two matrices
4. Edit the previous exercise to perform the matrix multiplication
5. Create a magic square using the Siamese method for matrices of odd size  $N$ , filling it with numbers from 1 to  $N^2$ . Fill the matrix starting from the central cell of the first row with the number 1, then always move for filling the boxes is diagonally up and right ( $\nearrow$ ), one step at a time. When a move would leave the square, it is wrapped around to the last row or first column, respectively. Fill each cell with an increasing number. If a filled box is encountered, one moves vertically down one box ( $\downarrow$ ) instead, then continuing as before.

At the end, do some debugging, and check if the obtained matrix is a magic square, that each each row and diagonal have the same sum value.