University Center AbdElHafidbBoussouf – MILA
Institute of Mathematics and Computer Science

Programming Tools for Mathematics

Lab Assignement N°2

Exercise 1 Start a new MATLAB session.

A) **Variable creation** : Generate variables according to their description as follow :

1) **A** : a row vector containing values ranging from 3 to 5 with a unit step.
2) **B** : a row vector containing values ranging from 3 to 46 incremented by 7.
3) **D:** a row vector **,** consisting of 5 elements, all initialized to 0
4) **E:** a column vector consisting of 3 elements, all initialized to 5
5) **C :** a vector of 7 columns with real random values between 0 and 1
6) **F:** a column vector of twelve equally spaced elements ranging from 9 to 24
7) **G:** a vector composed of the variables **A** and **B** in the same row. What is the name of this operation?
   What is the length of the vector G?
8) **H :** a null square matrix of order 5
9) **I :** elements of the shown matrix

16	3	2	13
5	10	11	8
9	6	7	12
4	14	15	1

10) **J :** a 5-by-2 matrix with all elements equal to 3,7
11) **K :** random integer values, on a matrix of 4 rows by 3 columns
12) **L :** composed of H and J matrices, on the 1st row and I and K matrices on the 2nd row,
13) How many rows are there on L? how many columns? How to obtain the size of L according to its dimension?
14) **M:** Transpose the last matrix
15) Answer the same questions as in 13), using the matrix **M**.

B) **Variable indexing** : Enter the appropriate commands to extract the elements described in the table below from the original variables into the specified variable names:

	Asked variable	Description	Original variable
1)	a	The 1st element.	A
2)	b	All elements	B
3)	c	From the 4th to the last element	C
4)	f	The 1st, 3rd, 2nd, and last elements (respect this order)	F
5)	h	Element on the 2nd row and 3rd column	H
6)	i	The 7th element	I
7)	k	Elements on these index: 2,4,6,8	K
8)	l	Elements on the intersection of the 3rd, 6th, 7th rows with the 1st, 4th, and 7th columns.	L
9)	m	All elements of the 1st, 3rd, 2nd, and last column respectively	M
10)	n	The sub-matrix formed by the first 5 rows.	M
11)	p	Interchange the 2nd and 4th rows , and columns 1 and 3.	M