MATHEMATISCHES INSTITUT
DER UNIVERSITÄT MÜNCHEN
Prof. Dr. C. Seifert / Dr. P. Soneji

WS 2015/16
– Blatt MATLAB 1 –
29.10.2015

Numerik I
(Zentralübung)

MATLAB Project 1

Using MATLAB (or a programming language of your choice), write a function/ script that plots the interpolation polynomial of order at most n, that goes through data points

$$(x_0, y_0),\ (x_1, y_1), \ldots, (x_n, y_n)\,, \quad x_i,\ y_i \in \mathbb{R}\,,$$

where the x_i are distinct. You may use either Lagrange's or Newton's method. Assume the data is given as a $2 \times (n+1)$ matrix

$$A = \begin{pmatrix} x_0 & x_1 & \cdots & x_n \\ y_0 & y_1 & \cdots & y_n \end{pmatrix}.$$

Your script should produce a graph that, when given such a matrix A, plots the $n+1$ points contained in the matrix, and the interpolation polynomial going through them. Your solution will be tested with some actual data, represented as in matrix A.

Please e-mail your scripts to one of the following correctors, depending on your last names:

Last name	**Corrector**	**e-mail address**
A-D	Jingjia Liu	jingjialiu@yahoo.de
E-H	Konstantinos Zacharis	zacharis@gmx.net
I-L	Marco Baffetti	marco.baffetti91@gmail.com
M-P	Ha Vu	freshhavu28@yahoo.de
Q-T	Elias Haslauer	elias.haslauer@campus.lmu.de
U-Z	Markus Noeth	markus.noeth@physik.uni-muenchen.de

Deadline for emailing solutions: 1400 Thursday 12 November 2015

Homepage: `www.mathematik.uni-muenchen.de/~soneji/numerik.php`