SE Course: Numerical Methods

http://www.cs.aaue.dk/~yang/course/NMbasis/NM2010.htm
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MM8: Introduction to Differential Equations and Euler Method

1 kl.8:15-9:15, Review of MM7 and Some Examples

- What we talked in MM7;
- Examples of linear and cubic spline methods;
- Matlab implementations.

2 kl.9:20-10:50, Exercises for MM7

Question One (Exercise 4.4.2 and 4.4.3, pp.114):

Find the linear spline which interpolates the data

x	0	1	3	4	6
$f(x)$	5	4	3	2	1

- What are its values at 2, 3.5, and 4.5?
- Write a Matlab m-file to realize the linear spline interpolation for a given set of data;
- Use your developed m-file to plot the linear spline of above data.

Question Two (Exercise 4.4.4, pp.114):

Find the natural cubic spline interpolation for the following data

x	1	2	3	4	5
$f(x)$	0.0000	0.6931	1.0986	1.3863	1.6094

(see the textbook for the hints)

3 kl.10:50-11:30, Introduction to Differential Equations and Euler Method

- Reading material: Subsection 6.1 in Textbook.