Advanced Algorithms

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Organization of the lab (from Lab 2)

- Solution (on request) of the assignment given the previous lab (~10 mins)
  - Solution is put online anyway
- Written or programming exercises related to the last lecture (~45 mins)
- Presentation of assignment for next lab (~5 mins)
- Assignments are optional and are done at home individually and without searching the solution on the internet!
  - Email the assignment to floriano.zini@unibz.it
  - by Friday, 1:00pm
- Assignments gives maximum 2 points
  - \( G = E + P + A \)
Lab 1 – Octave tutorial

What is GNU Octave

- High-level interpreted language, primarily intended for **numerical computations**
- Great for **prototyping**
- Normally used through its **interactive command line interface** but also batch programming is possible
- Capabilities for the **solution of linear and nonlinear problems**, and for performing other numerical experiments
- Extensive **graphics capabilities** for data visualization and manipulation
- Quite similar to **MATLAB®, most programs are easily portable**
- Octave documentation is available here
- Website: [http://www.gnu.org/software/octave/](http://www.gnu.org/software/octave/)
How to install and access Octave

- Instructions for installation on your (Windows/Mac/Linux) computer are here: http://www.inf.unibz.it/~zini/AA/oct-inst.html

- In the Lab
  - Boot in Linux
  - Search for "octave"
  - Start Octave

Basic operations

Octave Tutorial
Basic operations

Moving data around

Octave Tutorial
Moving data around
Computing on data

Plotting data
Control statements and functions

Octave Tutorial
For, while, if statements, and functions

Machine Learning