MATH1402: Python programming project

1 The project

The objective of this exercise is to give a hands on experience of solving a problem computationally using some of the tools that we have seen in the Python course. Below we list the main points to remember:

- The programming project should be carried out in pairs. The names of the two students in each pair should be submitted on the google form which can be accessed via moodle.

- The finished project should be submitted by email to `math.ugteaching@ucl.ac.uk` on or before the 20th of March. The submission should be on the form of a zipped folder, the contents of which is detailed in each project specification. The subject line of the email should be `MATH1402PROJECT` and the e-mail should contain the names of the two group members, the number of the project (1,2,3,4) and also what version of Python that has been used.

- The project is supposed to be done independently but some supervision is available during the four weeks after reading week during the office hours of E. Burman (2-3 on Thursdays) and of M. Scroggs (TBA).

- Four different topics are proposed and the material for these different projects is available on moodle.

  1. Computation of particle paths is a flow field.
  2. Computation of a stationary shock wave.
  3. Approximation of a chaotic system.
  4. Statistics of ants on triangles.

  The three first of these projects consists of the numerical solution of differential equations. The last is on statistics. Note that all projects give the same maximum contribution to the final mark of 15%.

- The following aspects will be considered for the mark:

  - the submitted project should contain all documentation demanded in the project specification;

- the submitted code must run and produce the result specified in the project. Should the code only meet some objectives of the project partial marks may be given;

- the code should be easy to read, with comments explaining all the main routines. Absence of comments will lead to a reduction in the mark.