Computational Projects

Lecture 8 part 1 **: Project Information**

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http://www.maths.cam.ac.uk/undergrad/catam/part-ia-lectures

Report: marks

- Marks are awarded based on your report (write-up)

- 40% marks for "computing", 50% for "mathematics", 10% for "excellence"

- All marks contingent on submission of **both** report and corresponding computer code

- No α's or β's are awarded, but marks are scaled to take care of this

- Many students will find that CATAM contributes ~20% to their total mark

Report: maths

- Mathematical content is most important ingredient

- You do not usually need to write-up details of algorithm implementation

- You should usually comment on checks done to verify code is correct

- Communicate your observations & conclusions through mathematical writing

- Be sure to answer/comment on **everything** asked

Think about...

- Does your algorithm work? How do you know?

- What is the complexity of your algorithm?
  [Usually we want to know how it scales with some large/small quantity.]

- What is the accuracy of your method?
  [Discuss step-sizes, truncations, etc.]

- How do results compare to theoretical expectations?

- What can be concluded from your results?
  Mathematical or physical consequences?

Report: technicalities

- Must be submitted in PDF format

- Use any word processor: LaTeX, Microsoft Word, OpenOffice, ...

- MATLAB can produce PDF plots, which can be included/imported using any word processor

Unfair means

- MATLAB exercises and introductory projects: Feel free to collaborate & have supervisions...

- Core projects (Lent submission) and additional projects (Easter submission) are *examinable*: These must be **your own work,** no collaboration

- If you break these rules then you risk getting zero marks for CATAM

Acceptable

- *Occasional, general* discussion of the approach to a project

- *Small* hints on debugging

- If in doubt e-mail the CATAM helpline catam@maths.cam.ac.uk

Unacceptable

Unacceptable collaboration includes (but is not limited to)

- Copying any person's program

- Using someone else's program or any part of it as a model, or working from a jointly produced detailed program outline

- Copying or paraphrasing someone else's report, in whole or in part

- Posting questions on the internet, e.g. StackExchange

- Sharing **your** work with other students

Citations

- Please do use reference books, journals, online references, lecture notes

- Acknowledge all sources with a footnote or endnote (WWW pages should be cited with the full URL)

- Unless otherwise instructed, there is usually no need to quote long derivations/proofs in full, but provide your own brief summary

Programs

- You are expected to write your own programs

- You may "recycle" or "re-use" **your own code**, for example between different projects

- Using copied code, e.g. from internet, **which you are instructed to write yourself**, is generally considered plagiarism, even if cited

- Earn your marks with your own work

Plagiarism detection

- Checks will be made to ensure the Academic Integrity of the Computational Projects is upheld

- Your programs will be compared (automatically) with other programs from this year and from previous years

- Similarly your reports will be compared with a database of reports (and other sources)

- You will fill in student declaration forms, on-line and at submission.

- If plagiarism is suspected, you may be interviewed. You need to be available for this in the last week of Easter full term.

Resources: CATAM help

- CATAM webpage (with links to all of the below)
  www.maths.cam.ac.uk/undergrad/catam

- MATLAB sessions (earlier) & booklet

- "Introduction to LaTeX" lecture & lab in autumn

- Part IB and Part II manuals (new one published each summer)

- CATAM News — updates/corrections/FAQ's

- CATAM helpline: catam@maths.cam.ac.uk

Resources: general help

- For programming : there is a huge range of online material, tutorials etc.

- For mathematics involved in projects

  - Lecture notes

  - Textbooks

  - Webpages

  - Cite any sources which contributed to your report
    http://www.maths.cam.ac.uk/facultyboard/plagiarism/

Submission

- You will receive detailed e-mails ahead of submission deadlines

- See also the Project Manuals

After submission

- Work cannot be returned to you (we need to retain them in case of queries)

- Make sure that you keep your own version...

- Manuals will be taken offline in summer. You may wish to keep your own copy of the project statement before this is done

- All your work is kept, in anonymised form, to check against future submissions

After IA exams...

- ... recover

- complete the exercises in the MATLAB booklet

- do the Introductory project (root-finding)

- feel free to get a head start on core projects (in Aug/Sept)

- come back prepared for a CATAM supervision on the introductory project (talk to your DoS)

Your opinion

- Web-based questionnaire to help us improve teaching of Computational Projects for Part IA students
We'll **e-mail** you in **June** (or perhaps July)