

Organization of homeworks and project Engineering students

- Select a style of “homework” and form groups accordingly (see below: different styles imply different rules). Communicate to me to which group you belong, and which style you have selected.
- Try to select a variety of styles throughout the homeworks 2-5.
- Different styles imply different rules:
 - If you choose for a literature project, there should be no more than two people in your group.
 - If you opt for a computing project, there should be no more than three people in your group.
 - If you opt for a data analysis project, there should be preferably two persons in your group, with different backgrounds / interests.

Style 1: Literature project

This involves choosing a paper from the literature that extends or provides additional background on the material of the course (chapter) and then summarizing the paper, its objectives, results, and how it fits into the broader picture. A good reference of papers can be retrieved from

<http://www.nslj-genetics.org/ld/>

Style 2 and 3

Both styles involve performing a study of your own. As a consequence, you would be working more independently, despite the fact that you belong to a group. For example, to simulate artificial data, you could use existing software or write your own R programs. The idea would be the same: summarize the analysis, objectives, results and how they fit into the broader picture. A good list of software package can be retrieved from <http://www.nslj-genetics.org/soft/>

- Style 2: Computing project

Use existing software (other than those discussed or shown in class) to investigate data properties or to better understand certain concepts of the course, on data you simulate yourself or data you can find on the internet.

For instance, when the homework topic involves investigating LD between markers, you can choose Haploview to investigate haplotype blocks in the data. Hence, apart from describing the software briefly (what it can and cannot do), you will need to describe what haplotype blocks are and you will need to show how these fit into the broader picture.

- Style 3: Data analysis

Simulated data will be provided and you will build your case using some questions as a guideline. Be creative and do not be afraid of consulting the literature to obtain a more complete picture. The idea is to use software as indicated in class. But you are free to use other software tools. As long as you can answer the given questions, everything is allowed.

Format

Each homework involves writing a short report of no more than the equivalent of six single-spaced typed pages of text, excluding figures, tables and bibliography. It should contain an introduction, a description of what the paper/project does, and how this fits into the broader scientific context. The report should also have a conclusion and if, citations are made to other papers, there should be a bibliography. Only one report per group is needed.

Final report

Every person summarizes the results of the homeworks in which he/she was involved. This involves linking the results together and discussing the results by fitting all pieces together. Hence, think carefully about the styles that you select for each homework, in order not to make this last step too complicated. Again, write a short report. This report will be your “written exam” and should be no more than the equivalent of ten spaced typed pages of text, excluding figures, tables and bibliography.

Grading

- Participation 10% (including lectures, discussions)
- Homeworks: 50%
- Report and Oral Defence : 40%
 - Every individual will present the personalized final report. The oral exam is further completed by answering questions that pertain to that report, and perhaps – when unclear from the final report – refers back to one of the constituent homeworks.
 - When there is enough diversity in the class, this reporting can even occur in front of all class members (we will see)