Organization of Homeworks Assignments

Bioinformatics

- Form groups and select a style of "homework" (see below: different styles imply different rules). Communicate to me to which group you belong, and which style you have selected, per assignment. Group composition and group size may differ between assignments.
- All homework styles need to be represented by the class student population! Every group should have had at least two homework styles in total over 4 homework assignments.

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, and results.

Do not copy the paper, but show you have understood the main ideas of the paper and "discuss" the paper. Such a discussion could include thoughts on what was the key idea, strengths or weaknesses of the methods/experiments, comments on the writing, ways to extend the work, flaws in the argument/data/experiments, etc. Anything is fine, as long as it demonstrates some real thought.

A selection of papers will be provided.

If your group would like to discuss a paper not provided via the instructor, first check with the instructor! There are several ways to retrieve other interesting discussant papers (via websites such as http://www.nslij-genetics.org/ld/)

All literature projects will be presented and discussed in class.

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 contexts given in class.

Depending on the topic of the assignment, a good list of software package can be retrieved from http://www.nslij-genetics.org/soft/

Solutions will be provided to everyone, once the homeworks have been corrected.

Style 2: Computing project

This style involves writing your own software code to answer particular questions, or using existing software (can be other than those discussed or shown in class, but not necessarily), but playing around with different parameter settings or conditions. The idea is to investigate data properties and analysis result or to better understand certain concepts of the course. This can be done via data you simulate yourself, or via data you can find on the internet, or via data that will be provided to you.

When using existing software, you will be asked to describe the software briefly (what it can and cannot do), you will then need to describe what the effects are of using different parameter settings (apply, observe, discuss), and finally you will need to show how this software fits into the contexts given in class.

Style 3: Classic (questions/answers)

Simulated or real-life data problems will be provided. Some of these problems can be solved by pen and paper. However, in line with genuine bioinformatics problems, most of the time you will need a computer and a software tool. These tools will be briefly illustrated during the practical sessions.

You can still be creative! Do not be afraid of consulting the literature to obtain a more complete picture when answering the questions or solving the given problems. Although the idea is to use software as indicated in class, when applicable, you are free to use any other software tool that can do the job. As long as you can answer the given questions, everything is allowed.

Format or report

Every homework assignment involves writing a short report of no more than the equivalent of four single-spaced typed pages of text, excluding figures, tables and bibliography. It should contain an abstract (e.g., depending on the homework style: description of the paper content, description of the problem) and a discussion part (see before). If citations are made to other papers, there should be a bibliography! Only one report per group is needed.

Grading

- Participation 10% (including lectures, discussions, presentations)
- Homeworks: 50%
- Examination : 40%