Lab 2-1: DNA Analysis

Due date: September 29, end of lab..

About the Lab

Lab 2 consists of two parts: **Lab 2-1**, which will take place over the course of the **September 29** lab period, and **Lab 2-2**, which will commence on Thursday, October 1 and will end on Tuesday, October 6.

This is your first software development lab in the course, and the first lab you are performing in your *permanent CSC 448/BIO 441* teams.

This lab illustrates the process of working on **multidisciplinary teams** in miniature. Because you only have one lab period to work on this lab, the timing is important.

Notice, that BIO 441 students will have started the discussion of the lab assignment prior to the joint lab period. By the time you come to the lab to meet your teammates, they will know the problem that needs to be solved, and should have possession of the data. They also may have started developing the requirements document. Starting at that point, here is a rough breakdown of the lab period time for you.

Time	CSC 448	BIO 441
10 mins	Introductions, discussion of assignment	
20 mins	Preparation of requirements	
10 mins	Mapping out solution	
30 mins	Software development	Data collection
20 mins	Assembly, testing, modification, and use of software	
10 mins	Preparing and submitting deliverables	

Note: our lecture will go for only 50 mins on September 30. After that we will move to the lab to give everyone enough time to complete work on the assignment.

Lab Assignment

Your assignment is to

- meet your BIO 441 teammates
- find out what problem they are trying to solve
- help them formalize requirements[1]
- design and develop a program that satisfies the requirements
- deliver the program to your BIO 441 partners

all in the course of a single lab.

While you may probably guess what you will be asked to do, *it is the job of your partners* to provide you the details of what is required. You should only know in advance the following:

- The assignment was created jointly by CSC 448/BIO 441 instructors.
- The program you have to develop needs to *perform a single computation.* That computation is something that we have already discussed in the class (no surprises here).
- The required computation is not very difficult.
- The difficulty of the assignment is in the combination of (a) short period of time in which you need to complete the task, and (b) the fact that this is the first time you are working with your partners on a real software development task, and (c) the fact that this is the first time your partners have developed real software requirements.

Note: Please pay attention to non-functional requirements that your partners develop — e.g., there may be some requirements that concern their ability to run the program. Make the right development choices.

Submission Instructions

There is only one CSC 448 deliverable that will be graded: the program that you develop and deliver to your partners. In order to properly evaluate your program though, we need you to submit two additional deliverables:

[1] This used to be solely the responsibility of BIO 441 students. However, to improve communication and the quality of the requirements, you are being asked to help build and/or revise the requirements document. At the same time, you should be aware that the requirements document belongs to your BIO 441 partners, and it is their responsibility. Do not take over the task of preparing requirements from your partners!

- The initial requirements document (as you see it at the beginning of the class)[2];
- The final requirements document (as you modify it throughout the class);

Given the short length of the lab, the documentation requirements are minimal - we will just need a `README` file which contains the following information:

- Team number
- List of all team members (both CSC 448 and BIO 441) and their email addresses
- program compilation/running insrtuctions.

In later labs, you will need to provide documentation on the use of your program for your BIO 441 partners. For this lab, you will simply need to train them to use the program on the spot.

Submission via handin. To ensure that we have access to your submission no matter what, please submit all deliverables, together with the `README` file using the following `handin` command:

```
$handin dekhtyar 448-lab2-1 <files>
```

Submit via `handin` before you leave the lab. **Only one submission per team required.**

Submission via Piazza. Once the lab is over and the team rosters are finalized, we will make team directories on Piazza available and will post an appropriate announcement to both course mailing lists. Once your team's Piazza group is enabled, go ahead and upload to Piazza the following files:

- The two requirements documents (initial and final) (BIO 441 students do that).
- A downloadable, runnable binary of your program (CSC 448 students).
- The README file with the submission instructions (CSC 448 students).

[2]This is the version of the document **before** the CS students worked on it. It may be empty, or very rough. If your partners did not prepare any draft requirements prior to joining you, submit an empty template as the initial document.

Deadlines. The following are **hard deadlines**:

- `handin` **submission is due the end of the lab (6:00pm)!**
- Piazza **submission is due by the beginning of the class time on Thursday, October 1!**