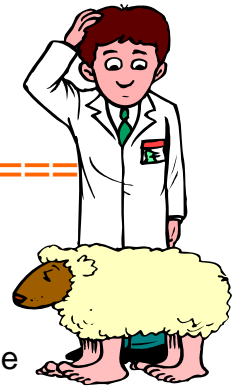


ECOL 453/553 Final Project 2005

Due on 15th Dec 2005 (4:00 PM)



Dr. West and Dr. East are world-renowned human geneticists. They were recently awarded a multi million \$ grant by an undisclosed agency of the government, to study immunity demonstrated by few individuals to specific (undisclosed) pathogen that is ravaging through various countries around the world.

Dr. West has his laboratory located in Tucson, Arizona, while Dr. East has her laboratory located in (undisclosed location) Taiwan. They have assembled a SWAT team of experts who will carry out specific tasks, isolate the cause and help develop the cure

Preliminary studies (undisclosed) suggest that primary region of interest/investigation should be Human Chromosome 21 (band q11.2)

Leveraging on the geographical disparate location and the time difference teams are able to work 24x7 on this crucial task.

Unfortunately this has added complexity, as many people are working together and at times on overlapping regions of the genome, they need an easy method to combine the work done by each team and present it in a unified manner.

Team Member	Location	Task
Peter S. Earcher	USA	Pubmed Searches
Li Sun	Taiwan	Literature Survey
Sherry N. Ping	Taiwan	SNP identification
Gene Walker	USA	Sequencing Walking
Pierce C Rocker	USA	PCR designer

Based on the data gathered by the teams Drs East and West will be able to draw conclusions and chart further directions.

They are looking for a turnkey solution to allow them to carry out their work efficiently and in harmony and accuracy!

They have heard that University of Arizona students are extremely well versed with Bioinformatics tool and resources. Some of the students have spun their own companies and offer their service for the right price. (yes you are one of them)

You have been approached by Dr. West to submit a proposal and a prototype to help solve their problems.

Armed with your knowledge and experience in scripting and know data formats for exchanging genetic information you are going to develop a small prototype and written proposal.

Basic Information

Team Member	Stores data using	Task
Peter S. Earcher	Excel	Pubmed Searches
Li Sun	Word	Literature Survey
Sherry N. Ping	Excel	SNP identification
Gene Walker	Excel	Sequencing Walking
Pierce C Rocker	Excel	PCR designer

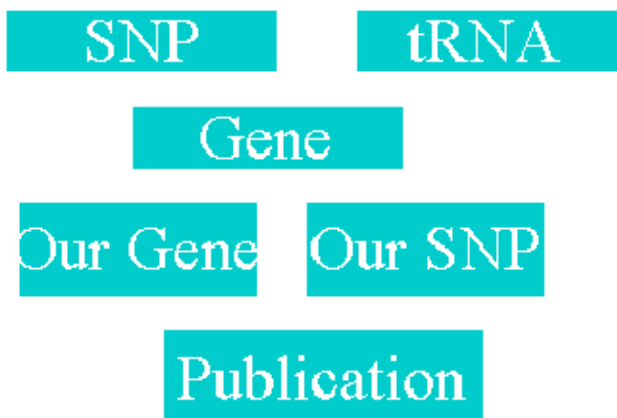
The team from Taiwan likes to use the UCSC human genome browser:

<http://genome.ucsc.edu>

The team from USA likes to ENSEMBL human genome browser

<http://www.ensembl.org>

- They will provide sample data files from each of the team members.
- The solution needs to be 100% web based and easily accessible by multiple users.
- They need to interface this data with the genome browsers, with ability to link to other sources like pubmed, embl etc.
- Some of the team members also like to use an sequence annotation software called Artemis <http://www.sanger.ac.uk/Software/Artemis/>
- Data should look like this in the genome browser



I want you to type a small proposal (2 to 3 pages) following the guidelines of software development phases

- Requirement phase
...can you make this for me .. my problem is ?
- Specification Phase
...this is what your product will do and not do ..
- Planning Phase
...it will take ? Years and \$\$\$...
- Design Phase
...specify how the product will do ..what you want it to do...
- Implementation Phase
...Get ready to rumble !!...
- Integration phase
...making sure that everything works together !
- Maintenance phase
...can you change this ... documentation (how to make your s/w work)

1. FIRST: Give your product a name: gviz or something catchy !
Always refer to it by name ! gviz can do this etc.
2. Step through each of the phases (you actually are doing that !) and write a bit about each phase (7 steps !).
3. Mention in detail what tools (s/w) you want to use and why.
4. Talk about what you will use ready made and what code will you develop
5. Talk about short comings in your solution and mention how you many want to overcome those in the future (don't get too technical)
6. Run sample data through your product. Include the image and any observations you can make from it !
7. THERE ARE NO WRONG ANSWERS so be creative and make a proposal that will knock the socks of Drs East and West and show them the light !

Sample data and hints and some skeletal code will be put up on: (class website for this session)
<http://amadeus.biosci.arizona.edu/~nirav/>
by Dec 5th 2005 Midnight