Databases for Bioinformatics
Instructor: Jason Kinser
Semester: Fall 2008
Grading: 25% Midterm, 25% Final Exam, 33% Student Project, 17% homework assignments
Midterm delivered on 10/15/2008
Final delivered on 12/10/2008
Student Project: The students are to create a small presentation that will encompass a project. There are several typical projects that can be used. One example is to create a database from multiple sources and provide example queries, another is to build a CGI interface to a database, a third is to provide a web interface to a third party database, a fourth is to interface with the database using languages other than those taught in the lectures.
Syllabus
1. Introduction and Justification. Comparison of databases to spreadsheets
2. Personal DB interfaces (Open Office Base and Microsoft Access).
3. Database Tables (keys, table creation)
4. Basic SQL Structure (basic queries, count function, comparison functions)
5. MySQL server, privileges, UPDATE, INSERT
6. Datatypes, strings, and math
7. Conditional statements (if, when, case)
8. Date/Time functions
9. Join Tables
10. Graphical Planning – Flow diagrams
11. Temporary tables and Views
12. Functions and Procedures (IF, CASE, LOOP, ITERATE, REPEAT, WHILE)
13. Python (scripting, math, collections, images, IO, functions, classes)
14. GUI (Tkinter)
15. Connecting Python to MySQL
16. CGI
17. Perl