CS2501/CS5022/CS6505

Assignments 1-3

[This is a sequence of assignments in which you are to use PHP and MySQL in order to develop part of a Web interface to the Dreamhome database]

Consider a common set of operations that might relate to Staff members of the company:

Queries:

- Find the name corresponding to a staff number
- Find the address & phone for a given last name (there may be several)
- Find the staff number, last name and first name of those earning more/less than a given salary
- Find the address of the branch employing a staff member
- Find the description of properties administered by a given staff member
- Browse the description of staff members one at a time
- etc.

Insert:

- Record the details of a new staff member

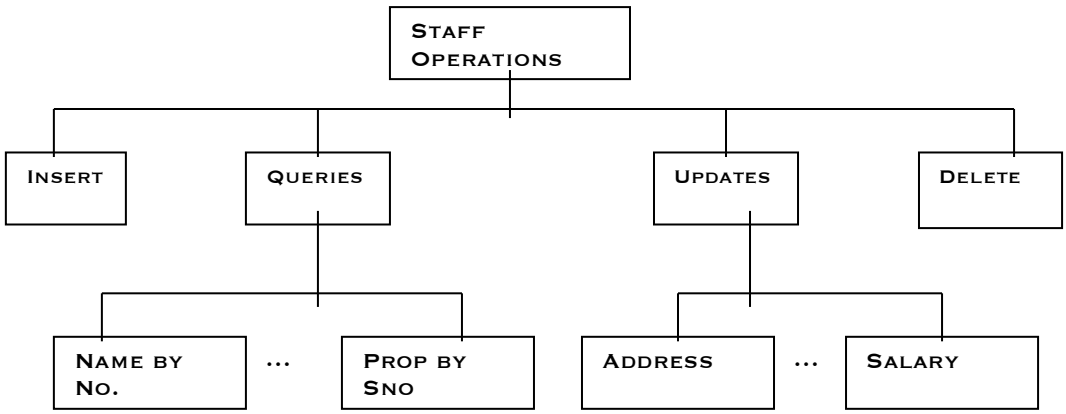
Update:

- Change the address of a staff member, specified by staff number
- Change the salary of a staff member, specified by staff number
- etc.

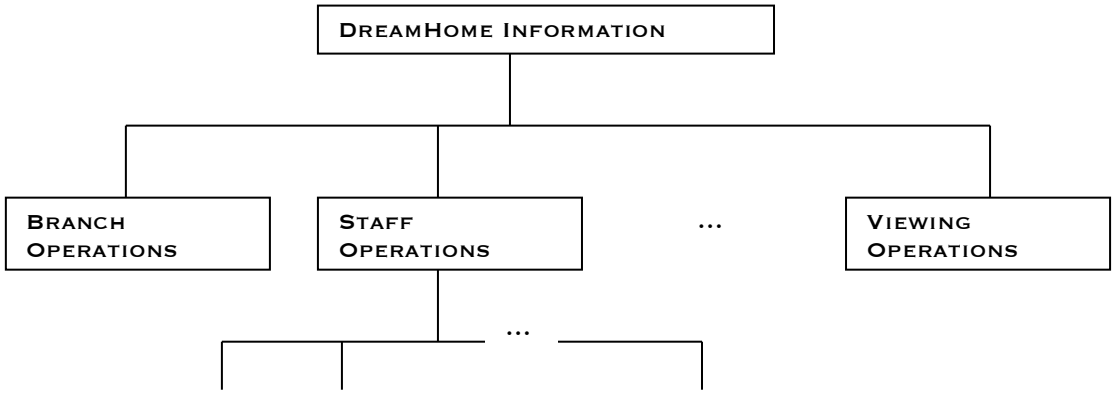
Delete:

- Remove the description of a staff member

In a simple system design, each operation could be implemented as a separate PHP/HTML page, and then linked via a common jump-off page:



The above process could be repeated for Branch Operations, Property Operations, etc. Essentially, a large information system design is being addressed in a divide-and-conquer manner: by writing separate pages for each identifiable operation set, the system can be developed in a piecewise fashion. Ultimately, the separate operation groups could be integrated into a master jump-off page, so that there is just one entry-point into your system:



In a real system, you might have two separate entry points – one for system administrators and another for general users – with some commonly-accessible pages. Note that it is not always clear where an operation "belongs", e.g. is "find properties suitable for a client" a property-oriented operation or a client-oriented one; should "find the properties managed by a staff member" be in the Staff Operations or the Property Operations group? In some respects, this may be resolved by asking whether queries should be categorized by *input* (the search value) or by *output* (the result value). Many information systems address this by replicating certain queries [i.e. re-using the same query page] in different branches of the hierarchy.

The Project

The ongoing project is to develop a reasonable part of this information system. You are not expected to have the time to accomplish all possible operations. Your level of knowledge/ignorance will dictate this, in any case. Anyway, if you can accomplish four queries in each of the categories, I presume that you could do the rest, given sufficient time. You might also implement any one table insertion, deletion and modification.

The Assignment

For the first assignment within this project, I would suggest that you tackle the Staff Operations, since we have seen some such examples in class.

Viewing: use http://cs1.ucc.ie/~sorensen/staffcount1.php (etc)

Within the Staff, you could implement four queries, and insert, a delete and one update. You could then add one/more jump-off pages to link to the code that you have developed.

Once this is complete, I would suggest that a similar partial development of any *one* other branch of the tree [e.g. Branch Operations or Property Operations] – and the jump-off page – is sufficient.

Evaluation

Most of the marks will be awarded for simply reaching your goals: developing a set of pages that support web-based interaction with the Dreamhome database. The operations you implement should represent a broad cross-section of typical user requirements [queries based on one or several input values, perhaps a browsing option, etc.]

Approximately 10% of the marks will go for design quality. Your pages need not objects of beauty – but they should be at least as good as what I produced [not hard, says you]. It is important that there be a common look-and-feel to the pages comprising the entire information system.

Development Platform

You could develop your code using the facilities of the Computer Science servers: Apache Server and MySQL Database Management System. In this event, you will need your own copy of the Dreamhome database [otherwise, one user's updates would be visible to others, causing confusion]. To allow this, each user will have a separate "private copy" database created for them – details by email.

An alternative to this is to work on your own computer – i.e. by installing all the necessary software: Apache and MySQL. The easiest way to do this is by downloading and installing the XAMPP package that gives you everything you need. I would recommend this strategy as you can work anywhere and you might learn more.

In either case, you will need a copy of the Dreamhome database. For this, the database install scripts [CREATE TABLE & INSERT statements] will be provided. By running these, you can create, or recreate, the database.

Timetline

I have given times below for various stages of the project, as well as the final submission date. Only this final submission date is absolute: You must submit on or before then. The other, intermediate, dates are just recommendations – so that you are keeping to schedule.

Staff Queries:	Friday, March 1
Staff Updates & Jump-off:	Friday, March 8
Final Submission:	**Friday, March 15**