HW2 Proposal to the team:

assignment requirements:
Decide on which combination of tools, or web application development framework, you think would be best for the class to use this term and make a convincing argument on your recommendation. The document, as a minimum, must include multiple options for languages, software development frameworks associated with the language, platforms, and operating systems. There is no limit on the size (minimum or maximum) but the topics must be covered. The assessment of this assignment will be on the number of options that are research, the discussion of the different pros and cons of each one and the rationale for the selection. Which choice the team makes for the final product will have no bearing on the grade of this assignment.

Before choosing a development environment and tools to help program a development application, the language for the web application must be decided upon. We are using the MVC architecture that keeps the business side of things separate from the layout and the database. In this way, our application can undergo future changes like updates to the look, without involving the actual application methods or needing to alter the functionality of the site. Making a css file for consistency seemed the easy way to define font, size, and color of the application. We could have chosen a different client side language like XHTML which combine the XML tags within HTML, or PHP which makes dynamic HTML pages. The advantages of XHTML are that because it's written more precisely it is easier to maintain and has a better browsing experience. The cons of XHTML is that it takes longer to write it due to it's more standardized rules like all lower case, nested tags. Then the browser will render it as HTML anyway. The brittleness of the language means that making 1 mistake can make the entire page invalid.

Had we chosen PHP to write our web application, the benefits would have been a smaller learning curve, available with apache web server cheaply, short build cycles,

free database api's and excellent c to php interface. You can write a complied language in C and use PHP for the client side. There are flexible frameworks that are really a pro and a con. For another programmer to debug and add to the framework or update it can be challenging due to the variety of ways to accomplish a task. As new programers the chance of spaghetti code is high, not using standards but rather coding to accomplish our goal would mean also poor security of the application.

Having decided now on HTML, why use javaScript with it? JavaScript is used for speed and versatility. It doesn't have to contact the server, it can be loaded right away. The draw back is that because it executes on a client's computer, it can be exploited. It also is interpreted differently on different browsers. Neither of these cons poses a problem for our program as it is intended to be run primarily within the court house and access is limited to specific users. JavaScript is used for things like validating the HTML form.

Language options of the business side of architecture are C, C++, Visual Basic, and Java. C++ was taught to us in previous semesters of FSU, it is powerful, free and popular. The pros can also turn into cons with thinking about it's power to be a high level language with low level control. It can be easy to program an error that is difficult to find, and 3rd party libraries are necessary as neworking and threads aren't standardized. Java is easier to learn than C++, and ½ of our group has programmed in java before while the other ½ is currently enrolled in a java course.

C has limited security versus Java has built in security into the language. C has

no buffer overflow and can overrun the buffer boundary creating segmentation faults, while java has a checked run time error exception, meaning the program will run, not overrun the boundary, and report the error during the running of the program. Java has an extensive library, is free, and is the most portable.

VB is faster to develop but harder to maintain, only runs on Microsoft platform while ava runs on a wide range of OS and hardware platforms. Visual Basic is a hybrid OO language, we have primarily worked with OO programming in the CS program.

While Java is a good language and is highly portable, it is unsuitable for some purposes, such as some game programming and system programming . Game programming often requires fast access to the screen-display hardware. This can be done by using DirectX, which is available only in C++ or C.

The program will be created in an eclipse environment that can be used for languages like java, C++ and C. A different IDE, Netbeans has similar features and tools, and is capable of producing a web application. Eclipse is more commonly used though historically, though it may appear a little more complex. Users of eclipse say it is easier to develop more complex projects due to the tools available. Netbeans 6 has been released and is said to be a big improvement, but 2 of 4 students in our group are more familiar with the eclipse environment.