You are probably very familiar with the screen below. This is the primary user interface that the HCI specialists at IU have designed for students who want to search and register for classes.

The Problem:

As you can see, the user interface (above) could use a lot of improvement. For example the first combo-box “Institution” asks the student to select the institution or campus. Given that most students are typically logged-in using CAS authentication before trying to register for their classes, and given that almost all students take their classes from their home campus, asking every student to “select their campus”, seems redundant, and simply bad design. Assuming that some students might want to take classes from other campuses, then, the combo-box should be pre-populated with their home campus, but allow them to change the campus if they wish.

Similarly, the second combo-box “Term” can also be pre-populated with the upcoming semester by default. Although one can make a case for a student wanting to register for more than one semester at one sitting (for example during spring semester, some students register for their summer sessions as well as fall semester classes).
The third combo-box “Course Career” has a few problems. First, what does “Course Career” mean to a typical student? After we look at the elements in the combo-box, we noticed that “Course Career” can be things like (Undergraduate, Graduate, Graduate-1 (?), Law, Medicine, Optometry, Dentistry, etc.). This data varies by campus. The second issue that comes to mind is why should the student answer this question? Don’t we already know their major and minor? Also, after we examine the next search field, we notice that they are asked to provide the “Course Subject”. Those students familiar with this field (CSCI-A, CSCI-C, CSCI-B, CSCI-Y, INFO-I, PHYS-P, ANAT-A, etc.), can tell you that it already provides a lot more information about the type of course that the student wants to take. So, asking the student to enter their Course Career seems unnecessary.

Well, you can go through the other fields and note that many of the fields are not necessary and are especially overwhelming for a new student who wants to register for classes.

The Opportunity:
Well, let’s start with what we know. In most cases the students has already logged into the system which means that we know the following:

- The complete student profile information (name, campus, college, department, major, minor, advisor, etc.)
- The complete past enrollment information for the student (what classes they have taken, what classes they have transferred, tested out of, etc.)
- The complete degree requirements for their major (what courses are needed to complete most of the requirements of a degree)
- The complete schedule information (what courses are offered in the coming semester)
- The complete prerequisite/co-requisite requirements for courses

So, much is already known about the student and what courses they may be interested in for the following semester.

Possible ideas for your new design may include intelligent search tools which make use of the student's profile. For example, knowing the student's major, class rank, courses taken, prerequisite hierarchy of courses, degree requirements in various majors, current course offerings by each department, and other such information can be used to offer the students proper list of courses to select from.

An alternative approach may point to the fact that students typically follow the requirements of their chosen degree. Therefore, an intelligent registration tool could simply present the student with a list of (available) courses that allow them to minimize their time-to-graduation. See:

http://www.cs.iusb.edu/flyers/Flyer_BS_in_CS.pdf

http://www.cs.iusb.edu/flyers/Flyer_BS_in_Informatics.pdf

Another idea may be to provide a simple interface, such as the Google search. The student would then simply type in a search phrase such as: “web programming”, “computer literacy”, “nursing”, “business”, “accounting”, “math class”, “calculus”, “music”, “piano”, “general education”, “critical thinking”, “foreign language”, “science class”, “night class”, “online class”, etc.

Your task, if you choose to accept it, is to design a better and more intelligent search tool for IU students. For this project you will receive minimal specification so you have a lot of flexibility, but your design must encompass the following elements:

1) Use of authentication (userid and password to login)
2) Use of PHP classes
3) Use of PHP SESSIONs, POST, GET, etc.
4) Use of MySQL database (At least 5 tables: Student, course, section, department, college/school, campus, etc.)
5) Use of CSS to allow for easy customization of the web page based on the student’s profile (for example student’s home campus)
6) Use of Java Script to perform some client-side input validation, animation, etc.
7) Use of HTML to create forms, etc.
8) Use of images, sounds, video to provide help to the user.

If you are interested in working on this project make an appointment to see me.

Hacker’s Corner

Create a Shopping Cart so that when the student selects a class, it is entered in the shopping cart. The user should be able to view the records in the shopping cart, or select a course and delete it from the cart. Ideally the shopping cart could be made persistent (e.g., put in the database).