Introduction

During the last three years, I’ve had the opportunity to teach a course in designing legal expert systems at Georgetown Law Center. In the course I’ve been joined by Kevin Mulcahy, an adjunct professor at the Law Center and the education director at Neota Logic, a software company. I’ve been able to teach the class even though neither I nor many of my students know how to program, because Neota Logic’s software does not require coding background. As I explain in more detail below, legal expert systems are apps that walk the user through a series of questions and then use the information elicited to provide guidance tailored to the user’s circumstances.

Based on our experience, we’ve identified a number of pedagogic benefits from a course in legal expert system design. It teaches students an approach to law that is very different from the traditional case-by-case method – an approach that we believe will be increasingly relevant to law practice in the 21st Century. The course imparts legal skills – not tech skills – that involve a fundamentally different way of solving legal problems. In addition to learning these new skills, students enjoy the class immensely. They like taking a different type of class that draws on a range of digital literacy skills they developed before coming to law school. They also like working in teams to design apps with practical uses. At the end of the semester-long course, they are pleased to have an app they built to add to their law school portfolios.

I’ve collaborated with Neota Logic because I found that its software is well suited to the course. Most importantly, law students learn to build apps with a minimum of training. In addition, the platform contains a powerful reasoning engine that allows them to create apps that reflect different forms of legal analysis. Apps built in the platform can incorporate laws, regulations, and processes that involve if-then reasoning, mathematical functions and multifactor analysis. The platform also has many virtues on the end-user side. After the end-user has completed an automated interview, it produces a short report that provides guidance tailored to her legal question and explains in plain English how the information she provided relates to that guidance. The platform also has document-assembly capabilities that can provide the end-user with a broad range of relevant documents. All this said, the fundamental
principles of legal expert system design are independent of Neota Logic’s software or any other platform. Students who have a software background can learn these principles to code the law directly (as some of our students have done.) And in the future, a new platform may come along that offers more capabilities and greater ease of use. For the present, though, Neota Logic’s software is a good choice for this class.

During the time we’ve offered this class, we’ve had frequent inquiries from faculty at other law schools about how to teach a similar course. In response, we’ve created a set of “out of the box” materials for instructors with no tech background to be able teach students the basics of legal expert system design and the skills they need to work with Neota Logic’s software.

The traditional model for a law school course is a casebook with a regulatory supplement and an accompanying teacher’s manual. Our materials can be described as an electronic casebook. They include explanatory videos, written materials, and workbook exercises to give students practice in the skills required to design legal expert systems. To take into account current economic pressures on law students, we are departing from the traditional pricing model. Rather than ask students individually to buy the materials – as they would casebooks – we are making them available to law schools for a licensing fee. Included under the license is access to Neota Logic’s platform during the semester the course is taught, so that students can apply the design skills they learn and build a working app.¹ (The terms of the license are set forth in the appendix.)

Below I explain in more detail what legal expert systems are and outline the pedagogic values of offering this course.

Legal Expert Systems

Legal expert systems are applications that replicate the thought processes and actions of a lawyer in connection with a specific legal question. These systems permit the rapid execution of complex logic and the generation of high quality documents tailored to a user’s specific circumstances. Typically they involve three steps: The application interviews a user to

¹ The course we are offering is a basic course to teach legal expert systems design. We are developing a second offering intended to teach advanced legal expert systems design. We anticipate that this second course will be a clinical hybrid in which student teams collaborate with legal service organizations and public interest law firms to develop apps that address the needs of the organizations’ constituents.
gather information; it applies that information to reasoning incorporated in a logic engine; and it generates a report that provides customized guidance and other documents of assistance to the user.

The reasoning engine, in a sophisticated legal expert system, incorporates different forms of legal analysis. These include rules-based reasoning, reflected in if-then statements, and mathematical calculations. It can also gather and organize information, apply multi-factor tests, and offer issue spotter analysis. Legal expert systems typically include a smart document-writing function to produce file-ready pleadings, letters, memos, and other documents that would be helpful to the user.

Creating a legal expert system involves first and foremost legal analysis. A system’s designer must understand how the laws, regulations, and cases are applicable to a specific legal question and how they relate to each other. She must also understand what information is required to answer the legal question posed. In addition to modeling law on the books, a legal expert system can incorporate the processes and rules of thumbs that lawyers use to assess client matters. Developing a legal expert system typically involves working with experts with significant practice experience to surface and articulate their tacit expertise.

After a legal expert system has been designed on “paper,” it can be coded directly into software. Alternatively, the designer of the app can work in a platform, like Neota Logic, that provides an authoring interface to build the system without programming knowledge. (Analogous commonly used programs that incorporate “authoring tools” are software that allows users who don’t know how to code to build websites. Microsoft Excel, which allows users to embed mathematical functions in spreadsheets, is another example.)

Examples of legal expert systems built by our students in the last few years include:

- California Foreclosure Advisor
- A Short and Happy Guide to Health Care Coverage
- Gender Stereotype Harassment Advisor
- Wage Rights Advisor

II New and (Old) Pedagogic Values

At the most fundamental level, designing a legal expert system requires making explicit the reasoning underlying applicable law and identifying relevant facts. As in traditional courses, students learn to engage in careful analysis of how rules within a legal regime fit together and
how those rules apply to facts. To design a system, students must focus on what a particular legal provision (whether embodied in a rule, statute, or case) means. This requires developing a clear formulation of the rules and their logical relations. The student designing a system must also develop appropriate characterizations of the facts that will trigger application of the rules. To elicit legally relevant facts, she needs to formulate precise questions that an app’s user understands. Questions to the user need to be in plain English.

At the same time as they practice legal analysis, students also learn an approach to addressing legal problems that is increasingly relevant in the market for legal services in the 21st Century. Lawyers have traditionally treated each client matter as one requiring a unique, solution demanding, in-depth, factual investigation and exhaustive legal research. As recent news stories emphasize, corporate clients are increasingly impatient with this “bespoke” approach to legal representation. Instead, clients are asking lawyers to design standardized solutions to recurrent legal problems. A parallel trend is emerging in the consumer law revolution, where individuals are addressing their legal needs through inexpensive online services. Outside the private market for legal services, legal expert systems offer a powerful approach to address the broad scope of unmet legal needs. Expert system design teaches students to think about legal regimes as systems intended to further specific aims and confer particular powers, rights, and obligations. Designing Legal Expert Systems in the classroom is structured to instill in students a different way of framing solutions to legal problems.

The sample materials included with this introduction are:

1) a course overview that proposes how to organize a semester long class in designing legal expert systems and an outline of suggested topics;

2) two “Crush the MUSH” exercises that illustrate legal expert system design;

3) three videos: “The Big Picture,” which explains the concepts that inform the course; “Introduction to System Elements,” which outlines the steps to build apps in Neota Logic; and “Iron Tech Lawyer,” which illustrates the role of a legal design course in the training lawyers for the 21st century.

I would be delighted to discuss these materials and the relevance of legal expert system design in the current market. Please feel free to contact me.

Tanina Rostain
Designing Legal Expert Systems in the Classroom

General Term Sheet

Materials and Support Provided

- Teaching materials, including videos, workbook exercises, and explanatory and sample documents and applications. These materials are intended to teach students legal expert system design and the basics of building applications in the Neota Logic platform (available June 15, 2014)
- Detailed teachers manual, written for faculty new to teaching courses in law practice technologies (June 15, 2014)
- Sample syllabus (June 15, 2014)
- Access to Neota Logic platform under an educational license during the semester in which course is offered
- Technical support and trouble shooting assistance from Neota Logic technical staff
- Teaching support from Tanina Rostain and Kevin Mulcahy
- One-year hosting of student apps developed in the course

Licensing Fee and Additional Terms

- $15,000 fee per course each occasion the course is offered
- Sign-up by March 15th, 2014; fee requested by July 1, 2014