

## CIS Tidbits and Bytes

SPRING 2009 ISSUE 1



CIS Department Chair, Dr. Shi

### LINKS:

#### Temple University

<http://www.temple.edu>

#### CIS Department

<http://www.temple.edu/cis>

#### Newsletter Editor

[CIS.Newsletter@Temple.edu](mailto:CIS.Newsletter@Temple.edu)



Satisfied Judges in the Future of  
Computing Competition of 2008

#### The Future of Computing 2009

<http://www.temple.edu/cis/events/futureofcomputing2009.html>

### A Note from the Editors:

Congratulations on your graduation from Temple University and the CIS Department. We hope you are as proud of your alma mater as we are of you, and that you are ready to embark, or have embarked, on a truly long-term learning experience. We also hope you will find that your Temple education has prepared you well for what lies ahead.

One of our goals in CIS is to undertake a number of initiatives to develop and sustain connections with our CIS alums. This Newsletter represents one of those initiatives. We trust you will find it useful and informative, that you will stay in touch, and that you will always take the opportunity to comment on this Newsletter as well as your experiences at Temple and successes in your post-Temple era.

As we get this venture off the ground, all of your comments will be appreciated and considered for future issues. If any of our topics strike a cordant note, please feel free to comment. We also welcome articles from our students and alumni.

### The Law Won... Sarbanes-Oxley Act of 2002 and IT

I am not writing this from a jail cell and I don't expect to have the IRS or Justice Department coming after me for past computing transgressions. But I will readily admit that I should have offered a lecture or two on the law as it pertains to our profession. I can hopefully rectify the situation with a discussion of one major compliance requirement and maybe hit a few others in later issues.

The first topic I want to address is SOX compliance. For the uninitiated, SOX or Sarbox is short for the Sarbanes-Oxley Act of 2002. The objective of the Act is to protect investors from corporate fraud. While the overarching goals are exemplary, they have created a huge burden on corporations and frightened countless executives because they can now be personally liable for failures to comply with regulations.

Does this mean that bad code is punishable by a government agency? As much as you wish it were felonious for anyone to code below your personal coding standards that is not exactly a SOX concern. The primary concern of this article is the compliance role of



ACM Awards Dinner

IT professionals. To begin, there are a number of questions that IT professionals might ask. Will I be told precisely what must be done via a comprehensive specification document? What do I do if the spec never mentions compliance? What are my personal responsibilities and must I consult a lawyer before I initiate a project? The biggest question concerns what practices we can implement in IT to assure that our organization will be compliant.

Ideally, the business specification will have an entire section devoted to compliance. Testing and documentation protocols will be identified and everything will have been reviewed and approved by corporate legal counsel. But you may find that individual applications do not always undergo individual legal

scrutiny. It is reasonable to assume that corporate counsel has already issued a set of enterprise wide requirements that must be adhered to for all IT project work.

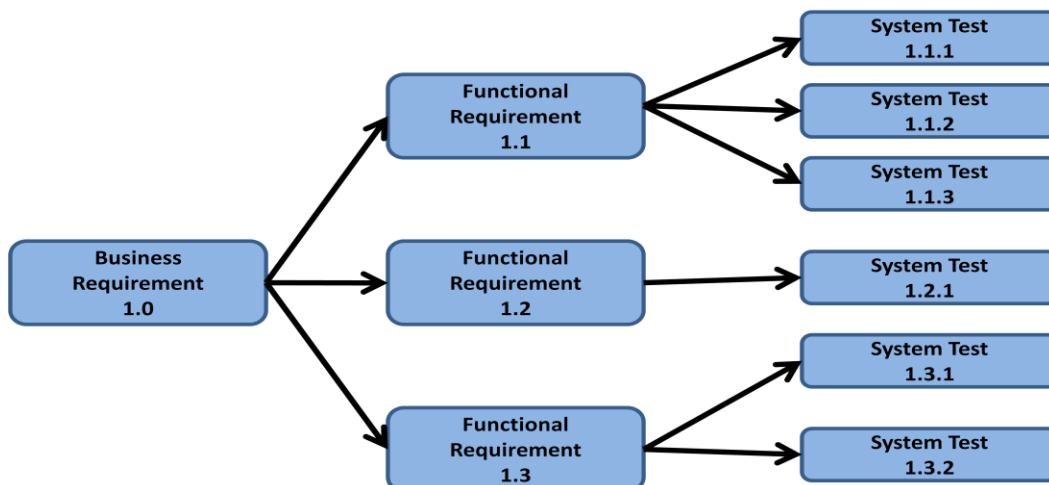
IT professionals must also be prepared to adjust to the situation where the corporate guidelines are not clear. We know that the government compliance requirements exist, and when the corporate standard doesn't exist then we must still take an appropriate course of action. At a minimum we must remind management of the necessity of compliance. Then we can recommend procedures that will assure that we have acted in accordance with the spirit of the law even if the letter of the law is not well defined.

One of the more powerful development and compliance tools available to us is the traceability matrix. If you are not familiar with the concepts of traceability, you can read on, or go back to the notes you took in your capstone course. ***Our professional objective is to be certain that we have internal controls and procedures that are followed, fully documented and reported.*** This is where the traceability matrix offers the most value. In essence, it is a database linked to an application that lists all of the requirements and associates them with the tests that are performed to demonstrate that features are both present and operating properly.



Dr. Friedman preparing for class

It is not enough to simply list requirements and tests. You must also have the ability to record test outcomes, revisions and retests. The structure of a simple relational database for a traceability matrix may look as follows:



There will be a large number of business requirements and each will point to one or more functional requirements. The functional requirements in turn point to one or more system tests. On average, there are typically two or three system tests per functional requirement. Consequently, the fan out may be considerable. In future newsletters we discuss the types of tests that should be performed and by whom.

Once the traceability matrix is created and populated, it then becomes necessary to build a test log to document that all tests were performed and that all tests passed before the product was put into production. The traceability matrix will be a major component of demonstrating compliance if it ever becomes necessary. The traceability matrix will also become a significant tool to improve the development process regardless of the system development life cycle that your team employs.

## The Future of Computing 2009



The department's Student Project Competition is scheduled for **March 29, 2009** in Wachman Hall. The competition is designed to recognize the best graduate and the best undergraduate student projects (three awards are presented in each category). The projects may be course projects, research projects, or any CIS projects performed by a CIS student or a group of CIS students during the Fall 2008 or Spring 2009 semesters. The Award Committee is composed of CIS students, faculty, and corporate sponsors and will select the awardees. The selection will be based on the following criteria:

### Award Presentation

- **Most Innovative Use of Technology**
- **Most Useful to the Proposed Community of Users**
- **Best Project Presentation**

There will be also a single award for the "Most Popular" project. It will be awarded based on votes of all attendees. The projects will be presented as posters combined with live software/system demos if appropriate. The participants will need to register their projects by providing title, abstract, and project mentor from our faculty. We will also provide help in selecting a mentor who will offer guidance and assistance.

We expect a large number of visitors from our department, Temple University, local industry, and high schools.



**AWARDS** The awards for the best undergraduate projects are \$2,000, \$1,000, and \$500. The awards for the best graduate projects are \$2,000, \$1,000, and \$500.

More competition details can be found at:

<http://www.Temple.edu/cis/Events/FutureofComputing2009.html>

## Proposed MS in IS&T

A new MS program has been proposed in IS&T. Below is the executive summary to give you an idea of what we would like to do, and to give you an opportunity for feedback.

The proposed program is designed primarily for people with an undergraduate degree in Information Science and Technology (IS&T). Students with Computer Science (CS) or related degrees who meet the prerequisite skills can also qualify. Students without these prerequisite skills can take 1 or more Computer and Information Science (CIS) department courses that provide the required skill set. The program requires 27 credits from 3 out of 4 Core courses, 5 electives, and a capstone course.

It will be attractive as an MS program to those who have just graduated with such undergraduate degrees or to established professionals desiring to upgrade their skills or who seek a career change.

Inasmuch as application domain knowledge is an important part of this type of degree, students are permitted and even encouraged to take 2 of the 5 electives in other departments. One might then expect that the capstone course would also be oriented in the direction of these electives. In this way, 3 of the 9 courses could be said to be domain oriented.

The goals of the program's required Core set of courses are to present an in-depth, technical understanding of (1) the processes of software development and its management, (2) systems security and privacy, (3) software systems administration, and (4) advanced and emerging technologies. Beyond this Core the program provides for 5 elective courses and a capstone project in which students can explore their own, more specialized needs. Electives can include courses in the existing CS graduate program, approved courses in other departments, and in time new electives that will be developed specifically to meet current demands of the IT industry.

For more information about the proposed MS in IS&T program, you may contact: Frank Friedman at [Frank.Friedman@Temple.edu](mailto:Frank.Friedman@Temple.edu), or send comments to [CIS.Newsletter@Temple.edu](mailto:CIS.Newsletter@Temple.edu).

## Direction

Now it is up to you to let us know about where we go from here. Please send us your ideas, recommendations, thoughts on lessons learned in your careers and at Temple, recommendations for change, or just say hello.

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