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Campus Computing News

UNT upgrading to WebCT Vista!

By [Jennie Vautrin](#), Center for Distributed Learning Instructional Consultant, [Jenny Jopling](#), Center for Distributed Learning Associate Director and [Dr. Maurice Leatherbury](#), Executive Director of Information Technology and Academic Computing

As the University of North Texas' population increases, the management systems that support our university must match that growth. Our online course management system, WebCT, is one such system: it serves more than 15,000 different students each long semester, and it is being upgraded to the latest version of the company's software, "Vista." We're upgrading to Vista because the new version offers greater flexibility and usability to faculty who design, manage, and teach online courses as well as to students who take online courses. In addition, it provides better reliability and expandability than earlier versions of WebCT. Some of the many Vista upgrades are described below.

Vista upgrades for Faculty

- **Content sharing:** You can now share content between your own multiple sections or courses, or with other faculty members and colleges. You no longer have to download and upload similar files into individual courses because you can access files from a centralized file management system. For example, you can access course templates that contain a set of pre-designed teaching and learning tools. Or you can create a template for a large multi-section course and automatically share content across the sections of courses. In addition, you can still maintain a specified level of security for your own content.
- **Selective release options:** The enhanced selective release options allow you to dynamically direct students' progression through course content based on multiple pre-defined criteria. For example, you can set the options to specify that all students who receive passing grades on an assignment will move on to the next course concept, while all students who receive failing grades will automatically be directed to remedial materials.
- **Efficient design access:** You can now add specific components, such as assignments, discussion topics, self-tests, or multi-media clips directly to the table of contents, organizer pages, or content pages. Instructors will

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no longer have to include complicated instructions directing students to a particular tool – students will be able to simply proceed through lessons completing assignments and tasks as they go. In addition, you can use the embedded HTML editor which saves you time as you avoid using a separate editor outside of the WebCT system.

- **Integrated teaching tools:** The learning tools within Vista work in conjunction with each other. For example, you can now add a dated assignment to the course syllabus, and Vista will automatically add the assignment to the central course calendar.
- **Extensive management and research capabilities:** You can now more closely track activity within multiple sections of courses, departments, programs of study, or colleges through a centralized management access point. You can monitor and analyze factors such as student usage patterns, individual and class performance on tests and quizzes, or how students navigate through online materials. You can also access cross-sectional student performance data.

Vista upgrades for Students

- **Efficient Learning Process:** Because instructors can now present course materials in a streamlined layout, selectively releasing components independently from “parent” components, students will meet required learning objectives according to the instructor’s preference. A student’s individual learning mode is enhanced with this capability.
- **Centralized access point:** Students can now access information for multiple courses from a centralized access point. They can view calendar and email information for multiple courses from one login page. Students can also view and communicate with faculty members or other students that are logged into the course with a tool called “Who’s Online.” In addition, they can receive university-wide announcements when logged into Vista.

Vista Tool upgrades for Everyone

Mail Features	You now have a global view of your email within all courses.
Calendar	You can now access your calendar entries for all courses from one access point.
Learning Modules (formerly Content Modules)	You can now add additional types of components to the Table of Contents in a Learning Module, including specific discussion areas and topics, chat rooms, assignments, and assessments.
HTML Editor	You can now create and modify single content pages using an embedded HTML editor.

My Files	Faculty and students now have a personal My Files folder for uploading, creating, organizing or maintaining their own files.
File Sharing	You can share selected content or templates within your own separate courses or with other instructors for use in their courses.
Chat	Instructors now have the option of controlling the flow of participation during a chat session by granting permission to one user at a time with the new hand raising tool.

Schedule of the Vista Upgrade

We have already installed the Vista software and hardware needed to support it and are ironing out a few problems with getting it running on the rather complex environment that is designed to provide failover if a single machine breaks. By the time the full implementation is operating, we'll have three Sun Microcomputer servers running one "layer" of the Vista software and two additional, larger Sun servers supporting the back-end Oracle database.

Current plans call for pilot training of faculty and testing of the Vista implementation this Fall (2003), with "production" training and conversion of courses in Spring and Summer 2004. We hope to have all current WebCT courses (and new courses) running on Vista by the end of calendar year 2004, at which time we'll decommission our current WebCT server and rely solely on Vista.

Questions?

Questions about WebCT and/or Vista can be directed to the Center for Distributed Learning, extension 2708, or by e-mailing [Jennie Vautrin](#), [Robin Bartoletti](#), or [Jenny Jopling](#).

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Changes in Authentication Services Greet the New Academic Year

By [Dr. Philip Baczewski](#), Associate Director of Academic Computing

A new account management system has been put in place for managing EUID passwords and other aspects of online login accounts. The new management page is located at <http://ams.unt.edu/> and is similar to the previous UNT Internet Services account management page, but now serves a much wider suite of applications.

Background and History of the EUID System

Online services are an increasingly important part of the University's operation. Students, in particular, are aware of this change, whether it's using online registration to schedule their classes, viewing their tuition charges via Web Bills, or checking their grades online. With the coming change to the University's administrative information technology systems, faculty and staff will also be using more and more Web-based applications to access various services provided to support their work at UNT.

In order to provide online information in a secure and accessible environment, an authentication system is needed to ensure that a request for service is actually coming from a person who is eligible to receive that service. Authentication requires a username that is recognizable to a number of different online systems and a password which is known only to the person requesting access. For a number of years, UNT has been using an electronic username called an EUID (Enterprise-wide UserID) to provide universal login to a number of online systems.

EUIDs were first used for providing student Internet E-mail accounts on ACS UNIX systems. As UNT Internet Service was developed to include E-mail, personal web pages, and dialup access, EUIDs were expanded to serve as login values for all of those systems. In order to have EUIDs available for use in a number of different online systems, in Fall 1999 an EUID database was developed using the LDAP directory services protocol and EUID values were assigned to all students, faculty, and staff known to the administrative computing systems (SIMS and HRMIS). EUIDs are now used for access to UNT Library electronic resources, various online student services, student E-mail (EagleMail), and many other UNT intranet-based facilities.

Most recently, the EUID database has been migrated to Novell's eDir LDAP server platform and management of that server has been transferred to the Computer and Information Technology Center's Network Computing Services

division. In addition, the LDAP service which provides authentication for EagleMail has been migrated to eDir as well, allowing the quick synchronization of passwords and other data between it and the central EUID server. As before, EUIDs are assigned based on data entered into the SIMS and HRMIS systems and are automatically generated when a student enrolls or when an employee is placed on the payroll.

Impact of Recent Changes

Recent changes are just one step toward creating a single-signon environment for online applications at UNT. Single-signon allows you to use the same username and password to access all online systems. On the one hand, it is more convenient to you because it means that you don't need to remember a slew of UserIDs and passwords. On the other hand, it means that you must be more diligent in setting a secure password and guarding it from discovery by others.

To that end, the new account management system includes a secret question and password feature that helps to identify you if you've forgotten your password and need to reset it. You can pick from a number of pre-selected questions and provide an answer that is personal to you. When picking your question, you should choose one for which the answer is obvious to you but not known to others.

Other changes which came with the new configuration include:

- individuals will now only have one EUID for use with all UNT applications -- some people who were both students and employees at UNT have had their EUIDs consolidated, with their ongoing EUID being the one associated with their primary role at UNT (i.e., student or employee);
- some systems which use EUID for authentication now use your secure password, rather than UNT ID number for access -- in particular this includes the UNT Libraries electronic resources;
- the Remedy trouble call tracking system used by the CITC helpdesk and other support areas on campus now uses your EUID and secure password for login access;
- personal web page management is no longer part of the account management system and now runs on the people.unt.edu server, but still requires EUID and secure password for access;
- students will automatically have an EagleMail mailbox created for them when their EUID is created -- faculty/staff will no longer be required to have an EagleMail mailbox to set and use a secure password;
- WebCT will continue to use EUID for login, but maintain a separate password until WebCT [Vista](#) comes into production.

Future Developments

As this academic year progresses you may notice a number of services which use your EUID and password for authentication. If you don't already have a secure EUID password, you can visit <http://ams.unt.edu/> to create your password and set your secret question and answer. Some UserIDs, such as your mainframe or Novell Netware login IDs, will remain unchanged for now, but eventually it may be possible to use one username for all of your login access.

As the PeopleSoft EIS system comes on line, faculty and staff will be using their EUID to connect to these new administrative applications. There are also plans to create a comprehensive E-mail directory which will allow faculty and staff to set their preferred E-mail address. Finally, use of eDir as the LDAP database will allow eventual tighter integration with the Novell Enterprise directory used to support faculty and staff desktop computing.

While the transition to the new authentication service is complete, it may have generated or may still generate questions from you regarding your EUID status. If you can't address those questions via the [Account Management System](#), feel free to contact the CITC helpdesk via E-mail (helpdesk@unt.edu) or phone (940-565-2324).

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They're Outta Here!

By [Claudia Lynch](#), *Benchmarks Online* Editor

Time has run out for Usenet Newsgroups and Dialup Network Services here at UNT. Academic Mainframe Services were terminated in May:

- **May 31, 2003** - Academic Mainframe Services were terminated for individual account holders. See "[Academic Mainframe Services to be Terminated](#)" for further details.
- **August 31, 2003** - Usenet Newsgroup Services to be Discontinued. See "[This Just In . . .](#)" for more information.
- **August 31, 2003** - Computing Center to Discontinue Dialup Network Services. Details are available in the April "[Campus Computing News](#)" article.

This Helpdesk [page](#) offers some advice on picking an Internet Provider.

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What the General Access Lab Staff Did During Your Summer Vacation

By [Dr. Elizabeth Hinkle-Turner](#), Student Computing Services Manager

Though the summer has been hot, the managers of the UNT General Access Computer Lab System have been hard at work preparing their facilities for the fall. Also implemented this summer was a slight name change (we are now General Access *Computer Labs*) and the creation of a logo for the lab system (more on that later).

Equipment Upgrades

Several labs upgraded their equipment. The College of Education ([COE](#)) lab, located on the third floor of Matthews Hall now provides 50 new 3.06 GHz Pentium IV machines. Each machine features read-writable CD-ROM drives, zip and floppy drives and a front panel that includes two USB-2 ports, a firewire port, and volume-control headphone port. Six of the stations also have document scanners. Students are invited to bring their personal headset and listen to their favorite CDs while they work on assignments.

The lab located in ISB 205c (the graduate computer lab - [SLIS](#)) updated its Macintosh G4 computers to OS X and have added Quark and Stuffit Deluxe to the already extensive list of software available on them. All lab PCs now have CD-ROM burners. The lab has added books on SPSS and SAS to its large manual collection and also has new computer tables. On the personnel front, the lab has added a *consultant* position. In addition to the lab monitors answering questions, patrons can now ask application-specific questions of the consultant. The consultant's hours will be posted on the lab door this fall.

The [ACS](#) Adaptive lab, located in ISB 110 upgraded its computers early in the summer to 3.06 GHz Pentium IV machines. Each machine has a CD-ROM burner and front panel USB ports. Students are encouraged to bring USB "flash" or "thumb" drives to the lab; they require no drivers for use and plug in easily to the front panel ports. The lab will also have several demos of new adaptive equipment in late August and an update on additional adaptive equipment purchases will come in the future.

In other areas, several equipment upgrades were provided to classroom machines



and the College of Arts and Sciences has added 4 web access kiosks to the third floor commons area of the GAB.

Adobe Acrobat "Read Aloud" Feature Added

Other items of note include the new Adobe Acrobat 6.0 reader which includes a "read aloud" feature for the reading of Adobe PDF- formatted documents. This is of special importance to our blind patrons and is available currently in the [College of Education](#), [College of Music](#), the [Graduate](#), the ACS [Adaptive Lab](#), and all the [CAS](#) labs. Additionally most labs now feature double-sided printing as the default printer setup for paper conservation. Single-sided printing is available by request as is color printing in many of the labs.

Changes at COBA

We bade a fond farewell to Jan Brothers, the [COBA](#) General Access Computer Lab manager, this year as she "retired" to move on to a new career. However, we also give a warm welcome to new COBA lab manager Charlie Brien!

New Name, New Logo

Finally, in addition to a slightly new name given to the General Access lab system, the managers commissioned and adopted a logo which is displayed prominently in all General Access Computing facilities. In addition to the logo for the system, each individual college and area has its own lab logo created from new titles and different color schemes added to the general design. Patrons can easily distinguish the labs now with the new prominently displayed signs and posters featuring the logo in each of the general access computing areas.

Looking Toward the Future*

As always a new and returning hard-working student lab staff is found in each of the labs and they look forward to serving you during this next busy year!

* For a glimpse of the past, click [here](#) to see a comprehensive list of articles that have appeared in *Benchmarks Online* on the General Access Labs since 2000.

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Computer Buying Tips for Students

By [Teresa McUSIC](#) , Ft. Worth Star-Telegram

*This slightly edited article was originally titled "Back-to-school computer buying tips," and appeared in the Ft. Worth Star-Telegram (Posted on Fri, Jul. 25, 2003). Teresa McUSIC's column appears Mondays and Fridays. (817) 460-5514 - and was used with permission. We reprint it here because it answers questions a lot of people have **and** our own Dr. Philip Baczewski, Associate Director of Academic Computing Services, is quoted extensively. You can also find this article on the ACS [Website](#).*

July is usually mark-down time as computer companies use aggressive pricing strategies to attract back-to-school buyers.

In July, industry leaders Dell and Hewlett-Packard Co. announced back-to-school promotions, leading the way in a charge that should help shoppers get a bigger bang out of their computers without breaking the bank.

Just ask Philip Baczewski, associate director of academic computing services at the University of North Texas, where in a few weeks, many of the college's 30,000 students will swarm the campus armed with new computers.

"There's no reason for parents to spend \$2,000 for their children's computer when a \$600 computer will do everything they need to do," Baczewski said.

The principles of shopping for a computer are largely the same whether you want a computer for a dorm room or your home: Identify how you plan to use the computer and buy a machine with the features and power to allow you to do it.

For incoming college freshman, the computer debate often boils down to laptop versus desktop. At least, that was the most frequent computing question asked at freshman-orientation sessions this summer at Texas Christian University, said Walter Wallace, a computer-support counselor at TCU.

There is no single right answer, Wallace said, which may frustrate computer novices. "It all boils down to personal preferences," Wallace said.

Typically, laptops are more expensive than desktops in terms of dollar-for-dollar computing performance. Portability has its price.

A laptop is better for taking notes in class, working in the library and collaborating on team projects. But it's also more easily dropped or stolen. Desktops are usually anchored in a student's living quarters. But most are more powerful than laptops and can handle more tasks and add-on hardware.

With many \$500 PC models now equipped with DVD players and with dorm-room space at a premium, the desktop PC can become a media center, storing and playing music and movies, providing Internet access and making class assignments easier to complete.

Laptops are limited, in comparison, because they are not designed to handle a wide array of add-on equipment. "You can't do a media center with a laptop," Wallace said.

Whether buying a machine for home or school, here is what shoppers should keep in mind, according to computer experts:

- **Remember the software:** Once you buy the hardware, you'll probably want to invest in software. Shop the software section before you buy your machine to make sure you can afford both the machine and the software you want.
- **Not all processors are created equal:** Don't judge the microprocessor on numbers alone. An Intel Pentium, for example, stores more data for quick use than does an Intel Celeron, meaning that Pentium chips process information faster than Celeron chips rated at similar speeds. Like the Pentium, the AMD Athlon chip is generally considered better than the Celeron.
- **Never enough RAM?:** RAM is memory used by the computer to store and manage active software files. More RAM helps a computer run smoothly and respond to commands faster. Figure on buying at least 256 megabytes of RAM for a base system. If budget allows, experts say, a good place to splurge is on a system with 512 megabytes of RAM.
- **Sizing the hard drive:** The hard drive is the equivalent of a computer's closet: It stores everything not actively being used at the moment. For most users, the 40 gigabytes offered in most basic desktop systems is sufficient. Students heading off to college, however, may benefit from an 80 gigabyte hard drive that will allow them to store more music and videos on their machines.
- **Accessing the Web:** College students need computers with 10/100 slots, which allow the machines to tap into high-speed Internet services. Students with laptops should invest in a wireless card using the 802.11b standard. Many universities, including UNT, TCU and the University of Texas at Arlington, are expanding systems that allow properly equipped laptops to access the Internet wirelessly in some buildings.
- **Integrated versus dedicated video cards:** For video games, a machine with the proper video card is important. A dedicated video card essentially has its own computing resources to process video, improving the performance of the video game. An integrated video card essentially borrows processing power from other parts of the computer, which can hurt the performance of the game and the computer overall.

For a more complete discussion of any issue described here, type "buying a PC" into an Internet search site such as <http://www.google.com/>. That will help you find sites with unbiased PC buying advice and product reviews.

If you're still overwhelmed, remember that most campuses have computer labs that students can use to complete assignments.

While it may not be ideal, students can use on-campus experience to learn what they need in a computer. Each course of study will have its own computing needs, so waiting can make as much sense for some as buying now, said Baczewski, of UNT.

"If you don't know if a computer is a pressing need or not, let the student come to school for a semester and find out what the requirements will be," Baczewski said.

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Free Software Licenses: A General Overview*

By [Shannon Peevey](#), UNT Central Web Support

The SCO Group (SCO) (Nasdaq: SCOX), the owner of the UNIX operating system, announced today that it has filed legal action against IBM (NYSE:IBM) in the State Court of Utah, for misappropriation of trade secrets, tortious interference, unfair competition and breach of contract. The complaint alleges that IBM made concentrated efforts to improperly destroy the economic value of UNIX, particularly UNIX on Intel, to benefit IBM's new Linux services business. (The SCO Group)

The announcement above, made on March 7, 2003, began the “march” of the SCO Group, formerly known as Caldera, against the Linux kernel. The free software, or open source, movement, led by the Free Software Foundation and the Open Source Initiative, were to this point sure in step, and purpose, in the creation of software that would be licensed under permissive licenses which protected the rights of end users everywhere. With this announcement, however, many Free Software leaders needed to step back and assure the rest of the technology industry that these allegations of “intellectual property” appropriation were completely unfounded.

Six months later, it seems that the SCO Group might be foundering in its claims, and that the free software licenses, and in particular, the GNU General Public License, have served their purpose in providing a bulwark of protection for free software users and developers. But, what have free software developers learned from this situation? Have they learned anything?

As many reporters point out, the Free Software movement is facing the reality of becoming involved in big business, and a part of that reality is the importance of being aware of copyright laws and licenses that are available to help protect software from litigation. In this article, we are going to take a look at the reasons behind the free software movement, the organizations that lead it, look at some similarities that permeate all open source licenses, and then compile an overview of ten popular free software licenses that are used in many free software projects, as well as, listing the most important differences between these licenses. By doing this, we will be able to look at the most popular licenses that are being used to protect free software, and create a repository of licensing information, so that project managers will have an easier time in choosing a license that is appropriate for their projects.

But first...

We need to discuss the Open Source Initiative, the Open Source Definition, and the reasons for its creation. The Open Source Initiative was a brainchild of Eric Raymond, a leading defender of free software tenets, and Bruce Perens, head of the Debian GNU/Linux project, and was created in an effort to promote the open source development process to businesses. They believed that the open source development model “produces better software than the traditional closed model”, and have taken it upon themselves to set the standards by which outsiders can measure the “openness” of a license or a project. (Open Source Initiative [index.php](#)) They have done this by publishing the Open Source Definition, which is a list of ten criteria which must be met for a license or project to be called “Open Source”. These criteria are (Open Source Initiative [docs/definition.php](#)):

1. Free Redistribution

- The license must allow for free distribution of a program and any derivatives of said program. This is to protect from the temptation to ever license a project in a way that would force others to pay royalties for the software.

2. Source Code

- All software must provide easy access to the machine-readable source code. (Either through inclusion with the software, or from a central repository that is easily accessible).

3. Derived Works

- The license must allow for redistribution of the original version of the software, or derivatives thereof.

4. Integrity of The Author's Source Code

- The license must provide for a mechanism by which modifications can be traced. (This is to protect the author's reputation).

5. No Discrimination Against Persons or Groups

6. No Discrimination Against Fields of Endeavor

7. Distribution of License

- All redistributions of a product, or derivative thereof, must be accompanied with the same rights as the parent.

8. License Must Not Be Specific To a Product

9. License Must Not Restrict Other Software

10. The License must be technology-neutral

If a license is submitted to the Open Source Initiative, and the Open Source Initiative staff find that license to be legally acceptable, by meeting the requirements of the law, plus these criteria, they then add it to their list of Open Source Initiative-approved licenses. (There are now 45 OSI-approved licenses).

The reason behind the creation of the Open Source Initiative, was the fact the founding members wanted to move away from the connection of the open source development model, with the term “free software.” “Free Software” is the term that Richard Stallman and Free Software Foundation uses when referring to open source, or to them, free software. This is because both “open source” and “free software” “*convey different ideas*”. (Free Software Foundation </philosophy/free-software-for-freedom.html>) “Free software is a matter of the users' freedom to run, copy, distribute, study, change and improve the software”, (Free Software Foundation </philosophy/free-sw.html>) whereas “open source” means “You can look at the source code.” (Free Software Foundation </philosophy/free-software-for-freedom.html#relationship>)

Eric Raymond and crew decided that the term “free software” was hindering the movement's ability to be accepted by big business in general. Therefore, when Netscape decided to release its browser's machine-readable source code to the public in 1998, Eric Raymond, in conjunction with many top free software programmers, came up with the term “open source”, and started the Open Source Initiative to promote the term and the software that it pertains to.

To date, they have been very successful in generating interest with big business, as Oracle, IBM, and all of the major hardware vendors either support or have contributed to “open source” projects. (As an aside, it must be mentioned that the Free Software Foundation and the Open Source Initiative still work together on many things. It is interesting that when SCO began spreading rumors about Linux and its alleged breach of SCO's intellectual property, the “open source” community, once again, looked to the Free Software Foundation as its compass...)

Second...

We need to discuss the similarities among all of the Open Source Initiative approved licenses. Since the Open Source Initiative has an openly available set of criteria, and that criteria must be met for a license to become OSI-approved, there are obviously going to be similarities amongst all of the licenses that are going to be viewed in this paper.

These similarities can obscure the uniqueness of each license, and it may seem apparent that there is probably not a need for a large number of OSI-approved licenses. But, in fact, there are already 45 such licenses, and many more are being submitted to the OSI for approval at the present time.

Why is that? For one, these licenses are able to address issues that might be of particular importance to a certain sector of software usage, or development. Another reason, might be that these licenses might be used as form of free advertisement for a particular group or individuals, and finally, the new licenses might address newer issues that were not apparent at the time when the seminal licenses were written. Needless to say, the licenses that will be reviewed in this paper are considered to be OSI-approved, and therefore, have these common threads (The Open Source Initiative <docs/definition.php>):

1. The “user” has permission to use the software for any reason, make modifications and redistribute the software in original or modified versions, if certain requirements are met.
2. The license must contain a notice that notifies a “user” that the software should be considered “As Is” and is without warranty.

Even the most simple licenses, such as the BSD License, from University of California at Berkeley or the MIT License, contain these important elements, and, from a historical note, these points are directly descended from the GNU General Public License, which was the first real “copyleft” license, and is still the most strict, of all free software licenses.

Third...

It is important to understand the differences between OSI-approved licenses. To do this, we are going to discuss ten specific licenses that are OSI-approved, including the GNU General Public License, the BSD License, and Apache Software License. In doing so, the author hopes to create a broad overview of Free Software/Open Source licenses for the interested project coordinator, and help them to decide which license will fit their particular projects goals and needs.

The first license that we are going to look at is the Open Software License Version 1.1. This license was written by Lawrence E. Rosen, general counsel for the Open Source Initiative, and submitted to the Open Source Initiative for acceptance as a license that meets all of the tenets of the Open Source Definition. ([Open Source Initiative /docs/certification_mark.php#approval](http://www.opensource.org/docs/certification_mark.php#approval)) This license is currently one of the most complex licenses that we will look at on this list. The reason being that Mr. Rosen has tried to add components to this license that address new issues, such as patent licensing, and also uses legal language that is an attempt to deal with legal holes that might appear in less carefully worded licenses. This license contains our two common threads (The Open Source Initiative [docs/definition.php](http://www.opensource.org/docs/definition.php)):

1. The “user” has permission to use the software for any reason, make modifications and redistribute the software in original or modified versions, if certain requirements are met.
2. The license must contain a notice that notifies a “user” that the software should be considered “As Is” and is without warranty.

As well as (The Open Source Initiative [/licenses/osl.php](http://www.opensource.org/licenses/osl.php)):

1. Grant of Patent License

-The “Grant of Patent License” clause gives the user rights to any patented materials that were placed in the software by the previous distributor. (Distributor meaning the person from whom a user has obtained an open software-licensed product.)

2. Exclusion of License Granting

-Excludes the user's rights from anything that is not expressly

stated within the contract. (Excludes users rights from any trademarks, patents, or copyrights, that the licensor holds, but is not included in the current product).

3. Acceptance and Termination

- This clause actually states that you show your agreement to this license if you redistribute the product, limited to the terms of the license. If any of these terms are omitted or broken, then the user's rights are terminated immediately.

4. Mutual Termination for Patent Action

- This clause terminates all rights given to a user under this license, if a user files any sort of litigation against the Licensor of the product.

5. Jurisdiction, Venue and Governing Law

-States that any litigation over product must take place in the jurisdiction that the Licensor resides in.

6. Attorneys Fees

-If a user is found to be entitled to any damages that occurred under the license, they are entitled to recovery of costs and damages, plus attorney fees.

7. Miscellaneous

- Protects the license, and claims that any part of this license that is found to be non-enforceable, does not void the license, but only the part that is unenforceable.

Though a very comprehensive license, the Free Software Foundation warns of incompatibilities with the GNU General Public License, and difficulties in discerning if the “copyleft” compatibilities “really work”. (Free Software Foundation </licenses/license-list.html#SoftwareLicenses>)

But what is “copyleft”?

Now, we must take a moment and discuss the term “copyleft”, and why we will be using this term so frequently. First of all, “copyleft” is a term that was coined by Richard Stallman as a reference to the way in which the GNU General Public License reverses the intended purpose of the copyright license.

Copyright licenses, up to this point, had been used by Licensors as a way of restricting the rights of users in an effort to protect a part of their “intellectual property”. What the GNU General Public License did, was “to guarantee your freedom to share and change free software--to make sure the software is free for all its users”. (Free Software Foundation </licenses/gpl.html>) It did this by taking advantage of the existing copyright law, and wording the license in a way that gave end-users the same rights as the Licensor, allowing the end-user to modify, redistribute, and make use of software that was licensed under the GNU General Public License as if it were their own. Needless to say, this has had huge

ramifications on the computer industry. (Many of which are only now being felt).

As was mentioned before, the GNU General Public License was the first true “copyleft” free software license, and remains the most strict. To understand this, we must see the criteria that a true “copyleft” license must meet. A true “copyleft” license must meet the following four criteria (Free Software Foundation </philosophy/free-sw.html>):

1. The freedom to run the program, for any purpose (freedom 0).
2. The freedom to study how the program works, and adapt it to your needs (freedom 1). Access to the source code is a precondition for this.
3. The freedom to redistribute copies so you can help your neighbor (freedom 2).
4. The freedom to improve the program, and release your improvements to the public, so that the whole community benefits (freedom 3). Access to the source code is a precondition for this.

Plus (Free Software Foundation </copyleft/copyleft.html>):

1. “Copyleft is a general method for making a program free software and requiring all modified and extended versions of the program to be free software as well”.

Though we have already seen the first four tenets in our “Open Source Definition”, the final tenet for true “copyleft” brings many people to pause. This tenet means that your software that you have created cannot be included in any package, or aggregation of packages, (except for distribution media), that are proprietary, or could become proprietary at some point in the future! Though many computer enthusiasts find this to be acceptable, and even beneficial, many companies find this to be the difficult hurdle to overcome when studying the “open source” solution. How is one supposed to maintain a competitive edge, if all software one distributes, is open for all to see, and can be redistributed by anyone else...?

It is not appropriate to tackle this question here, but one can search for information on Cygnus Solutions, MySQL AB, and Red Hat, Inc., to find more information on the business possibilities that are available using the open source model. Needless to say, this “copyleft” idea is the purists' idea of free software development, and has proven to be a very effective tool in gathering developers, etc. around successful tools, such as the Linux kernel, the GNOME desktop, and the MySQL database server.

Now...

that we have discussed the Free Software Foundation and the GNU General Public License, it seems appropriate to cover the specifics of the GNU General Public License. The GNU General Public License, or GPL, is the most popular free software license. This license was created in response to an attempt by

Unipress Emacs to stop Richard Stallman from distributing his version of Emacs, a text editor, which contained bits of Unipress Emacs code. (Li-Cheng Tai) He wanted to create a way in which his software, (as the original author of Emacs), would never be restricted again. This effort eventually became the GPL. The GPL is the standard by which all other free software licenses are currently measured, and hence, it was the first to contain our two original threads (The Open Source Initiative [docs/definition.php](#)):

1. The “user” has permission to use the software for any reason, make modifications and redistribute the software in original or modified versions, if certain requirements are met.
2. The license must contain a notice that notifies a “user” that the software should be considered “As Is” and is without warranty.

It also requires that all software that is licensed under the GPL needs to be redistributed with the GPL, that all derivations must include notice of changes and licensed under the GPL, and all versions must contain a disclaimer of warranty. In a thoughtful clause, the GPL does define aggregation, and claims that aggregation on distribution medium does not force all of the software on the medium to be licensed under the GPL. Finally, it imposes a measure that forces the distributor to make the machine-readable source code available.

Next, we need to look at the second most popular license under which free software is licensed. The BSD License. This license was created in 1979 by the University of California at Berkeley in order to protect its own version of AT&T Unix, the Berklee Software Distribution, or BSD. (The FreeBSD Project) It was the very first free software license, but is not considered “copyleft”. It is a very permissive license, that allows for a user to do anything with the software they receive, even sell it, without access to the source code. The BSD License is very short, allowing free redistribution of software with only three requirements (Open Source Initiative [/licenses/bsd-license.php](#)):

1. Retain the copyright notice, the list of conditions and a disclaimer of warranty with distributions of source code.
2. Retain the copyright notice, the list of conditions and a disclaimer of warranty with distributions of binary executables.
3. The names of the <organization> which originally created the software cannot be used to endorse any modified product without written permission .

The Apache Software Foundation has been one of the great success stories in free software. Their HTTP server, the Apache Web Server, has dominated the web server usage in all markets for the past six years. And, as of August 2003, it is being used in 64% of all internet websites, with Microsoft IIS taking up 24% of the rest. (NetCraft) Many attribute this success to its business friendly license, the Apache Software License, which, as of version 1.1, users must (Open Source Initiative [/licenses/apachepl.php](#)):

1. Retain this Copyright notice.
2. Distribute the binary executable with this copyright and license in

the documentation.

3. The end-user documentation must contain:

- “This product includes software developed by the
<organization name> <URL>.”

4. The copyright holder cannot be used to endorse software without written consent.

5. The product derivatives must not have <organization> in name without written consent.

6. The disclaimer of warranty.

This license is OSI-approved but not considered “copyleft”, because it can be combined with proprietary software.

Another success story for free software is PERL. The Practical Extraction and Retrieval Language was created by Larry Wall in mid-1980's, in a reaction to system administrative needs that were not being met by other programming languages. With a linguistics background, Larry Wall wanted to create a programming language that would allow programmers to program in a way that was convenient for them, and to have access to advanced text manipulation capabilities. Needless to say, he succeeded. PERL is one of the most popular and portable languages in the world. Actually, an interesting side note is that PERL was once the only language that you could use to administer a Microsoft Windows server.

PERL is now being released under the GPL, but it was initially released under the Artistic License. Because of the prevalence of PERL, it seems important that we take a look at this alternative license. (As a matter of fact, your PERL software can be released under either the GPL or the Artistic License). The Artistic License contains our two common threads, and the following limitations (The Open Source Initiative </licenses/artistic-license.php>):

1. Users may copy if they include the original copyright and associated disclaimers.

2. Versions that are modified with bug fixes and port fixes can still be considered the “Standard Version”. (“Standard Version” is the version that is considered to be authoritative).

3. Users may modify the “Standard Version” if they include notification of the time and date of the changes AND:

- they make the modifications freely available, or;

- they only use the modified application within their organizations, or;

- they make other distribution arrangements with the copyright holder.

4. They may distribute executables if:

- they include instructions on how to get the “Standard Version”, or;
 - include the machine-readable source code, or;
 - make other arrangements with the copyright holder.
5. They may charge for:
 - Copying fees
 - Support services
 - If the user includes the licensed software with a commercial project, AND does not advertise the licensed software as their own.
 6. Input and output from programs in licensed under this Artistic License does not fall under the copyright of the license.
 7. The name of the copyright holder may not be used to endorse or promote products without written consent.
 8. Disclaimer of warranty.

Though this license is OSI-approved, it again fails the “copyleft” test. This is because of the third clause in section five, which states, “If the user includes the licensed software with a commercial project, AND does not advertise the licensed software as their own”. This essentially allows a distributor to include an Artistic Licensed software into a proprietary application, which could have restrictive licensing and force the removal of the Artistic Licensed software from the realm of free software.

Lawrence E. Rosen, the author of the Open Software License, has also authored the Academic Free License. The Academic Free License is complex, and mirrors the Open Software License in many ways, including the “Mutual Termination for Patent Action” clause that causes the “copyleft” problems with both licenses. It differs from the Open Software License in the fact that it does not include the “Grant of Patent License” clause, or either the “Jurisdiction, Venue and Governing Law” and the “Attorneys Fees” clauses. This license is not “copyleft”.

The MIT License, which is “copyleft” compatible, is a simple license that is very similar to the BSD License. It only contains the two common threads that run through all of the licenses... That is all. (Actually, the author wonders at the compatibility of this license with the GPL... But, greater minds than his have pondered this).

The Common Public License is a complex license that is not “copyleft”. It seems to have been written by IBM, and is OSI-approved. This license grants (The Open Source Initiative </licenses/cpl.php>):

1. non-exclusive, royalty free rights to use Common Public Licensed software.

2. Non-exclusive, royalty free patent licenses. (Much like the Open Software License).

The license imposes the following limitations on distribution (The Open Source Initiative </licenses/cpl.php>):

1. Must comply with terms of this license agreement.
2. Distributed product's license agreement must:
 - disclaim liability of contributors
 - states that provisions to license are limited to that contributor
 - makes source code available with this agreement
3. Contributors must identify themselves as the originator of their contribution.

Finally, this license addresses some issues with commercial distribution, such as (The Open Source Initiative </licenses/cpl.php>):

1. A contributor that includes a Common Public Licenses program in a commercial offering, cannot do it in such a way as to hinder any future contributor.
2. If the above point does happen, then the offending contributor must defend and indemnify all other contributors.

As you can see, this license is very complex, and it does address issues that would be of importance to the business world. But, it does “requires certain patent licenses be given that the GPL does not require”, therefore, the problem with “copyleft”. (Free Software Foundation </licenses/license-list.html>)

Python, like PERL, is a so-called glue language. Python was created by Guido van Rossum in 1990. (Python Software Foundation). It has an object-oriented programming foundation, which means that it is easy to write small components for a program, and put them together to do something greater, is strongly-typed, meaning that indentation matters within the Flow of Control of a program, and is fairly easy to learn, like PERL. This programming language has become more and more popular, and is now the equal to PERL. It is used in the dynamic content web server, Zope, and allows modules to be written in other languages, such as C or C++, and then have them directly accessible to the python script. The license under which it was distributed, and which is OSI-approved is not “copyleft”, but the newer versions of the Python License, or the CNRI Python License, are. The OSI-approved license that we are going to look at belongs to Python 1.6b1. This license basically states that this license is an agreement between the Corporation for National Research Initiatives and the end-user. It grants you (The Open Source Initiative </licenses/pythonpl.php>):

1. non-exclusive, royalty free rights, if:
 - this license is included in all derivative works
 - include the following text “Python 1.6, beta 1, is made

available subject to the terms and conditions in CNRI's License Agreement. This Agreement may be located on the Internet using the following unique, persistent identifier (known as a handle): 1895.22/1011. This Agreement may also be obtained from a proxy server on the Internet using the URL: <http://hdl.handle.net/1895.22/1011>". (Or, derivations based on your needs).

Limitations that are imposed on a user are (The Open Source Initiative </licenses/pythonpl.php>):

1. that changes must be noted in modified distributions.
2. That the license is terminated upon breach of agreement.
3. That the license is under the jurisdiction of the State of Virginia, and does not constitute any special permissions or business partnerships, that are not otherwise explicitly mentioned in this license.

It is the final section, Section 7, of this license which makes this license incompatible with the GPL, and therefore, not "copyleft".

The final license that we will look at in this paper, is the Zope Public License Version 2.0. This simple license is compatible with the GPL, but is not "copyleft". This license basically states that you can redistribute the licensed program in either machine-readable source code, or binary executable, if (The Open Source Initiative </licenses/zpl.php>):

1. you retain the copyright, this list of conditions, and disclaimer.
2. the licensor cannot be used to endorse products without written consent.
3. That you notify end-users of modifications that you make to the program.

In an interesting move, based on the brevity of the license, the Zope Public License revokes the rights to use of the licensors trademarks, etc., and points the user to a separate agreement with which they must agree before being allowed to use the licensor's trademarks, etc.

In Conclusion

It is very important for software project managers to be aware of the laws that protect free software. The current political and business environment is becoming much more [volatile](#) towards free software, and companies, such as Microsoft, Sun Microsystems and SCO, are beginning to bring litigation against this imminent threat to their livelihoods.

This means that project managers for free software projects are finding themselves the targets of lawsuits and mud-slinging, and though they may find this sort of environment distasteful, the author believes that a solid knowledge of the copyright laws, and the "open source" licenses that they are using to protect their software with, will help bring solace in the midst of the storm. The

author also believes that it is not only important for project managers to have this knowledge, but for end-users as well. For the “open source” development model depends upon the end-user to submit bug fixes, or improvements to the favorite software projects, and they can only do this if they become familiar with the licenses that they are agreeing to when they participate in the free software community.

This article has tried to address this apparent lack of knowledge by explaining the reasons behind the free software movement and the organizations that lead it, by look at some similarities that permeate all open source licenses, and then by compiling an overview of ten popular free software licenses that are used in many free software projects, as well as, listing the most important differences between these licenses. By doing so, it is the hope of the author that project managers, information technology officers, and the general end-user will take the time to become acquainted with the laws that protect the software that they use and implement. It is believed that if they do, they will find that there are many limitations and restrictions inherent in free software, and their usage. But, it is also believed that they will realize that these restrictions will lead to a better overall technology situation for all people in the future. Not just the ones with money. As any member of a democratic society should already know, freedom is not free...

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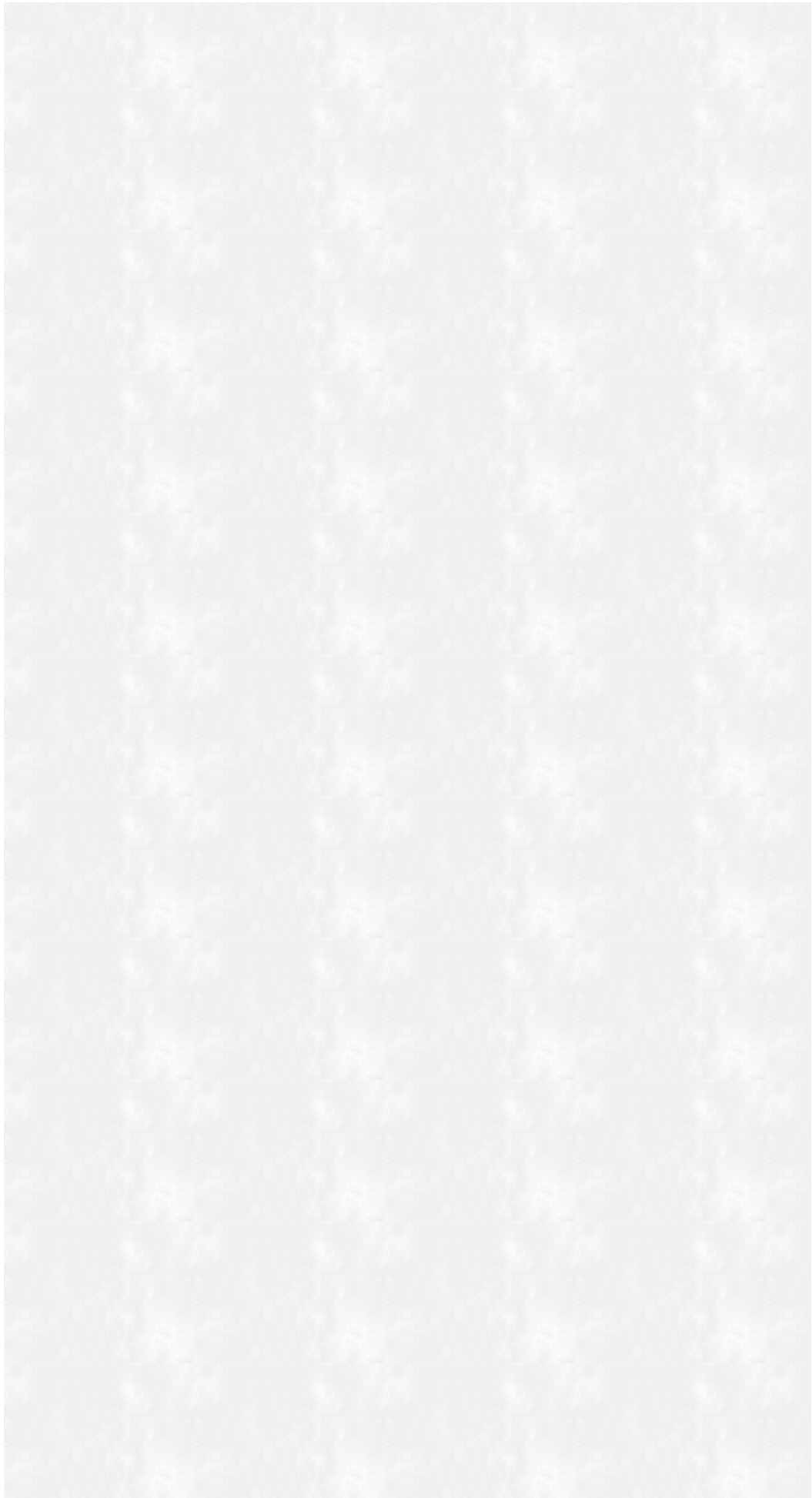
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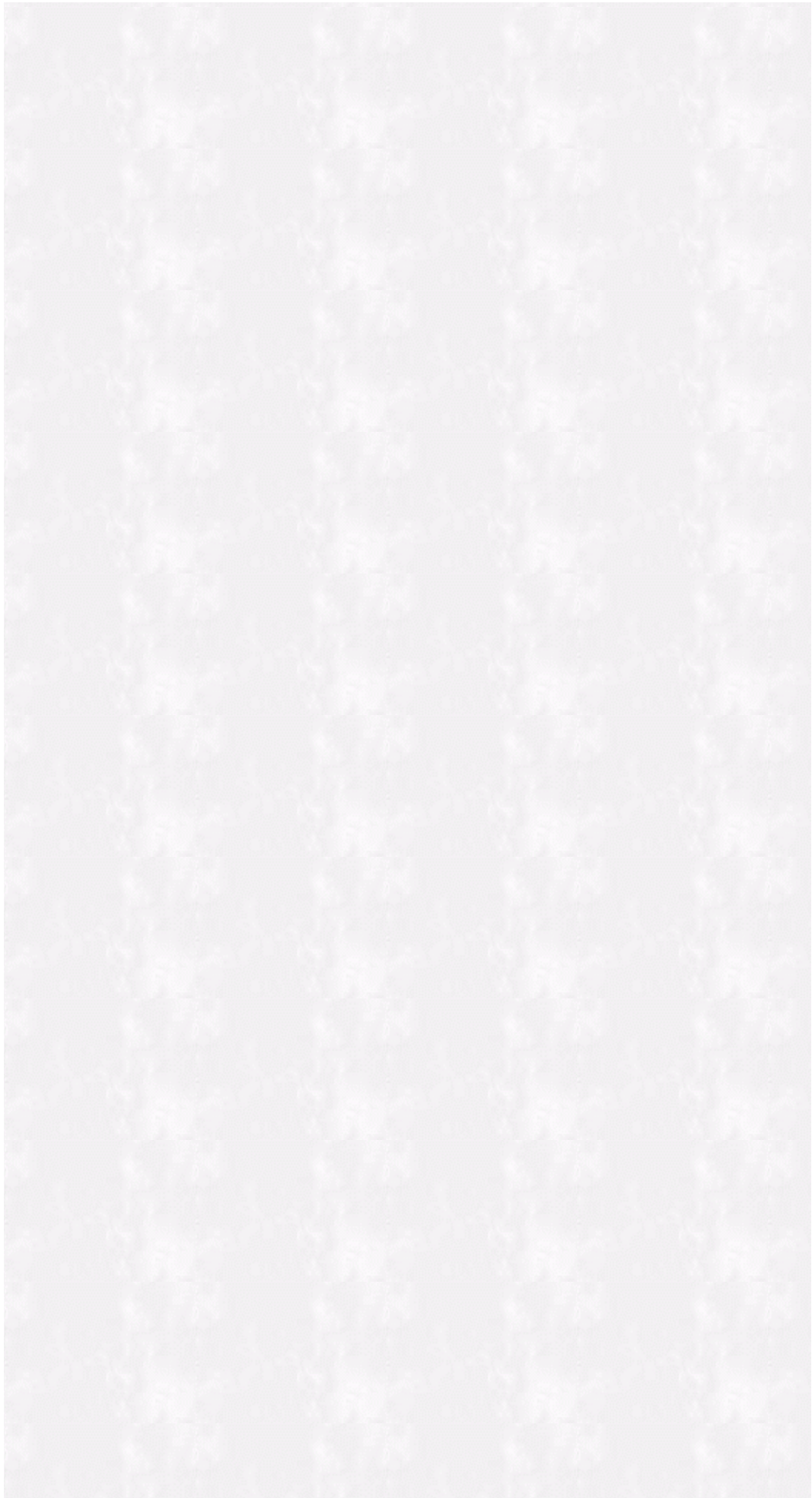
Internet-online. <<http://opensource.org/licenses/zpl.php>>

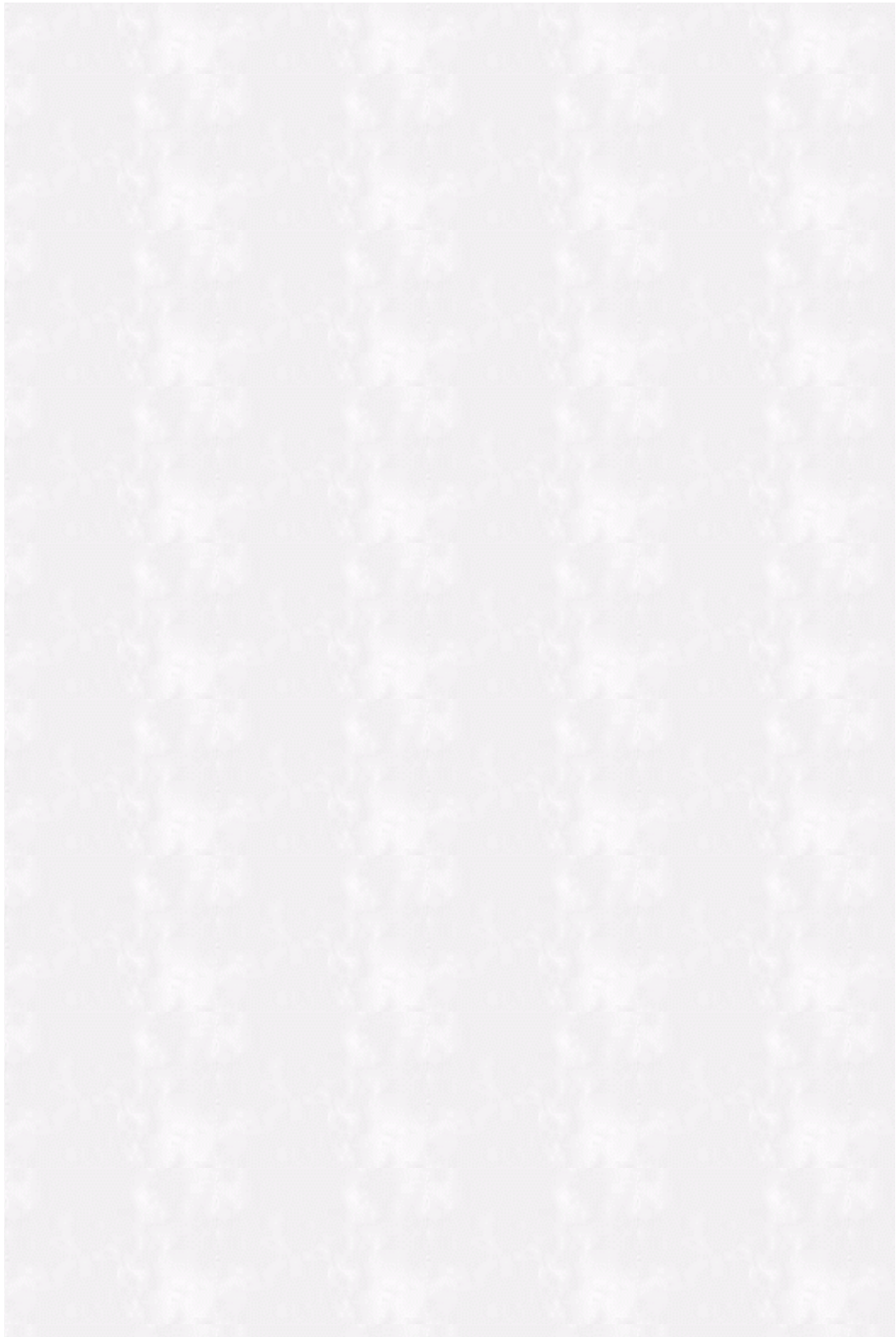
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*Shannon began discussing the Open Source Movement in his July *Benchmarks*

Online [article](#) "How Does "Intellectual Property" Hamper Technology?" - Ed.







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Customer Service Hotline



"It's Casual Friday. Mind if I call you 'dude'?"

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Network Connection

By [Dr. Philip Baczewski](#), Associate Director of Academic Computing

Microsoft's Ultimately Unsuccessful Strategy

It seems as if we've lived this story before. A vulnerability is found in Microsoft's Windows operating systems. Microsoft issues a patch on July 16. On August 16, the Internet gets hammered by a bunch of infected Microsoft systems that are trying to spread the infection and perform a denial of service attack on some of Microsoft's servers (see CNet's [article](#), "Worm exploits a widespread Windows vulnerability").

It's tempting to criticize Microsoft for their shoddy programming, but I have to wonder what all those Windows users were doing for a month. Maybe they were on a beach somewhere sipping cool drinks. Maybe their book of the month was particularly interesting. Maybe they got together in small groups to sing the Monty Python SPAM [song](#). But, they weren't applying Microsoft's update to prevent the worm from exercising its control over their computers.

Still, 18 months after Bill Gates [stated](#) that "Security is top priority," Microsoft seems to be reactive rather than proactive on security. All I can say is thank goodness we have Polish [hackers](#) who can discover these kinds of problems for Microsoft. One has to wonder whether Microsoft's quest for innovation includes any innovative software quality control (maybe they can buy those Polish hackers!).

Microsoft's strategy so far seems to be "We'll innovate and you'll pay for our innovations." Yet, they don't have a very good track record of being innovative or of leading technology movements. They've been very good at being reactive. IBM's building a PC - Microsoft cobbles together an operating system (they originally were just trying sell their compiler and other application software to IBM). Apple changes the personal computing paradigm and Microsoft hacks together a work-alike which after 3 or 4 tries begins to resemble what Apple started with. The Internet explodes in growth and after a while, Microsoft wakes up and produces a browser, buys and re-brands some web development software, and develops the notoriously insecure Internet Information Services (AKA their interpretation of a web server).

Microsoft's Stumbling Block

The Internet has proven to be Microsoft's stumbling block. Microsoft's tremendous success at exploiting an open hardware standard has suddenly become stymied by open software standards. Over the last 10 years they seem to have been reinventing the wheel in an innovative, but somewhat square shape. To make money, they must produce proprietary software over which they have total control. Internet software, however, has been through an extensive sifting process so that after almost 15 years, what we have left are the best and

most reliable strategies for moving information across a world-wide network. Microsoft's reinventions of that technology can only be pale shadows of their open source counterparts.

And here we get to the part where I put on my prognosticator's hat and predict that the need to sell proprietary software will ultimately lead to Microsoft's failure. Why? The reason is that we'll get tired of buying it. I think software has evolved a critical mass of program base so that ideas can be implemented in a world-wide programming community without the need for large-scale capital investment to support that development. LINUX is an instance of the idea of an operating system kernel. [AbiWord](#) is an instance of the idea of a word processor. If you are a writer, you can claim ownership of your instance of the expression of an idea, but you don't own the individual words -- the building blocks -- which you compile to express it.

The open source [movement](#) has already had a tremendous impact on the computing industry, whether you accept the pundits who say it's good or the pundits who say it's bad. When you can affect the corporate strategy of an IBM or Oracle, I'd say that's definitely an impact. Companies which embrace the concept of open software standards will reap an ultimate benefit. In the next version of it's semi-open OS X, Apple will be incorporating a derivation of the FreeX86 version of the X11 windowing standard. This means that thousands of open source and even proprietary applications will be just a compile away from running on Mac OS X. Apple is adding value to its proprietary operating system by expanding the community of software that can run on its computers. Windows, with it's closed and proprietary structure, can't hope to compete.

The Version Game

I've long contended that it is the globalization of the Internet which has made the open source movement such a tremendous success. Once you have a critical mass of programmers, testers, and users, self interest is translated to public interest. I think that most open source developers take on projects to solve problems they are facing and the ability to find others with same concern makes it possible to create a quick solution, at least quick in software development terms. The U.S. government can try to legislate and regulate so that control of intellectual property remains the right of a select few corporate entities, but unless George Bush's plan for world domination is a success, the rest of the world will flow around us like a river surpassing a boulder stuck in the mud.

I'm a bit tired of the version game. For example, the Finale music software folks would like me to buy Finale 2003, but they haven't even created a native OS X version and the Finale 2000 I have makes all the notes I need to make. So, I don't think I'll be buying the eventual equivalents of Word 2015 or Windows XX (eXtra eXpensive) either. Instead, I'm interested in computing solutions which expand my choices rather than narrow them. And who knows... maybe if I ever have any spare time, I'll start an open source music scoring project.

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IRC News



Minutes provided by Sue Ellen Richey,
Recording Secretary

IRC Regular and Ex-officio Voting Members: Judith Adkison, College of Education; Donna Asher, Administrative Affairs; Craig Berry, School of Visual Arts; Lou Ann Bradley, Communications Planning Group; Cengiz Capan, College of Business and GALC; Bobby Carter, UNT Health Science Center; Matt Creel, Student Government Association; Christy Crutsinger, Faculty Senate; Jim Curry, Academic Administration; Don Grose, Libraries and University Planning Council; Joneel Harris, EIS Planning Group; Elizabeth Hinkle-Turner, Student Computing Planning Group; Tom Jacob, College of Arts and Sciences; Abraham John, Student Development; Jenny Jopling, Instruction Planning Group; Armin Mikler, Research Planning Group; Kenn Moffitt, Standards and Cooperation Program Group; Ramu Muthiah, School of Community Services; Jon Nelson, College of Music; Robert Nimocks, Director, Information Technology, UNTHSC; John Price, UNT System Center; Philip Turner, School of Library and Information Science and University Planning Council (Chair, IRC); VACANT, Graduate Student Council; VACANT, Staff Council; VACANT, University Planning Council; Virginia Wheelless, Chancellor, for Planning; Carolyn Whitlock, Finance and Business Affairs; **IRC Ex-officio Nonvoting Members:** Jim Curry, Microcomputer Maintenance and Classroom Support Services; Richard Harris, Computing Center and University Planning Council; Coy Hoggard, Computing Center/Administrative; Judy Hunter, GALMAC; Maurice Leatherbury, Computing Center/Academic; Doug Mains, UNT Health Science Center; Patrick Pluscht, Center for Distributed Learning; Sue Ellen Richey, Computing Center (Recording Secretary); Ken Sedgley, Telecommunications.

July 15, 2003

VOTING MEMBERS PRESENT: PHILIP TURNER, Chair, ELIZABETH HINKLE-TURNER, COY HOGGARD (for JONEEL HARRIS), PAM HIGHT (for DON GROSE), ROBERT NIMOCKS, MICHELLE AMORUSO (for DONNA ASHER), LOU ANN BRADLEY, KENN MOFFITT, DUNCAN ENGLER, WIL CLARK (for JOHN PRICE), JUDITH ADKISON **NON-VOTING MEMBERS PRESENT:** RICHARD HARRIS, JOE ADAMO, MAURICE LEATHERBURY, JUDY HUNTER, PATRICK PLUSCHT, SUE ELLEN RICHEY (Recording Secretary) **MEMBERS ABSENT:** CENGIZ CAPAN, RAMU MUTHIAH, JIM CURRY, CRAIG BERRY, JENNY JOPLING, JON NELSON, CHRISTY CRUTSINGER, VIRGINIA WHEELLESS, CAROLYN WHITLOCK, DOUG MAINS, TOM JACOB, ARMIN MIKLER, BOBBY CARTER, ABRAHAM JOHN

The minutes of the Tuesday, June 17, 2003, could not be approved because there was no quorum for the meeting.

IR Steering Committee

The Chair reported that the IR Steering Committee had not met since the last IRC meeting.

DCSMT, Instruction Planning Group, Research Planning Group

Maurice Leatherbury stated that there was nothing significant to report for the Distributed Computing Support Management Team. There was no report from the Instruction Planning Group. There was no report from the Research Planning Group.

Standards & Policy Planning Group

Kenn Moffitt reported for the Standards & Policy Planning Group. He distributed a draft of Group E-mail Guidelines for review by the Council. Kenn pointed out that guidelines have been in existence for some time, but that this draft contains a major change which states that “everyone” email messages are not considered “incidental personal use” of the e-mail system (“incidental personal use” is defined in University policy 8.5, “Use of University Phones, Phone Lines, Fax Machines and Computers for E-mail for reasons other than official University business”). The new draft also addresses enforcement of the guidelines by Vice Presidents. In the discussion that followed, Maurice Leatherbury pointed out that reminders about the appropriate use of group email are sent out periodically when there seem to be a lot of “everyone” messages being sent. Maurice added that the Council should consider whether these guidelines should be a policy or just remain guidelines. In response to a question from Dr. Turner, he further explained that there is no official “screener” of group email messages; currently anyone can choose the “everyone” group on GroupWise and send a message without permission from anyone.

Richard Harris added that the original guidelines were endorsed by the IR Steering Committee when it was under the Provost. Since the IR Steering Committee is now headed by the President, he suggested that the Guidelines reflect that in the first paragraph which currently refers to the Provost.

Patrick Pluscht commented that he feels like event notification is a very useful use of email, so he did not object to that usage. Duncan Engler commented that in his department he uses the criteria of whether or not his department would be willing to spend funds to distribute a flyer to make the same announcement to decide if the email announcement is an appropriate use of state resources.

In further discussion, Maurice added that a Portal is going to be established in the near future which will hopefully provide a way for people to get announcements when and if they want them, rather than have them appear in their GroupWise mailbox.

The new Guidelines will be presented for a vote at the next meeting of the IRC.

EIS Planning Group

Coy Hoggard reported for the EIS Planning Group. He announced that the first PeopleSoft application providing central back-office purchasing is live as of today, and being used to process Fiscal Year 2004 orders, and looks like it is working well. He commented that because the purchasing office staff is checking each posted requisition very carefully, this has resulted in low volume usage with a relatively small number of requisitions having actually been processed at this point. Hoggard added that until the distributed component is implemented this processing does not impact the departmental users. Coy stated that everything is still on schedule with General Ledger going live in late August and early September; and Admissions and Contributor Relations around the end of September. Maurice Leatherbury congratulated Coy and the whole EIS team for this major accomplishment, noting that seven months is all it has taken to get this far.

Student Computing Planning Group

Elizabeth Hinkle-Turner reported for the Student Computing Planning Group that they will soon meet to finish putting together questions for the student computing survey and will bring the questions to the IRC for its review in September.

Distance Learning Team

Patrick Pluscht reported that the Distance Learning Team met June 19 and looked at Virtual Reality Portal software which was developed by College of Education faculty for distance education. The faculty members involved are developing the software so that it will run on multiple platforms, and is designed to provide a virtual classroom experience for students taking web-based courses.

Patrick announced that the national WebCT Conference is this week in San Diego and several staff members are presenting at it. He also announced that the sixth distance learning classroom is open in the UNT Dallas campus, and they are setting up a video conference room at the Research Park for the Engineering Dean. Patrick thanked Kenn Moffitt for his presentation on ADA compliance in distance learning. Kenn added that the AccuVerify software allows instructors and staff to maintain websites by finding ADA deficiencies and then suggests ways to correct the deficiencies. A server has been purchased that will notify developers of ADA non-compliance and assist in trying to fix the errors it finds.

Maurice Leatherbury announced that [Vista](#) 2.0, the latest version of WebCT was installed 3-4 weeks ago, and is up and running. Someone from WebCT was on campus recently to train CDL and Computing & Info. Technology staff on Vista. They plan some back-end enhancements on Oracle in the Fall, but it is working well now. They plan to start doing test courses this Fall and open it up for full development in the Spring and start converting courses over the next year. In response to a question from Patrick Pluscht, Maurice stated that the plan is for the old version of WebCT will go away in September of 2004, but that date may be negotiable.

Communications Planning Group

Lou Ann Bradley stated that the Communications Planning Group would present the Network Connections Policy in September, since there was not a quorum present today.

Other Announcements

Judy Hunter announced that the General Access Labs have a new [name](#), "General Access Computer Labs."

Richard Harris announced that the Federal government approved the PeopleSoft acquisition of JD Edwards, which will complicate Oracle's attempt at a takeover of PeopleSoft, and which is encouraging news for UNT.

IRC Meeting Schedule

The [IRC](#) generally meets on the third Tuesday of each month, from 2-4 p.m., in the Administration Building Board Room. From time to time there are planned exceptions to this schedule. All meetings of the IRC, its program groups, and other committees, are open to all faculty, staff, and students.

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Research and Statistical Support University of North Texas

RSS Matters

Link to the last RSS article here: [R Commander: A Simple Windows Interface for R on the Windows Platform](#) - Ed.

One-way Repeated Measures and Corresponding Multiple Comparisons using SPSS and R

By [Mike Clark](#), Research and Statistical Support Services Consultant

Hello, my name is Mike Clark and I'm the newest addition to the RSS group here on campus. Having settled in I decided it'd probably be worthwhile to begin contributing to the benchmarks articles and hopefully help others out with problems I come across or feel are probably worthy of discussion.

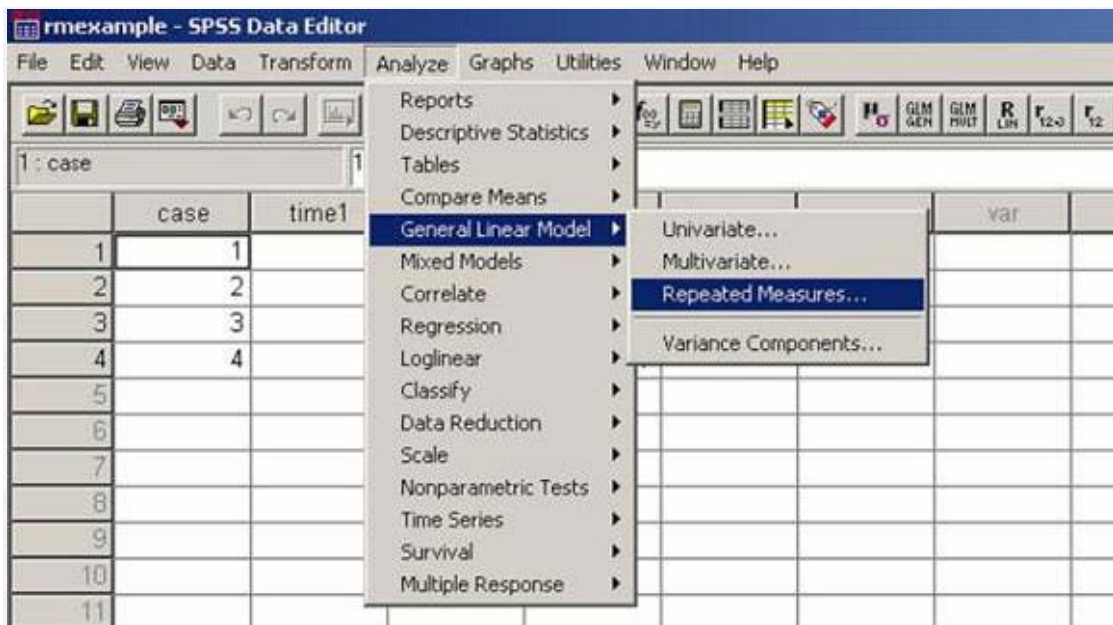
One of the first problems I tackled in my new position involved performing a one-way repeated measures in SPSS. Though not necessarily a technically difficult procedure compared to many, it can be a trying experience attempting to implement software in order to give good estimates of multiple comparisons. In order to begin we'll need to cover the basics so we know what we're doing and trying to accomplish.

In the one-way RM design, each person or subject under study is scored on multiple occasions of some measure. In other words they have several scores on some dependent variable. For example, perhaps they are given some test on different occasions over time, or are tested on multiple items related to some construct (e.g. a depression inventory). To contrast this with a typical Analysis of Variance (ANOVA), all participants undergo these multiple treatments, rather than be relegated to belonging to one treatment or another. The table below shows how one set of data might look:

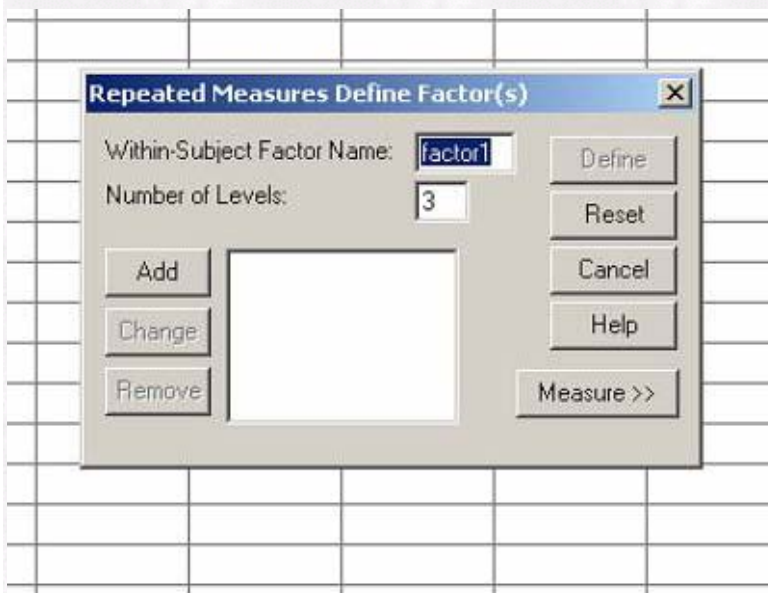
Case	Time1	Time2	Time3
1	5	6	7
2	4	4	6
3	3	5	7
4	2	4	7

First of all we'll want to know if there is an overall effect of some change over time. That is what our basic F test will tell us in this situation. In SPSS our mouse clicking will go something like this:

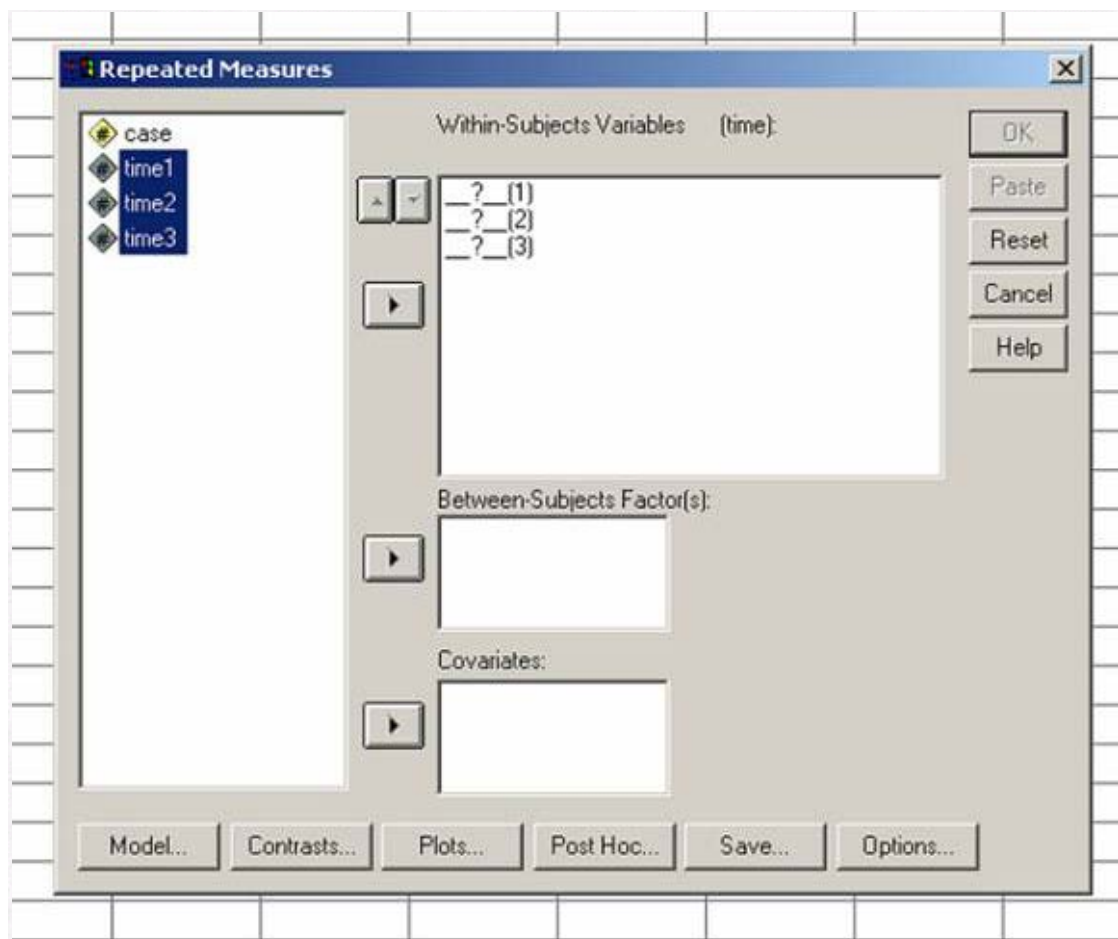
Analyze/General Linear Model/Repeated Measures



Next we'll have to define the factor of study. From the table above we have 3 levels of treatment (i.e. time 1,2,3), and we'll call the factor TIME (instead of factor1). Click "Add" after giving the name and number of levels:



Now we click "Define" and we're all set. Now on the box we'll need to highlight our 3 variables of interest (time1-3), and move them over to the "Within Subjects Variables" area by clicking on the arrow between where the variables are on the left and where they're going on the right.



Now at this point we could just click ok and go to our output, but we might have another question on our mind. Perhaps we want to know about specific differences between, for example, time1 and time2 or time2 and time3. In order for this to work out we'll need some sort of multiple comparison feature.

If you had some particular relationship in mind you want to test due to theoretical reasons (e.g. a linear trend over time) one could test that by doing contrast analyses available in the contrast option before clicking ok. One that might be useful in the above scenario is the "Repeated" contrast that would compare time1 to time2, time2 to time3 and so on.

Here's the gist comparing the different contrasts available which are deviation, simple, difference, Helmert, repeated, and polynomial.

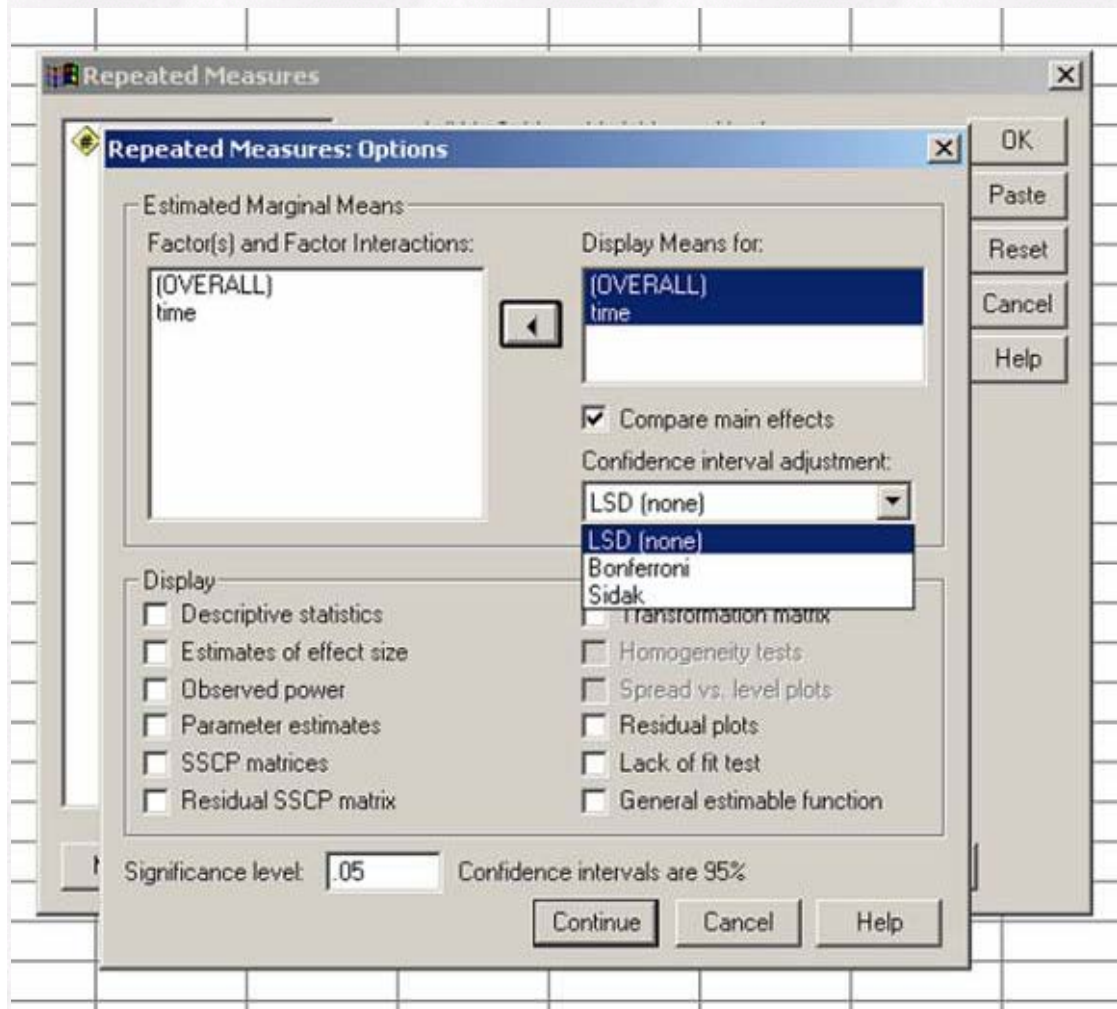
Deviation	Compares the mean of one level to the mean of all levels (grand mean)
Simple	Compares each mean to some reference mean (either the first or last category e.g. a control group)
Difference	Compares level 1 to 2, level 3 with the mean of the previous two etc.
Helmert	Compares level 1 with all later, level 2 with the mean of all later, level 3 etc.
Repeated	Compares level 1 to level 2, level 2 to level 3, 3 to 4 and so on
Polynomial	Tests for trends (e.g. linear) across levels

If on the other hand you aren't dealing with a time based model (e.g. you're dealing with particular items from some measurement scale) or just don't have any preconceived notions of what to expect you'll have to perform some sort of post hoc analysis. One's first inclination might be to click Post Hocs and look for the good ol' Tukey test. However you'll be left in the lurch in this case if you do so.

So now how are you going to do conduct a post hoc analysis? Technically you could flip your data so

that items are in the rows with their corresponding score, run a regular one-way ANOVA, and do Tukey's as part of your analysis. However along with there not being a non-tedious way to go about this you would still be in trouble because the appropriate error term would not be used in the analysis. In fact, in treating the data as a between groups design you'd have a larger error term which would make it more difficult to find a significant difference. In short, the result would be a more conservative estimate but what you gain in terms of type I error you lose in type II error.

What you'll want to do then to maintain (maximum!) power is to perform your comparisons within the repeated measures design. To begin with, at your Repeated Measures dialog box click on options. Along with descriptives, effect size, etc. that you'll want to click you'll notice that there is a white space for displaying the factor means and overall mean for the items/levels/times you're looking at. Go ahead and move the options on the left into that space and observe that the option to "Compare main effects" underneath it becomes available. Click that option. Now you have three options to choose from for these comparisons, only one of which you'd probably use. LSD or Least Significant Difference (no not that other stuff) just goes about the t-tests comparing one level to the other with no correction involved at all. Of course your type I error rate goes through the roof and you end up saying lots of things are significant when they really probably are not (to find alpha rate for multiple t-tests figure $1-(1-\alpha)^c$ where c is the number of tests you perform).



So what we're concerning ourselves with here is controlling our overall error rate by changing the error rate used for each comparison. The Bonferroni attempts to correct this by dividing your alpha by the number of comparisons. In our example this would be 3 (i.e. 1 vs. 2, 2 vs. 3, 3 vs.1) so the alpha for each comparison would be $.05/3$ or $.0166$. Although this seems ok, in many cases we have many more than just 3 levels of a repeated measure we are looking at. For example, if we had 8 levels of a factor we'd need 28 comparisons, which by using the Bonferroni method we'd test each at the $.00179$ alpha level. Yikes! So if anything is "significant" great but good luck finding it. This is

perhaps the primary criticism of this method is that it is too conservative in many cases, leading to type II error or essentially throwing something that might be *practically* significant out the window. It also doesn't make much sense to base your finding of significance in one test exclusively on how many other tests you do.

The only option left is the Sidak.. It's correction is $\alpha_c = 1 - (1 - \alpha_e)^{1/j}$. In our current situation that would test comparisons at $1 - (1 - .05)^{1/3}$ or .0169. Not really different than the Bonferroni correction. In the 8 level scenario discussed previously we'd test at the .00183. Again not much different but if we want the best shot at finding a significant difference (maximum power!) we'd want to use the Sidak option in SPSS.

So is that it then? As far as SPSS is concerned yes, that's how we'd do our post hocs for a one-way repeated measures design. However there would be an even better way to do so using the statistical program R which unlike SPSS and other statistical packages is completely free. Using R one can do the Bonferroni, Sidak and other more (statistically) powerful corrections all at the same time. In our 3 level case let's say we did our comparisons and got a .02 p-value for each. Before we jump 'significantly' up and down we know we're going to have to deal with a correction, and as we already know that the .02 level doesn't cut it for Bonferonni or Sidak's corrected p-value needed.

Now if I punched these three p-values into an R program here's what I'd come up with.

	rawp	Bonferroni	Holm	Hochberg	SidakSS	SidakSD	BH	BY
[1,]	0.02	0.06	0.06	0.02	0.058808	0.058808	0.02	0.03666667
[2,]	0.02	0.06	0.06	0.02	0.058808	0.058808	0.02	0.03666667
[3,]	0.02	0.06	0.06	0.02	0.058808	0.058808	0.02	0.03666667

What this shows is my raw p-values and what they'd really be after correcting for overall alpha (in other words we're just thinking in general rather than per comparison). Again with Bonferroni and Sidak (both of them) we still miss the magical .05 level. But take a look at the BY at the end there. That refers to a correction (BY stands for Benjamini and Yekutieli) that takes into account the dependent nature of our variables i.e. that the same people are tested at the levels being compared. And what do you know? Significance! Even after the correction the "true" p-value would be .037, less than .05!

Now how do we do this? Well the good doctor [Richard Herrington](#) has already gone into glorious detail about it [here](#). Not only that but you can actually run the program for there on the webpage, you don't even have to have R on your machine! Essentially you do the noncorrected (LSD) version in SPSS and then just put your p-values into the program. Nothing too difficult.

That's about it for doing post hocs in a one way repeated measures design. Hope you were able to get something out of it. We'll see you next time.

Web and other references

On the problems of Bonferroni's correction:

Perneger T.V. (1998) BMJ, 316:1236-1238 (<http://bmj.com/cgi/content/full/316/7139/1236>)

An alternative to Bonferroni:

Benjamini, Y., Hochberg, Y. (1995). J.R. Stat. Soc. B, Vol 57, pp. 289-300.

Yekutieli, D. & Benjamini Y. (1999). J Stat Plann Inference, 82(1-2), pp. 171-90.

Speaking of Dr. Herrington, he says you should all check this out:

http://linuxtoday.com/news_story.php3?ltsn=2003-08-20-006-26-OS-SV-DV

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Logging Your Web Traffic

By [Shane Jester](#), Campus Web Administrator

Do you run an Apache Webserver? If so, are you tired of the consistent hassle of managing log files and generating statistics? I recently began playing with an Apache module that may make your life much easier. It is called `mod_log_sql` and you can read about it and download it from here: http://www.grubbybaby.com/mod_log_sql/

`Mod_log_sql` is an Apache module that allows you to log your Apache traffic to an SQL server. It used to be called `mod_log_mysql`, but it is no longer limited to just the MySQL database. To get it running you simply need to have an sql server running (it can be on the localhost or a completely separate machine) and install the module in your Apache server. The module comes with scripts that allow you to setup the tables on the fly for your server, or for those who like to get their hands dirty, there are specific directions on manually setting up the tables.

What are the advantages to using this module?

There are many advantages. The first advantage is the ease of managing the apache log files. The module allows you to log traffic simultaneously to the standard log files as well as the sql server. This means that I can more regularly rotate my apache log files to keep them under a reasonable file size without the headache of maintaining the data for end-of-month statistics. All the data is now in the sql database. This point leads to a second advantage. Since the log traffic is located in a database, I can setup scripts that generate simple or complex statistical reports for my end-users on the fly. They won't have to wait for me each month to get their web traffic information. Additionally, as a system administrator I can make more complex and exact searches on the database when I need to look for specific log entries than I could just using "grep". Also, the module comes with some perl scripts that allow you to extract the data from the database in a Combined Log format that you can pipe to your favorite log analysis tools for more complicated statistical information.

What about reliability?

What if the SQL server goes down? What about very high traffic loads? Well, the module has fail-over built-in. If the Apache server can't get access to the SQL server, it will start logging the sql insert statements to a text file that you designate. You can then either automatically or manually insert the data into the SQL server once you have reestablished a connection to the SQL server. As far as traffic goes, I have been running it on my system which generates approximately thirty-six million hits monthly for over month now with no

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[Online](#)

problems. I do get occasional entries in the failover file when the sql server gets very busy, but a simple UNIX cron job inserts them every night and resets the failover file.

The Bottom Line

There are many other uses and advantages to using this module, and the bottom line is it gives you greater flexibility with minimal overhead. Oh yeah, and it's free! So visit the website and give it a try. If nothing else, you might learn something.

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Short Courses

By [Claudia Lynch](#), *Benchmarks Online* Editor

The Summer Short Courses are over and we are working on the fall schedule. Please consult the [Short Courses](#) page to see the to see the course schedules and to register for the classes of your choice. We will have similar course offerings in the fall.

Customized Short Courses

Faculty members can request customized short courses from ACS, geared to their class needs. Other groups can request special courses also. Contact ACS for more information (ISB 119, 565-4068, lynch@unt.edu).

Especially for Faculty and Staff Members

In addition to the [ACS Short Courses](#), which are available to students, faculty and staff, staff and faculty members can take courses offered through the [Human Resources](#) Department, the [Center for Distributed Learning](#), and the UNT Libraries' [Multimedia Development Lab](#). Additionally, the [Center](#) for Continuing Education and Conference Management offers a variety of courses to both UNT and the general community, usually for a small fee.

GroupWise Training

GroupWise 6 classes are over for the semester. Check here to see if new ones have been announced: <http://ncs.unt.edu/> .

If would like to have a Basic GroupWise seminar for your area, please contact Jason Gutierrez, Campus Wide Networks, jasong@unt.edu .

Center for Distributed Learning

The Center for Distributed Learning offers courses especially for Faculty Members. A list of topics and further information can be found at http://www.unt.edu/cdl/training_events/index.htm The center also offers a "Brown Bag" series which meets for lunch the first Thursday of each month at Noon in Chilton 245. The purpose of this group is to bring faculty members together to share their experiences with distributed learning. One demonstration will be made at each meeting by a faculty member with experience in distributed learning. More information on these activities can be found at the [Center for Distributed Learning](#) Website.

Technical Training

Technical Training for campus network managers is available, from time to time, through the Network Computing Services (NCS) division of the Computing and Information Technology Center. Check the NCS [site](#) to see if and when they are offering any training.

UNT Mini-Courses

These are a variety of courses offered, for a fee, to UNT faculty, staff and students as well as the general public. For additional information surf over to <http://www.ed2go.com/unt/courses.html> .

Alternate Forms of Training

Many of the [General Access Labs](#) around campus have tutorials installed on their computers. For example, the College of Education recently now has Macromedia Tutorials for Dreamweaver 4.0, Flash 5.0 and Fireworks 4.0.

The [Training](#) Web site has all sorts of information about alternate forms of training. Computer Based Training (CBT) is one of the alternatives offered. Of particular interest are courses available via SkillSoft/SmartForce. See <http://www.unt.edu/smartforce/> for more information.

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Transitions

No longer working in the Computing Center:

Alana Skoric, Programmer/Analyst, Network Computing Support.

Lenny Benson, I/O Operator, Printing Services, Production Services (part-time).

Dennis Cunningham, Report Distribution Assistant (part-time).

Patrick Dunn, Telecom Assistant (part-time).

Awards, Recognition, Publications

Philip Baczewski, Associate Director of Academic Computing services, was recognized in the August 15, 2003 issue of *InHouse@unt* for offering "his [advice](#) to parents shopping for computers in the July 25 Fort Worth Star-Telegram."

Margaret Ambuehl, UNT/HSC Payroll/Personnel Data Systems Team Leader, was recognized for her 15 years of service to UNT in the August 1, 2003 issue of *InHouse@unt*.



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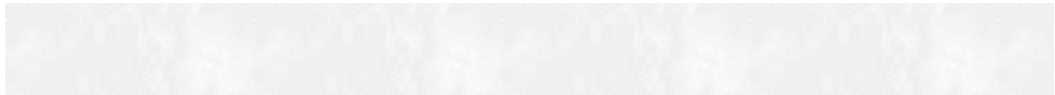
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We Have a New Look!

By [Claudia Lynch](#), *Benchmarks Online* Editor

You have probably noticed that *Benchmarks Online* is sporting a new look, just in time for the fall semester. Much thanks to Charity Beck, UNT Central Web Support, for all her hard work. Charity is the person behind the re-design of many Computing and Information Center Webpages as well as the CITC main page (<http://www.unt.edu/ccadmin/>).

We Have a New Look!



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Don't Forget Our Monthly Columns!

By [Claudia Lynch](#), *Benchmarks Online* Editor

In addition to our feature articles, *Benchmarks Online* publishes monthly columns that are focused on specific aspects of computing here at UNT (and beyond, in some cases). Check out what is waiting for you this month:

- [RSS Matters](#) - "RSS Matters" is the monthly column written by the Research and Statistical Support [Group](#) in Academic Computing Services. Their articles focus on topics of a statistical and/or research methods nature. This month's article is by Mike Clark and is titled "One-way Repeated Measures and Corresponding Multiple Comparisons using SPSS and R."
- [The Network Connection](#) - "The Network Connection" may well be the longest running column in computer publishing history. Certainly in University of North Texas computer publishing history. Dr. Philip Baczewski, Associate Director of Academic Computing, started writing the column for our [newsjournal](#), *Benchmarks*, in 1989. It was originally called "The BITNET Connection," but was renamed in 1991. Dr. Baczewski wrote then ("The Network Connection," *Benchmarks*, September 1991, page 13):

This month, "The BITNET Connection" officially becomes "The Network Connection." When this column began in March of 1989, the intention was to increase awareness of BITNET among members of the University community and to provide insights into the effective use of wide area networking. Although the University had been a member of the BITNET network since 1985, even by 1989, use of BITNET had yet to become widespread on the UNT Campus. In the intervening years, however, much has changed on the networking landscape. The use of BITNET seems fairly commonplace these days, possibly due to educational efforts on the part of Academic Computing Services (including this column), but more probably because of the increasing awareness of the wide-area-networking on the part of faculty, whether it be from their counterparts at other universities or through professional academic affiliations.

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It has become increasingly difficult to discuss BITNET without including the Internet somewhere in the conversation.

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Hence the name change of this column.

This month's column is titled "Microsoft's Ultimately Unsuccessful Strategy." Click [here](#) to read all about it.

- **[Link of the Month](#)** - As it says on the top of the "Link of the Month" page, "each month we highlight an Internet, USENET Special Interest Group (SIG), or similar mailing list(s) or Website(s)." Lately we have been confining ourselves to featuring UNT specific sites. This month we focus on "The UNT Homepage: www.unt.edu."
- **[WWW@UNT.EDU](#)** - "WWW@UNT.EDU" is a monthly column written by the Central Web Support [Group](#) in Academic Computing Services. The topics usually focus, , in some way, on World-Wide-Web-related issues. This month's topic is "Logging Your Web Traffic."
- **[Short Courses](#)** - Every semester, Academic Computing Services (ACS) offers short courses on computer-related topics, many of them having to do with statistical research. This column keeps you up-to-date on what is being offered and when as well as other training opportunities.
- **[IRC News](#)** - As their Webpage [says](#), "the IRC is an advisory and oversight body created to foster communication and cooperation between and among UNT information resources providers and users." We publish the minutes of the IRC meetings each month, when they are available. This month, the July 15, 2003 meeting minutes are featured.
- **[Staff Activities](#)** - This column focuses on new employees, people who are no longer employed at the Computing and Information Technology Center, awards and recognitions and other items of interest featured here.