Benchmarks Online

Volume 3 - Number 11 * November 2000

Feature Articles

Campus Computing News

Did you (or your students) get an EagleMail account? **It is very important for *all* students to have an EagleMail account.** Details inside.

Lab-of-the-Month

Which lab do you think is featured this month?

Holiday Hours

Find out what's going to be open over the Thanksgiving holidays.

TODAY'S CARTOON

Click on the title above for an information age laugh.

Don't forget to check out our monthly columns. This month's topics:

- **RSS Matters** -- "The All-encompassing SAS 8 (2/2)" A continuation of last month's RSS Matters, this article covers some more technical parts of the new SAS design and its upcoming development directions.

- **The Network Connection** -- "But is it Spam?" Think you can tell the difference?

- **List of the Month** -- This month's "list" is the long awaited GroupWise Tips Website.

Research and Statistical Support
University of North Texas

RSS Matters

The All-encompassing SAS 8 (2/2)*

By Dr.Karl Ho, Research and Statistical Support Services Manager

In the previous article, I introduced some of the new features in SAS versions 8 and 8.1. In this article I decided to cover some very basic but more technical parts of the new SAS design and its upcoming development directions.

Beginning in version 8, a product of the Nashville project that transitioned SAS into the real 32-bit computing environment, the SAS software evolved into a data system that in itself performs a multitude of statistical analyses and data functions. A number of add-on modules were built into the system, rendering the software one of the largest programs, which takes a minimum of 850 megabytes in typical installation. With the documentation and GIS files installed, this number can amount up to 2 gigabytes.

SAS 8 is engineered for 32-bit operating environments, namely, Windows 2000 although it works fine in Windows 98 and Windows NT. It taps into the server capabilities of the operating system to facilitate the client-server task sharing operations, and allow multiple users to share server or servers. While Windows 2000 incorporates a number of Windows NT designs/features, such as Terminal Services, it provides more room for SAS to further its client-server development designed for division of labor among computers.

For instance, the new MP CONNECT procedure in SAS 8 performs parallel multiprocessing that can be up to six times faster than serial execution (Garner 2000). Imagine running SAS on the Data Center Server version of Windows 2000 that accommodates up to 32 CPU's in handling 64 GB file operations-- which will not be uncommon in financial database operations-- as compared to a scaled down version of Windows 2000 Pro utilizing 2 CPUs with 2 GB RAM each. It is just like juggling multiple US Census files (exceeding 2 GBs) in a few minutes! Plus, can you find other software (not a programmer to custom develop codes) to perform the job?

When hardware is in the picture, SAS 8's edge widens, as it exploits Pentium III's Streaming SIMD instructions to facilitate faster completion of certain types of data operations such as data retrieval and floating point calculation. According to SAS' technical report, the new design in SAS 8 will have the processor pre-fetch data before they are actually needed for calculations. As a result, data processing can be as quick as the processor can run since data retrieval time is reduced to minimal (Mehler 2000).   Remember, we are not talking about 50 or 100 megabytes of data. When gigabytes of data are

involved, it can be translated into a matter of tens of minutes and even hours! With Windows 2000 NTFS, the system becomes genuinely capable of individual files exceeding 2 GB in size.

Future development

SAS 8.1 is geared toward taking advantage of the new Intel-based microprocessors and Microsoft's Windows 2000 operating environment.Within two years, the new generation of PC-based processor from Intel, the 64-bit Itanium, will replace the 32-bit Pentium and prepare desktop computing for the genuine parallel processing in the future server-to-server environment. With 64-bit addressing, at our finger tips is a machine that can have the number of memory addresses with digits our fingers can't count (yes, plus our toes)**. SAS' edge over other data analysis and statistical program may widen even more then when their current R&D on parallel processing pays off. On the horizon, we are anticipating desktop applications such as SAS that capitalizes the hardware data capability to share computation with remote servers or centralized data warehouses. In fact, servers will abound then (who do not have one!) and throughput will be our main concern about computation. \

References

Garner, Cheryl. 2000. *Multiprocessing with Version 8 of the SAS System* SAS SUGI Paper 16-25

Mehler, Gary. 2000. *Taking Advantage of the SAS System on the Windows Platform.* SAS SUGI Paper 280-25

Robert Ray. 2000. *Version 8 Base SAS® Performance: How Does It Stack-Up?* SAS SUGI Paper 9-25

What's New in Data Analysis on SAS Research and Development communities Web (http://www.sas.com/rnd/app/da/danew.html)

* In the next article, I will go back to more new SAS procedures and modules such as IML Workshop and Partial Least Square

** To be exact, it is 2^{64}, or 18,446,744,073,709,551,616, bytes.

Network Connection

By **Dr. Philip Baczewski**, **Associate Director of Academic Computing**

But is it Spam?

E-mail remains one of the more popular services on the Internet. If you have Internet access, you usually have an E-mail address or can easily get one. Some people use E-mail infrequently to correspond with their family or friends, but many people use E-mail to support their business, professional, or educational activities. Shortly after the invention of E-mail there came the bane of many of today's Internet denizens: unsolicited E-mail.

In the U.S., we get unsolicited postal mail pretty frequently. Some are annoyed by this "junk" mail, however, most deal with it by tossing it in the trash or recycle bin, possibly unopened. For some reason, junk E-mail often elicits a much less casual response from those that receive it. I've never heard of anyone threatening to sue because they received unsolicited pizza coupons in the mail, yet a single unsolicited E-mail can cause what appears to be a disproportionate response.

Spam through the Ages*

In the early, almost prehistoric Internet days -- around 10-12 years ago -- a term was coined for E-mail sent unsolicited or to an inappropriate forum. The common name is Spam, I guess because such E-mail is unwanted and possibly unpalatable. The problem was particularly apparent on mailing lists that were created to discuss a specific area of common interest. Mailing lists were captive audiences and too much of a temptation for some that felt they had to get their message across by any means. Spam E-mail was often sent to multiple mailing lists or news groups. In those days of limited bandwidth, even a single unsolicited message could disrupt the normal communication supported by mailing lists.

It wasn't long before mailing list managers found techniques for reducing unwanted messages and mailing list software was given features to help eliminate Spam messages. In the early days of the Internet, the online community was also quite small compared to today, and there was an established etiquette (or netiquette :) for mailing list communication and quite a bit of peer pressure to follow that etiquette. Because access points were limited, it was also hard to remain totally anonymous. Your personal identity might not be known, but it was an easy matter to track your message to its access point.

Today, unsolicited E-mail is usually directed at individual addresses. While it is possible to track most E-mail back to its source, entry points are so easily available that closing down a particular address will not stem someone's ongoing activity. Free E-mail accounts are available by the handful, and not all Internet service providers abide by the same etiquette that has been followed since early Internet history. There is also another incentive for people to send unsolicited E-mail: for some, the Internet represents a large market of people who are available to buy a particular product or service they want to sell. Today, unsolicited commercial E-mail is by far the most common complaint of those who tend to complain about such things.

Yeah, but is it Spam?

I often wonder why some people react so emotionally to unsolicited E-mail. Perhaps they feel that E-mail is part of their personal space, and unsolicited E-mail is an invasion. Perhaps it is because, unlike postal mail, you often can get drawn in by unsolicited E-mail before you realize what it is, and the disappointment at spending the 5-15 seconds reading something you don't care about is too much to bear. Perhaps it is just the very real desire not to be bothered. I guess this question requires the attention of trained psychologists before it can be authoritatively answered.

Over the years, the meaning of the term Spam has seemed to evolve. Different people define the term differently. Some people think that any unsolicited E-mail is Spam. Some think that Spam is only unsolicited commercial E-mail. Some would claim that not all unsolicited E-mail is Spam. They feel that if they find your E-mail address by a legal means, then it is not unethical to send you E-mail you never requested. Some even adopt such activity as an academic research pursuit. What is the harm done by a single unsolicited E-mail? Is it the time wasted reaching for the delete key? Is it the diversion of attention from more interesting material? Is it the increased annoyance of someone trying to sell you something in which you have no interest?

Is it the combined bandwidth used to send communication of doubtful effectiveness?

There is certainly no legal definition of Spam, and no total agreement in the Internet community as to what falls within the range of Spam. Spam can definitely be a nuisance to service providers. A set of several thousand messages going out from or coming to a site can greatly interfere with delivery of the "normal" messages. Those who send unsolicited messages often take advantage of mail servers that will relay their messages to the Internet recipients, even though they have no affiliation with that server and usually no authorization to use it in such a manner. Mail transfer programs now have sophisticated rules that can be used to help prevent such unauthorized transmission, but there are so many servers on the Internet that there are still plenty that will let Spam messages through.

What's an Internet Denizen to do?

I have bad news for the rabidly anti-Spam: Spam is here to stay. You can legislate against Spam in the United States and that will just push Spam off shore. You can send complaints to abuse and postmaster and webmaster and the domain contact for the offending sites through which Spam has been delivered to you, and all that does is take up more network bandwidth and soak up the time of usually sympathetic system administrators who are just trying to keep their little acre of Internet running.

Some people maintain filters on their E-mail to ignore messages which don't meet a particular criteria. To really guard against Spam, you should never give your E-mail address to anyone that you don't know and trust, and you should probably tell those people not to give out your address. This is certainly a solution, but seems a bit too insular to me. Once you send E-mail, you have no control over where that E-mail will end up. It may be forwarded intentionally or not, and end up in the hands of someone who doesn't know to guard your secret E-mail address. If you want to discourage unsolicited messages, it is wise to be very restrictive about putting your E-mail address on application or registration forms, or Web sites. You must also be careful about subscribing to open mailing lists or posting messages to news groups.

A Fifty Percent Solution?

One thing you can do is ignore Spam. Unsolicited noncommercial E-mail sent from a valid E-mail address usually has a person on the other end of that address who will remove you

from their mailing list if you ask. Some of the more ethical commercial entities will provide you the same respect (although, you have to be careful, because some remove requests just serve as an address verification for some less than ethical Spammers). But maybe for most of it, you can just delete and ignore. If Spam never elicits any response, then there is no economic incentive to do it, and it may fade away on its own. Keeping Spam in the limelight just encourages those who are looking for a way to get attention. In other words, don't reinforce bad behavior by re-broadcasting an unsolicited message and furthering the Spammer's influence.

I think that a partial solution to Spam would be to make the Internet a less anonymous place. If you can be held accountable for your behavior, you are more likely to stay within the bounds of established etiquette. Most postal mailers must take you off of their mailing list if you request it and you can pursue a legal remedy if they don't. Their are also definite rules as to what can be sent via U.S. Mail and how it can be sent. Mail fraud is a crime and the U.S. Postal service is very serious about guarding the integrity of their delivery system. Alas or hurrah, there is no such governing authority on the Internet. With the freedom of the Internet comes the need to tolerate (OK, maybe put up with) behavior that you might find annoying. In other words, preserve the freedom of the Internet: just hit delete.

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* We have written all sorts of things about Spam "through the ages" in *Benchmarks Online* and, earlier, in *Benchmarks NewsJournal*. Here is a sample:

- November 1998 "Network Connection" -- "SPAM"
- April 1998 "List of the Month" -- "Spam-L"
- April 1998 "Network Connection" -- "Is Spam Illegal?"
- Spring/Summer 1997 *Benchmarks NewsJournal* -- "Dealing With Junk E-Mail"
- Spring/Summer 1997 *Benchmarks NewsJournal* , "Network Connection" -- "Garbage In: Emerging Media And Regulation of Unsolicited Commercial Solicitations"
- Fall 1996 *Benchmarks NewsJournal* , "Network Connection" -- "Hold that Spam!"

List of the Month

Each month we highlight one Internet, USENET Special Interest Group (SIG), or similar mailing list or Website.

The UNT CampusWide Networks Tips on GroupWise Website is now up and running. Point your bowser to http://www.unt.edu/cwn/gw/Tips%20web/index.html and check it out. If you forget the URL (and who wouldn't?), just go to the Campus Wide Networks Website (www.unt.edu/cwn), and follow the GroupWise links. The site will continue to expand, so be sure and check it often.

Please note that all features mentioned on this site are for the GroupWise 5.5.3.1 client (unless otherwise specified) and very few will work with lesser versions.

The "Tips on GroupWise" site was created by Andrew McGregor, CWN Messaging Support Specialist. In addition to supporting this site he will continue to send out regular E-mail with GroupWise Tips to all GroupWise account holders.

WWW@UNT.EDU

By **Mark Wilcox**, **Campus Web Administrator**

Beware the Wireless

I recently spoke at the SIGS/101 Communications JavaPlus conference in San Jose, CA. One of the most interesting discussions I sat in on was about the future of Java and wireless devices. There is a significant revolution going on with wireless overseas, primarily because standard telephone access (and thus Internet access) is more expensive and in many cases, less reliable than it is in the US.

The reason wireless was brought up at a Java conference was because there is a version of Java that has been modified for these 'micro-devices' which include Cell-phones, palm-type computers and devices that fit somewhere in the middle of these two. This version of Java called J2ME (Java 2 Micro-Edition) is a reduced sub-set of the standard Java environment designed for the limited amount of memory and disk space these systems typically have.

Some interesting observations came out of this discussion:

1. Moore's law on computing (computer power doubles every 18 months) applies even to micro-devices. The newest cell-phones are shipping with 8 MB of RAM and 40 MHZ CPUs. Yes these are tiny compared to your PC with 800 MHZ CPUs and a gigabyte or more of RAM, but these devices are the equivalent to the most powerful desktops in 1990. Some of these manufactures are now shipping with the full standard Java desktop edition on a cell-phone!

2. As computers have grown more powerful and functional, the available bandwidth grows more limited. You think 28.8 modems are slow, try a wireless connection.

3. We need to rethink transactions. Transactions are the process we use to maintain data integrity in a multi-step computational process. What transactions allow programmers to do is to treat a series of steps (for example withdrawing money out of your bank account) as a single operation. If any of the steps fails (you lose power during the withdrawal), the system reverts back to the way it was before any of the steps were completed. In typical client-server applications, losing a connection and causing a rollback are fairly rare because of the quality of the network. In a wireless environment, we might lose the connection at any moment (you go out of range, drive into a tunnel, lose battery power etc.) or the connection could easily be garbled. We now must build our applications to learn to handle these situations. Quite a challenge!

Until next time.

Mark

Short Courses

By Claudia Lynch, *Benchmarks Online* Editor

The Academic Computing Services (ACS) fall short courses are just about over for the semester. We will be offering similar courses next semester. There is still room in the LaTeX class offered on November 21. Please consult the Short Courses page to check out the classes offered this semester.

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.

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 ISB 204. 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 Web site.

UNT Libraries'

The UNT Libraries' Multimedia Development Lab has also offered free training to all University of North Texas faculty and staff in the basics of FrontPage and information architecture in the past. For more information see http://www.library.unt.edu/media/services.htm#Distributed.

Technical Training

Technical Training for campus network managers is available through the Campus-Wide Networks division of the Computing Center. Some of the seminars, such as one on disaster recovery/business continuity planning techniques, may be of interest to others on campus as well.

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.unt.edu/ccecm/cont_ed/index.html .

Alternate Forms of Training

The Training Web site has all sorts of information about alternate forms of training. Training tapes, Computer Based Training (CBT) and Web-based training are some of the alternatives offered.There are also handouts for computer training (Microsoft Office 97 and Windows 95) on the following topics:

- GroupWise 5.2 -- Handout for Win95/NT
- FAQ for GroupWise 5.2
- Info on GroupWise for Win3.1
- Computers - Back to the Basics
- Introduction to Windows 95
- Introduction to Word 97
- Advanced Word 97 - MailMerge It Together
- Introduction to Excel 97
- Introduction to PowerPoint 97
- Introduction to Remedy (THE Call-Tracking Program)
- Using Netscape Communicator and the UNT Home Page

December 1999's "List of the Month" offers links to free Microsoft Word and Excel information also.

IRC News

Minutes provided by Sue Ellen Richey, Recording Secretary

IRC Regular and Ex-officio Voting Members: *Judith Adkison, College of Education; Ginny Anderson, Fiscal Affairs; Donna Asher, Administrative Affairs; Craig Berry, School of Visual Arts; Sue Byron, Faculty Senate; Bobby Carter, UNT Health Science Center; Jim Curry, Academic Administration; VACANT, Student Association, Don Grose, Libraries; Jenny Jopling, Instruction Program Group; Joneel Harris, Administrative Program Group; Elizabeth Hinkle-Turner, Standards and Cooperation Program Group; Abraham John, Student Affairs; VACANT, Graduate Student Council; VACANT, University Planning Council; Ramu Muthiah, School of Community Services, GALMAC; Jon Nelson, College of Music; Robert Nimocks, Director, Information Technology, UNTHSC; Patrick Pluscht, Distributed Learning Team; Mark Rorvig, Research Program Group (Acting Chair); Paul Schlieve, Communications Program Group; Kathleen Swigger, College of Arts and Sciences; Philip Turner, School of Library and Information Science and University Planning Council (Chair, IRC);; Virginia Wheeless, Chancellor; John Windsor, College of Business.* **IRC Ex-officio Nonvoting Members:** *VACANT, Telecommunications; Bill Buntain, Computing Center Networking; Jim Curry, Microcomputer Maintenance Shop; Richard Harris, Computing Center; Coy Hoggard, Computing Center; Joel Lanpher, UNT Health Science Center; Maurice Leatherbury, Computing Center; Sue Ellen Richey, Computing Center (Recording Secretary). [As of 10/2000]*

No new IRC minutes were available at publication time. To see past IRC minutes, consult our [back issues](#).

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. The December meeting has been changed to the second Tuesday, December 2. All meetings of the IRC, its program groups, and other committees, are open to all faculty, staff, and students.

Staff Activities

Transitions

The following are new employees:

- **Philip Buhler**, formerly Print Services Supervisor in Production Control is back at UNT. He is now a Programmer Analyst on the General Data Systems team.

- **Bryan Gressett**, I/O Consultants(part-time).

- **John Trautman**, I/O Consultants(part-time).

The following people no longer work in the Computing Center:

- **Dane Brock**, I/O Consultant (part-time).

- **Ho-Chang (Michael) Chae**, ACS Lab monitor (part-time).

- **Corey Davidson** , Clerical Assistant (part-time).

- **John Dysart**, Student Records Data Systems Team Programmer.

Changes

The following people have changed the status of their employment within the Computing Center:

- **Shannon Leach**, formerly the Computer Print Services supervisor is now a Production Control Specialist I in Production Services.

- **Ronnie Seay**, formerly Production Control Specialist I is now a Production Control Specialist II in Production Services.

- **Travis Brown**, formerly a part-time Compaq Server Support Assistant, now a full-time Computer Support Specialist, Desktop Operating Systems Team, Campus-Wide Networks.

- **Judy Tate**, formerly a part-time I/O operator is now the Computer Print Services supervisor.

- **Rehana Nayyer**, formerly a part-time I/O operator is now a Data Entry operator.

Publications, Presentations

- **Mark Wilcox**, Campus Web Administrator, spoke at at SIGS/101 in San Jose, CA on October 29-Nov. 1. He gave a presentation on porting our bulk E-mail system from Perl to Java.

- **Dr. Philip Baczewski**, Associate Director of Academic Computing, is a contributor to a just released book from Syngress called *E-Mail Virus Protection Handbook*. Also contributing to that book is Eriq Neale, formerly the ACS General Access Lab Manager.

  Speaking of former employees, Kevin Mullet (Data Communications) and Dianna Mullet (ACS UNIX Group) have a new book out, *Managing IMAP* (O'Reilly), in which screen shots from UNT'S EagleMail system can be found.

Campus Computing News

This is a reprint of an article that appeared in the August 2000 issue of Benchmarks Online. **Please note that it is very important for all UNT students to have an EagleMail account.** *If you are a faculty member, please urge all your students to activate their EagleMail accounts A.S.A.P. If you are a student and you don't have an EagleMail account, please get one A.S.A.P. If you have another account that you prefer to use to read your mail, no problem, just forward your EagleMail there. -- Ed.*

By **Sandy Burke**, **Manager of Computing Center Help Desk Support Services**

Did You Get Your EagleMail?

Students are required by University policy to activate and read their UNT E-mail, called EagleMail. Faculty and staff can also follow the procedure below to activate a UNT Internet Services account if they require network dial-up or other services provided with that account.

If you already have an EagleMail (or UNT Internet) account, you do not have to do this again. This ID/password is needed to access the UNT student E-mail services, as well as the UNT Internet Services.

To Activate EagleMail or UNT Internet Services:

- Go to http://getlogin.unt.edu/
- Complete the requested information (UNT ID#, Birthdate, and Last Name)
- When asked, type in your own unique password.
- Be sure to record your E-mail address somewhere so you can remember it, as the "secure" form will not print from your browser.
- The Internet account will be activated at 8:30pm the same day you apply.
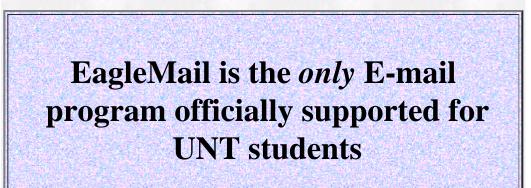
To use EagleMail:

- After your account is activated, you can access your UNT EagleMail.
- Go to http://eaglemail.unt.edu/
- Put in your UNT Internet account ID (usually 2 to 3 initials and 4 numbers).
- Put in your self-assigned password.

To change your password/forward your mail:

- Go to the Account Management Page: http://people.unt.edu/manage
- Log in with your EagleMail (or UNT Internet) Account ID and password.
- From the menu select "Change Your Password". You can also select "Email Services" and choose to forward your mail to another Internet Service Provider or GroupWise account from this menu.

Any questions/problems?

Either stop by the Computing Center Helpdesk Office in the Information Sciences Building, Room 119, or call us at 940-565-2324 between 8am and 8pm Monday-Friday, or 9 a.m. and 2 p.m. on Saturday. You can also send us E-mail at Helpdesk@unt.edu

EagleMail is the *only* E-mail program officially supported for UNT students

Lab-of-the-Month: The Adaptive Lab

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

Located in Chilton Hall Room 116, this month's featured General Access Lab - the Adaptive Lab - is designed to meet the needs of students with disabilities on the UNT campus. With an easy-to-reach entrance on the first floor of Chilton and extended open hours (Monday-Thursday: 8:00 am - midnight; Friday and Saturday: 8:00 am - 5:00 p.m.; Sunday: noon - midnight), the Adaptive Lab gives special needs students all the features of the other general access labs while providing advanced hardware and software resources for the full utilization of available digital technology.

The Adaptive Lab has a large open area for easy wheelchair access

The lab has a large open area and specially -built furniture to accommodate wheelchair access and ease of movement. Technical resources include twelve Pentium II computers with 17-inch monitors, CD-ROM drives and zip drives as well as several Hewlett Packard ScanJet 5P flatbed scanners for text and graphics scanning. A multimedia workstation is also available for digital audio and video production. All staff in the lab are trained to help with special needs.

The Juliet Brailler

Adaptive computer lab hardware includes the Juliet Brailler, a printer with the ability to make hardcopy Braille pages from specially formatted documents. This printer is often used in connection with the MegaDOTS computer document translator software for Windows. MegaDOTS reads in and converts word processor files to standard Braille format. When used with the Juliet Brailler, virtually any text file can be quickly reproduced into Braille.

The Chroma CCD Reader

Another powerful tool available for the visually impaired is the Chroma CCD reader. This color video magnifier can be used for all types of documents from

magazine articles to photographs. The Chroma CCD features a 20 inch monitor, 3-60x magnification, and easy to use controls.

The Adaptive lab has many software resources to help special needs students

In addition to the MegaDOTS software, the Adaptive computer lab provides other application resources to help with the viewing of digital materials. ZoomText is a screen enlarging program for both the DOS and Windows operating environments allowing for screen magnification of up to 16 times and access to the whole screen via mouse movement from edge to edge. The JAWS (Job Access With Speech) software for Windows provides speech-based screen reading capability and has a variety of customized utilities.

Dragon Naturally Speaking is a software tool available in the lab for those who cannot use a computer keyboard or other controls and must use voice activation instead. Features include a 32,000 word customizable vocabulary and a learning translator that becomes more accurate with extended use.

A visit to the Adaptive General Access Lab shows it to be a busy, well-organized and feature-packed facility. The staff is helpful and cheerful. Additional information about this vital part of the general access lab system can be found at its Website www.scs.unt.edu/labs/Adaptive/.

Holiday Hours

By Claudia Lynch, Benchmarks Online Editor

Following are the hours for Computing Center-managed facilities for the Thanksgiving holiday. All staff offices will be closed Thursday, November 23 and Friday, November 24. The Helpdesk, ACS General Access Lab and Mainframe Print Services will maintain services during much of the four day weekend, however.

- **Print Services** will close at midnight Wednesday 11/22 and re-open at 10 a.m. on Friday 11/24. They will be open from 10 a.m. until 10 p.m. each day (11/24-11/26).

- The **Helpdesk** will be closed Thursday 11/23 but will resume normal operating hours and services after that: Friday 11/24/00 - 8 a.m. - 8 p.m. and Saturday 11/25 - 9 a.m. - 2 p.m., closed Sunday.

- The **ACS General Access Lab** (ISB 110) will be open Wednesday 11/22 from 8:00 a.m. to 7:45 p.m., CLOSED Thursday 11/23 and Friday 11/24, and will re-open Saturday 11/25 at 2:00 p.m., close 9:00 p.m. Regular hours (1:00 p.m. - midnight) will be resumed Sunday 11/26.

Hours for Other Campus Facilities

The University is officially closed for Thanksgiving break Thursday, November 23 and Friday, November 24.

General Access Labs

- WILLIS:

  Wednesday 11/22 close at 7:50 p.m.
  Thursday 11/23 **Closed**
  Friday 11/24 -- Upgrading server in the morning and, providing all goes well, open from 1:00 - 5:50 p.m.
  Saturday 11/25 Open at 1:00 p.m. (back to 24 hrs)

- SLIS:

  Wednesday 11/22 8:00 a.m. - 10:00 p.m. (normal hours)
  Thursday-Saturday, 11/23-25 **Closed**
  Sunday 11/26 12:00 p.m. - 8:00 p.m. (normal hours)

- MUSIC:

  Wednesday 11/22 8:00 a.m. - 5:00 p.m. (early close)
  Thursday-Friday 11/ 23-24 **Closed**
  Saturday 11/ 25 10:00 a.m. -1:00 p.m.
  Sunday 11/26 1:00 p.m.- Midnight

- [SCS](#):

  Wednesday 11/22 8:00 a.m. - 10:00 p.m.
  Thursday-Friday 11/23-24 **Closed**
  Saturday 11/25 10:00 a.m. - 5:00 p.m.
  Sunday, 11/26 Noon - Midnight

- [COE](#):

  Wednesday, 11/22 7:00 a.m. - 6:00 p.m.
  Thursday-Friday, 11/23-24 **Closed**
  Saturday 11/25 Noon - 8:00 p.m.
  Sunday 11/26 2:00 p.m. - Midnight

- [COBA](#):

  Wednesday 11/22 8:00 a.m. - 10:00 p.m.
  Thursday-Friday, 11/23-24 **Closed**
  Saturday 11/25 8:00 a.m. - 8:00 p.m.
  Sunday 11/26 Noon - Midnight

- [CAS](#):

  Wednesday 11/22:
  GAB 330 8 a.m. - 8 p.m.
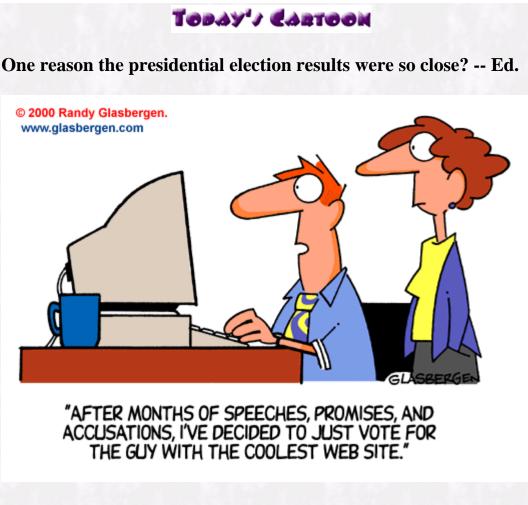 GAB 550, TH 220, WH 120 8 a.m. - 5 p.m.

  Thursday-Friday, 11/23-24 **All labs closed**

  Saturday 11/25:
  GAB 330 Noon - 8 p.m.
  GAB 550, TH 220, WH 120 **Closed**

  Sunday 11/26:
  GAB 330 Noon - Midnight
  GAB 550, TH 220, WH 120 **Closed**

TODAY'S CARTOON

One reason the presidential election results were so close? -- Ed.

From "Today's Cartoon by Randy Glasbergen", posted with special
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