Benchmarks Online

Volume 7 - Number 10 * October 2004

Columns

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Campus Computing News

About Benchmarks

Search Archive

Subscribe to Benchmarks

Return to top

UNIVERSITY of NORTH TEXAS

Questions, comments and corrections for this site: lynch@unt.edu
Site was last updated or revised : February 12, 2007

Campus Computing News

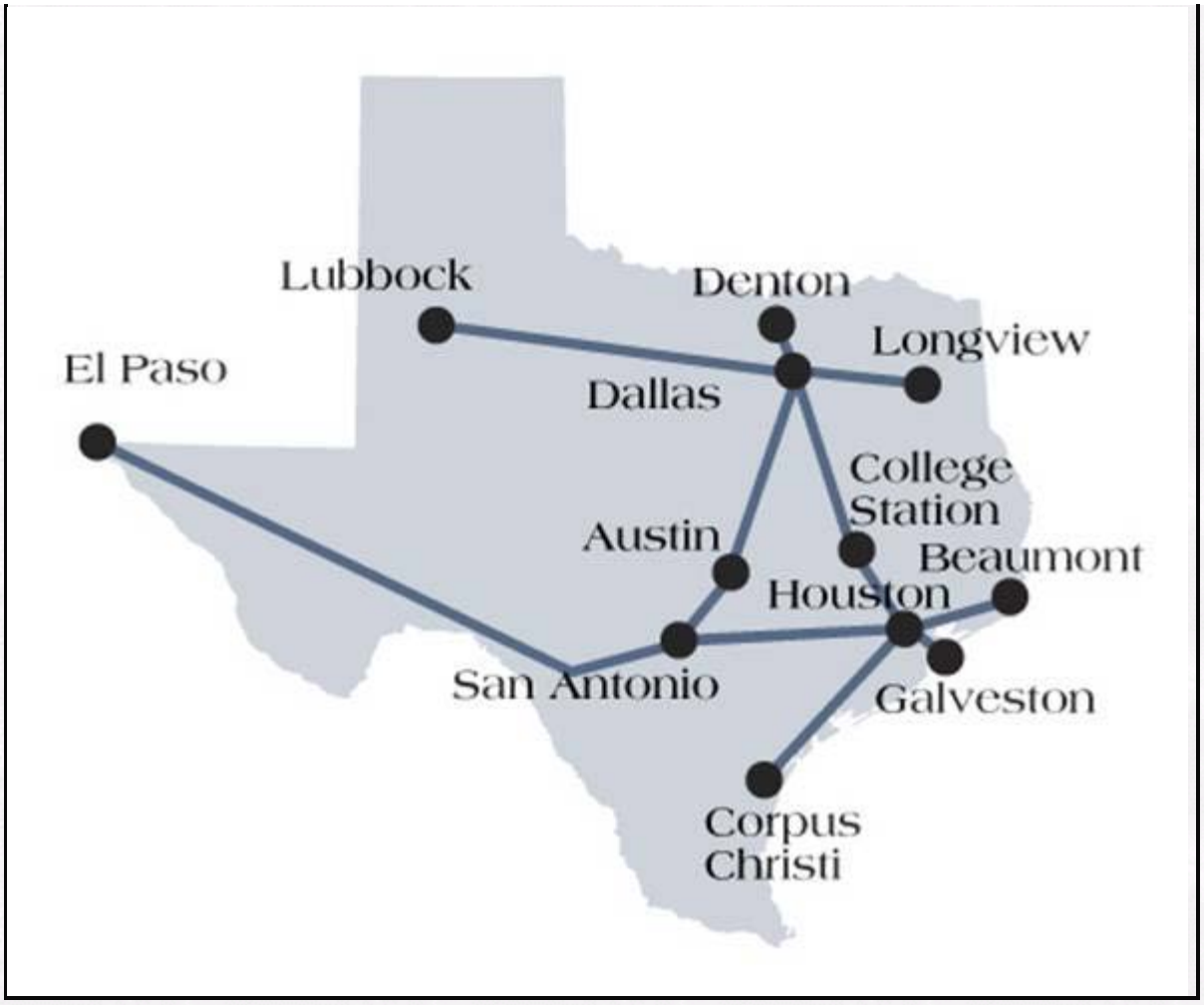
UNT Will Benefit From Statewide Fiber Optics Network

By Dr. Maurice Leatherbury, Executive Director of Information Technology and Academic Computing

At the Internet2 membership meeting in Austin on September 28th, Governor Rick Perry and Lt. Governor David Dewhurst announced that the State of Texas would be granting the Lonestar Education and Research Network (LEARN) $7.3 million to develop a fiber optic network connecting the major metropolitan areas in the state. That network will extend to Denton and will allow UNT to connect to the statewide network as well as the nationwide National LambdaRail network (NLR) over high-speed connections (one gigabit or more, over ten times faster than UNT's current Internet connection.) More information about the State's grant can be found at http://www.tx-learn.org/pressrelease.cfm.

Thirty-one institutions of higher education in Texas belong to LEARN at this time: more information as well as a list of members can be found on LEARN's Web site: http://www.tx-learn.org. UNT was a founding member of that organization and Dr. Maurice Leatherbury, UNT's Executive Director of Information Technology and Academic Computing, serves as its secretary.

The LEARN network's "footprint" is shown in the map below, which reveals that most higher education institutions, including community colleges, will be within relatively inexpensive-to-reach distances to a connection point in the state. Current plans call for completing the "ring" (Dallas - Houston-San Antonio - Austin - Dallas) within about six months with the remainder of the sites being connected within a year.



Return to top

Benchmarks Online

Skip Navigation Links

Page One

Campus Computing News

Microsoft Campus Agreement Benefits Faculty and Staff

Checkin 4.0 on the Move

The Role of Blended Learning in the World of Technology

EDUCAUSE

Today's Cartoon

RSS Matters

The Network Connection

Link of the Month

WWW@UNT.EDU

Short Courses

IRC News

Staff Activities

Subscribe to Benchmarks *Online*

Microsoft Campus Agreement Benefits Faculty and Staff

By Claudia Lynch, *Benchmarks Online* Editor

Sometimes when things have been around awhile, it slips our minds that not everyone on campus is aware of them. Thus it is with the Microsoft Campus Agreement. As Dr. Maurice Leatherbury, Executive Director of Information Technology and Academic Computing, noted in a recent E-mail to the campus, UNT has had an agreement with Microsoft for the past five years wherein the following Microsoft software products are available at very low prices to UNT employees:

- Office Pro for Windows
- Office for Mac
- FrontPage
- Visual Studio Net Academic
- Publisher
- OneNote
- Windows XP Pro Upgrade

According to Dr. Leatherbury, several versions of these products are available, for Windows 2000, XP, Mac OS X, and earlier versions of the Mac operating system. The cost of the products depends upon the number of CD's needed to hold the software: Office Pro for Windows, for example, is either $14.00 or $21.00 depending upon the version, and the Mac versions of Office are either $7.00 or $8.00. There are some restrictions on the use of the software, such as you may use the software for school-related purposes, and you must sign a user acceptance form to obtain the software. **Only UNT employees (including TA's and TF's) may purchase the software.**

The software is sold in the trade books section of the Bookstore, on the second floor of the Union. If you have further questions about the campus agreement and/or you need the software installed on your office computer(s), please contact your network manager. Please direct any questions about the *terms* of the agreement to Mike Wright (x3632).

Return to top

Checkin 4.0 on the Move

By Dr. Elizabeth Hinkle-Turner, Student Computing Services Manager

Checkin 4.0 has made its migration to a new network, a new version of OS, a new configuration and all new hardware...boy, am I tired after all this work! The original hardware setup of the Checkin 4.0 application was to spread the work between three servers: one running the web-based application itself, one taking care of all database housing and functions and a development environment which could also serve as the application server should something happen to the other two machines. All servers were running RedHat 8.0 with mySQL 3.23, Apache 2.0 and Perl 5. Once RedHat 8.0 became unsupported and the newest version of mySQL had become stable enough to upgrade it became necessary to re-evaluate the system and make major chances to update security, load, and organizational issues.

UNT's Debian Linux installer to the rescue

I had already played around with the Debian Linux installer developed by the UNT Unix Services Group (most specifically Matt Duncan of the USG and Duane Gustavus of Academic Computing Services) which they make available to network managers interested in testing Debian as a possible desktop OS environment. Being fairly lazy I was absolutely thrilled that the OS installed in about 30 minutes on a machine with a minimum amount of input on my part (I was REALLY TIRED of all those check-off menus in the RedHat installer.....uh, how am I supposed to know the 50 dependencies that perl might need to become fully functional??). Also still being pretty much of a 'newbie' but determined to build all my Linux systems from scratch from now on with no help from anyone, I liked the fact that the USG installer had all possible defaults that might cause security problems TURNED OFF .... so I didn't run the risk of having to embarrassingly explain to Charlotte Russell and Rich Anderson of the security team why my server which had only been up for 20 minutes was now being used as a spam relay sending out approximately 500 emails a minute!

Sarge? Woody? Sid?

For those of you who may not know much about Debian Linux you can go to www.debian.org to read all about it. Debian comes in three releases: *stable* ,code-named 'woody'; *testing* code-named 'sarge'; and *unstable* code-named 'sid'. As a big fan of **Toy Story**, I instantly liked this Linux flavor right away. The feminist in me also liked the fact that 'Deb Ian' is actually named after the founder of project, Ian Murdock, and his wife Debra (wasn't that sweet of him?). For some reason all of the folks around here at UNT pronounce it 'Deeb Ian' which is just flat-out wrong and makes me wonder 'Well, what have you got

against poor old Debra anyway?' But seeing as all the UNT USG folks also know a whole heck of a lot more about Debian than I do, I don't bug them about it too much! The UNT USG Debian installer is for the 'testing' version of the OS (sarge) which is due to become 'stable' (woody) just about any day now (it will be version 3.1).

With a cutting-edge version (not 'bleeding-edge' that's Sid) of Debian on the Checkin servers, I had fulfilled my first goal of using a type of Linux which would not become 'unsupported' for quite some time and also which held no real danger of ever being anything but freeware (because I have no budget). I was not interested in a RedHat 'bait-and-switch' happening again. My next goal was to also use the latest and greatest version of mySQL especially since the newest version supported clustering technology which I was hoping would help with our database performance. To learn more about mySQL, see www.mysql.com. The mySQL version experiment ended up being a complete bust; the clustering technology really doesn't seem to be ready for primetime (at least not in the hands of neophytes like me) and is not well-documented so I couldn't even really scratch my head over the online manuals until I figured out how to install it and make it work. So, I installed the 'next-to-bleeding-edge' version which is mySQL v. 4.0.3.

Making the system as secure as possible

My final two goals were to make the system as secure as possible and also to make it more robust and reliable by load-balancing them and also set them up so that if one server failed, the redundant server would immediately kick in and take care of the job. I also wanted to make this system infinitely expandable: Checkin has become popular on campus for use in not only the General Access Labs and the major-specific labs but also in some other facilities. I anticipate that once the room reservation module is completed, that interest in using the system will really escalate. I wanted to be prepared to handle more traffic and this meant being able to add more web application servers quickly and easily.

Matt Duncan of the UNT USG came again to my rescue: he explained to me that I should put the Checkin system behind the Web Director (which does all that fail-over and load-balancing stuff for me) and that this would also put my Checkin on a private network at UNT for better performance and better security. Matt set this up for me and also helped me get the same fail-over and redundancy features out of a master-slave configuration of two mySQL servers instead of just one.

So, now the Checkin system exists in the following configuration: two web application servers (the second server is in the process of being installed now) with fail-over and load-balancing management done by the Web Director connected to two mySQL servers running in a master-slave configuration. The Checkin 4.0 application continues to be fully-cross-platform-compliant on Mac, Windows, and Linux with Mozilla, Internet Explorer, Netscape Navigator and Firefox (any versions) being the browsers of choice. All Checkin systems are using Debian sarge as the OS, mySQL 4.0.3 as the database server, Perl 5 and PHP 4 as the development languages, Apache 2.0 as the web server and Apache-ssl (1.3.29.0.2-5) as the secure web server.

Tying up loose ends

There is still work to do but overall the new system is running smoothly. I have to install the second webserver and I also have to configure the development server. THEN I have to hire a NEW Checkin developer because - amazingly - the old developer wanted to make $50k a year at Raytheon rather than $12 an hour at UNT ;-) ! I am also still in the process of migrating some of the usage logs and trouble-shooting a few communication issues with other servers on campus.

A BIG thanks to Matt Duncan (especially!) and Duane Gustavus for all of their help (and also for their help on the computer-based-training server too which was my first Debian server experience). For all developmental documentation on Checkin 4.0 see the Checkin development documentation site at www.unt.edu/cbt/checkin/. I have completely documented all installation and configuration issues and instructions for the Debian, Apache, Apache-ssl, Tomcat, Perl etc. stuff that I did to make both the Checkin system and the CBT system work and if you would like further information please contact me at ehinkle@unt.edu.

Return to top

Benchmarks Online

Skip Navigation Links

Page One

Campus Computing News

Microsoft Campus Agreement Benefits Faculty and Staff

Checkin 4.0 on the Move

EIS Online Help Available

Call for Proposals: CUMREC

Today's Cartoon

RSS Matters

The Network Connection

Link of the Month

WWW@UNT.EDU

Short Courses

IRC News

Staff Activities

Subscribe to Benchmarks *Online*

EIS Online Help Available

By Cathy Gonzalez, EIS Training/Computing Administration Manager

Need help with EIS? The EIS Online Help site is a great place to start. The information available is intended to be applicable to the UNTS community. The EIS Online Help can be accessed on the *My*UNT Portal login page from the link titled **EIS Help and Training Documentation for Faculty and Staff**. You can also gain access using http://www.unt.edu/eis/WebHelp/EIS_Glossary.htm

The website provides information and resources for technical and functional user support of EIS. Areas of information include EIS contacts for both UNT and HSC, EIS related URL's, and links to help resources. Functional users can benefit from the tips, FAQ's, and system availability information. Support solutions and links to EIS technical web sites are available for technical staff. EIS training and project status sections assist users with needs pertaining to those areas.

Other features of the site are a table of contents, index, glossary of EIS terms, and text search. The site is maintained by the EIS Training team who is committed to keeping it current with accurate information. Departments are encouraged to share applicable information with the EIS training staff that would be helpful to the UNTS community. Suggestions and comments should be sent to cgonzalez@cc.admin.unt.edu or msmith@cc.admin.unt.edu.

Return to top

Benchmarks Online

Skip Navigation Links

Page One

Campus Computing News

Microsoft Campus Agreement Benefits Faculty and Staff

Checkin 4.0 on the Move

EIS Online Help Available

Call for Proposals: CUMREC

Today's Cartoon

RSS Matters

The Network Connection

Link of the Month

WWW@UNT.EDU

Short Courses

IRC News

Staff Activities

Subscribe to Benchmarks *Online*

Call for Proposals: CUMREC

By Claudia Lynch, *Benchmarks Online* Editor

As you can see from the banner above, CUMREC is an EDUCAUSE Affiliate. According to the CUMREC website, "the purpose of CUMREC is to provide a forum for higher education professionals to share their expertise and experiences with computer systems in our ever-changing world of technology. The CUMREC Annual Conference, founded in 1956, is the longest running continuing conference devoted to promoting the understanding and use of information technology in higher education."

CUMREC has sent out a call for proposals, reproduced below.

Play an active part in one of higher education's leading IT events—submit a presentation proposal for CUMREC 2005, May 15–18 in Keystone, Colorado. The deadline for submissions is **December 6, 2004**.

The program will follow six tracks (view full descriptions):

- Enterprise Solutions, Policies, and Partnerships
- Leadership, Management, and Collaboration
- New Horizons in Application Development
- Security and Technical Infrastructure
- Web Design and Development
- Corporate Presentations

Benefits of Presenting

As a presenter, you'll not only help create an innovative and informative program, you'll also:

- Gain recognition
- Make valuable contacts

- Hone your public speaking skills
- Build confidence and self-esteem
- Facilitate progress in the academic community

Related Opportunities

- If your proposal addresses an effective technology-related practice or solution implemented on your campus, share it with colleagues by submitting your presentation content to the Resource Center.
- Consider submitting your material for publication in *EDUCAUSE Quarterly*. *EQ* authors receive full editorial support and gain valuable exposure and recognition in a very visible professional forum. View author testimonials and publication guidelines.
- Find out about other EDUCAUSE events.

Return to top

Benchmarks Online

Skip Navigation Links

Page One

Campus Computing News

Microsoft Campus Agreement Benefits Faculty and Staff

Checkin 4.0 on the Move

EIS Online Help Available

Call for Proposals: CUMREC

Today's Cartoon

RSS Matters

The Network Connection

Link of the Month

WWW@UNT.EDU

Short Courses

IRC News

Staff Activities

Subscribe to Benchmarks *Online*

maincontent

Today's Cartoon

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Return to top

Network Connection

By Dr. Philip Baczewski, Associate Director of Academic Computing

Internet Odds and Ends

There's not much new technology popping up on the Internet these days. There are still a lot of new web sites being published, and some new search engines to compete with Google, but not much technology that's really new and exciting. A few older technologies and services are bubbling their way closer to the top of Internet community consciousness and are terms you may be hearing in the not-too-distant future, if they haven't crossed your path already.

Voice Over IP (VoIP)

"Voice over IP" is a catch phrase which has been around for quite some time, but is only recently getting notice as a serious commercial service. The idea of VoIP is to use the Internet to transmit phone calls instead of the existing telephone network. This is not a new idea. In the old days, when the Microsoft operating system was still DOS, Macintosh users had access to programs like Maven for Internet audio conferencing and CUSeeMe for Internet audio/video conferencing. These programs would allow you to talk directly with others on the Internet who could also run the same programs.

VoIP services have extended the idea of Internet audio conferencing into traditional telephony. They interface a standard telephone to a broadband Internet connection and allow you to talk to any phone number you can dial on a "regular" phone. The advantage to consumers is that it provides a much less expensive alternative to traditional local and long-distance service. The disadvantage is that most Internet connections, including the broadband connections such as DSL or Cable Modem, are still less than 100% reliable. A dropped connection when reading a web page or fetching e-mail is a minor inconvenience. A dropped connection in the middle of a phone call can be a major annoyance.

Currently, Vonage, AT&T, and Verizon are the major players in VoIP services, but it's likely that more competition will arise and more telephone service will be carried over IP. However, unless there's more economic advantage to VoIP at home, its likely to remain a minor player in relation to traditional service and cell phones. For VoIP to catch on, broadband service will need to be less expensive, a condition which will require more competition than there exists in the current home marketplace. However, for businesses or institutions which already have an Internet infrastructure, VoIP may soon be the preferred choice for telephone service.

Here Come the Blogs

Most people have heard of blogs (short for web logs), but I've recently heard suggestions for

using blogs as teaching tools. Blogs can range from "ordinary" people's random musings or daily diaries, to issue-based analyses and news reporting, such as Grocklaw. Even politicians have discovered blogs, and the current U.S. Presidential campaigns each have their own official blog sites.

There are a number of blog software packages available, most of which are provided under an open source license. "Blogger" Owen Winkler has developed a chart which provides a cross reference of the various packages with various features they support. There are also a number of services on the Internet which allow you to set up your own blog for a fee or even for free.

Blogs generally allow readers to post their own comments and reactions to a particular entry and can serve as interesting discussion forums. In an educational setting, blog software could provide students a forum for posting their ideas on a particular topic of study which could then undergo a peer review by their classmates and be monitored by their instructor. Whether or not blogs catch on in education, they will likely be around for some time allowing those who are so inclined to have a forum for their personal ideas or interests.

IPv6

IPv6 stands for "Internet Protocol version 6." Internet Protocol defines the nature of the numeric addresses but which computers find each other on the Internet. The "original" protocol we still use in most cases is IPv4. It features Internet address numbers which consist of 4 8-bit numbers (0-255) separated by three periods. One major concern about IPv4 is that the Internet will soon run out of addresses. Major network sites like UNT have been assigned their own unique numbers for the first two of the four-number sets. This allows for 65,536 unique networks like UNT's, but with a worldwide Internet, that number may not be enough.

IPv6 features numeric addresses which consist of 8 sets of 16-bit numbers (0-65535) separated by colons. This yields enough addresses to literally blanket the earth. IPv6 also has features to help the Internet operate more efficiently. But, since using IPv6 means changing a lot of software, including operating systems, the adoption of the new protocol in the U.S. is proceeding about as quickly as our adoption of the metric system. Most newer OS's such as Linux, Mac OS X, and even newer versions of Windows, now support IPv6 addressing. The addressing can also be made transparent to most Internet applications, since an IPv6 network would still support fully-qualified domain names such as www.unt.edu. But there's a lot of network routing equipment and support infrastructure that needs to be changed in order to support IPv6. It's a few kilometers down the road, but I suspect that IPv6 will eventually get here (IPv6 is already routed on Internet2). In case you're wondering, yes there is an IPv5.

"I" to the Future

There's no doubt that the Internet is still changing and developing, but the pace of change is much slower than some of us "pioneers" became used to. The way the Internet is being used shifts subtly from year to year, but there hasn't been a technology break-through recently to provide the kind of stimulus to Internet use and development that we saw in the late 1990s. Projects like Internet2 and the NLR are supposed to provide those technological quantum leaps, but so far it's more like a quantum crawl. [See "UNT Will Benefit From Statewide Fiber Optics Network" in this issue for some recent developments on this front here in Texas. -- Ed.]

Return to top

Benchmarks Online

Skip Navigation Links

Page One

Campus Computing News

Microsoft Campus Agreement Benefits Faculty and Staff

Checkin 4.0 on the Move

EIS Online Help Available

Call for Proposals: CUMREC

Today's Cartoon

RSS Matters

The Network Connection

Link of the Month

WWW@UNT.EDU

Short Courses

IRC News

Staff Activities

Subscribe to Benchmarks *Online*

Link of the Month

Each month we highlight an Internet, USENET Special Interest Group (SIG), or similar mailing list(s) or website(s).

Did you know that UNT is the home of a national "CyberCemetary"? According to the website http://govinfo.library.unt.edu/ :

> The **University of North Texas Libraries** and the **U.S. Government Printing Office**, as part of the Federal Depository Library Program, created a partnership to provide permanent public access to the Web sites and publications of defunct U.S. government agencies and commissions. This collection was named the "CyberCemetery" by early users of the site.
>
> Sites are organized both alphabetically and by category.

A recent addition is **The U.S. Commission on National Security/21st Century** [a.k.a. the Hart-Rudman Commission]. You can access it at http://govinfo.library.unt.edu/nssg/ . Please note that this site works best using Internet Explorer.

Return to top

Benchmarks Online

Skip Navigation Links

Page One

Campus Computing

Microsoft Campus Agreement Benefits Faculty and Staff

Checkin 4.0 on the Move

EIS Online Help Available

Call for Proposals: CUMREC

Today's Cartoon

RSS Matters

The Network Connection

Link of the Month

WWW@UNT.EDU

Short Courses

IRC News

Staff Activities

Subscribe to Benchmarks *Online*

IRC News

Minutes provided by Sue Ellen Richey, Recording Secretary*

VOTING MEMBERS PRESENT: RICHARD HARRIS (Chair for PHILIP TURNER), PHILIP BACZEWSKI (for ELIZABETH HINKLE-TURNER), LOU ANN BRADLEY, JONEEL HARRIS, JIM CURRY, DON GROSE, ABRAHAM JOHN, CENGIZ CAPAN, WIL CLARK (for JOHN PRICE), PATRICK PLUSCHT, ROBERT NIMOCKS, SCOTT KREJCI (for JON NELSON), KATHY SWIGGER, MAX KAZEMZADEH, SANDRA TERRELL, MARGARET AMBUEHL **NON-VOTING MEMBERS PRESENT**: COY HOGGARD, JOE ADAMO, MAURICE LEATHERBURY, SUE ELLEN RICHEY (Recording Secretary) **MEMBERS ABSENT**: CHUCK FULLER, RAMU MUTHIAH, BRUCE HUNTER, JUDITH ADKISON, KENN MOFFITT, CHRISTY CRUTSINGER, DOUG MAINS, BOBBY CARTER **GUESTS**: PAUL DWORAK, DOUG WELCH, KELLY DONAHUE-WALLACE

September 21, 2004

All members were introduced, this being the first meeting of the FY05 term and there were several new members.

June, 2004 minutes

Patrick Pluscht moved for approval of the June, 2004 minutes; Don Grose seconded the motion and the minutes were approved as distributed. Joneel Harris noted a correction later to the 6th paragraph on page 2 as follows: "In response to a question, Joneel explained that when a student applies for admission a notification is sent to that student giving them an EUID and a student ID."

E-mail retention

Dr. Paul Dworak spoke to the group about E-mail retention, as a part of the university records retention policy, and Maurice Leatherbury distributed two draft documents for approval by the council, "Electronic Mail Usage and Retention Policy," and "Electronic Records Retention at UNT Standards and Procedures". These proposed policy and procedure documents are an attempt to make the best effort possible to manage and safeguard electronic records, in order to meet state auditing requirements within UNT's economic capability, as explained by Dr. Dworak. If these procedures are approved, there will be training provided. Discussion followed. Since these documents were presented at a prior meeting, there was a motion to approve by Kelly Donahue-Wallace, seconded by Don Grose and the council voted approval of the policy as presented.

IR Steering Committee

Richard Harris reported that the IR Steering Committee has not met since the last IRC

meeting so there was no report.

Distributed Computing Support Management Team

Maurice Leatherbury reported that the Distributed Computing Support Management Team has been meeting regularly. There is a sub-committee looking into Instant Messaging and is still working on a recommendation. There has been discussion of a policy on expiring EUID passwords. The new policy is that these passwords will expire every 120 days and strong passwords are now required. There is ongoing discussion about notification of password expiration and the specific method of handling unsuccessful login attempts.

Learning Enhancement Planning Group

Patrick Pluscht reported for the Learning Enhancement Planning Group that they are still forming and adding new members. A contract has been signed for a campus-wide site-license for "Turn It In.com," which is a web service for use by faculty to determine academic integrity in papers submitted by students.

Communications Planning Group

Lou Ann Bradley reported for the Communications Planning Group that they met last week and discussed possible future projects. Bradley requested suggestions for projects and issues for their group to consider.

Richard Harris reported his having attended a meeting with Verizon where he received very positive input from the North Texas Exes who were in attendance regarding the wireless system at UNT.

There was some discussion about Instant Messaging and other collaborative messaging techniques now available.

EIS Planning Group

Joneel Harris reported for the EIS Planning Group that the implementation of EIS has been very successful, including a Fall Registration. With other universities around the country experiencing difficulties with their PeopleSoft implementations, UNT feels very fortunate to be having such a good implementation. Joneel praised all of the functional and technical team members and end users who have played key roles in making UNT's implementation so successful. She explained that doing the load testing and finding out beforehand that there was not enough equipment in place was a big help. They were able to obtain the needed equipment on loan from Sun Microsystems and get it installed prior to registration. In addition, they are working on improved reporting capabilities, making LDAP files available on an interim basis until the PeopleSoft RDS module is in place; and she stated that the Portal is one area that needs more work.

Kathy Swigger asked about the rumor of the possible sell-off of PeopleSoft. Richard Harris stated that UNT owns the PeopleSoft software, as well as the right to modify it. Coy Hoggard speculated that some other firm (IBM, for example) might be interested in buying PeopleSoft in an effort to keep Oracle from increasing its dominance in the field, but there is nothing definite about this now.

State-wide network

Maurice Leatherbury reported that things have been heating up on the state-wide network

front. In the past session, the Legislature passed a bill granting 7-1/2 million dollars to the state for that network and it is hoped that the Governor will soon release those funds.

Student Computing Planning Group

Philip Baczewski reported for the Student Computing Planning Group that the group has tentative plans to make the student computing survey an annual event.

Planning Group Changes?

Cengiz Capan suggested that the Planning groups be given a new charge at the beginning of each new year, and that a status report be given by each group to the Chair or Council prior to the beginning of each new year. Kathy Swigger suggested that one of the groups could address issues concerning Website development and management. Cengiz further suggested that everyone send suggestions of new issues and questions to Dr. Turner prior to the next IRC meeting. Richard Harris, who was chairing today's meeting in Dr. Turner's place, said he would talk with him about this.

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* For a list of IRC Regular and Ex-officio Members click here.

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.

Return to top

Benchmarks Online

Skip Navigation Links

Page One

Campus Computing News

Microsoft Campus Agreement Benefits Faculty and Staff

Checkin 4.0 on the Move

EIS Online Help Available

Call for Proposals: CUMREC

Today's Cartoon

RSS Matters

The Network Connection

Link of the Month

WWW@UNT.EDU

Short Courses

IRC News

Staff Activities

Subscribe to Benchmarks Online

Research and Statistical Support
University of North Texas

RSS Matters

Link to the last RSS article here: Using S-Plus Graphics in Excel; SPSS News - Ed.

Two User Interfaces to the R Statistical System: Rcgi and R Commander

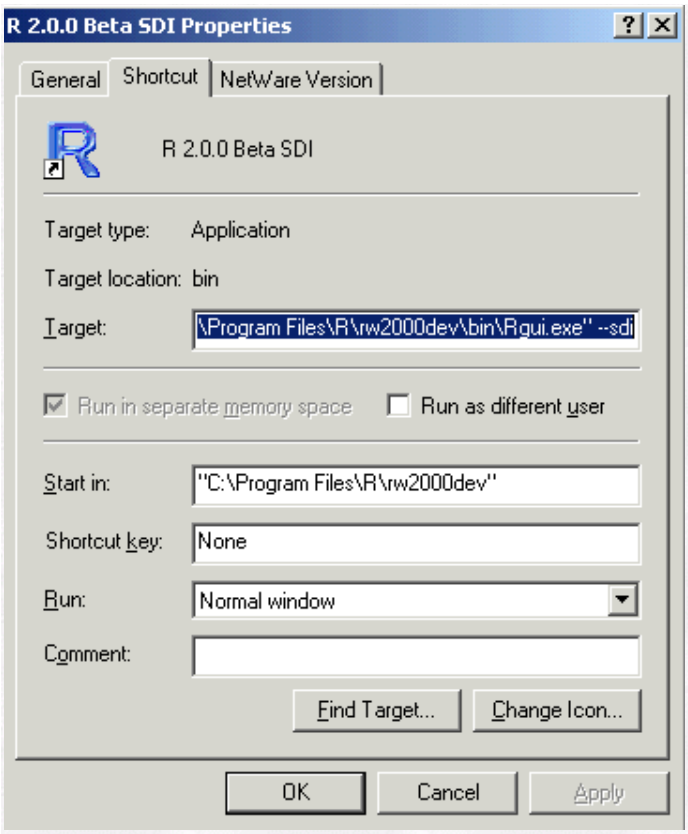
By Dr. Rich Herrington, Research and Statistical Support Services Manager

This month we continue our exploration of window interfaces for R: R Commander - a simple drop down menu system; and Rcgi - a CGI based web interface to R. The following is an excerpt from the R website http://www.r-project.org:

> *R is a language and environment for statistical computing and graphics. It is a GNU project which is similar to the S language and environment which was developed at Bell Laboratories (formerly AT&T, now Lucent Technologies) by John Chambers and colleagues. R can be considered as a different implementation of S. There are some important differences, but much code written for S runs unaltered under R. R provides a wide variety of statistical (linear and nonlinear modeling, classical statistical tests, time-series analysis, classification, clustering, ...) and graphical techniques, and is highly extensible. The S language is often the vehicle of choice for research in statistical methodology, and R provides an Open Source route to participation in that activity. One of R's strengths is the ease with which well-designed publication-quality plots can be produced, including mathematical symbols and formulae where needed. Great care has been taken over the defaults for the minor design choices in graphics, but the user retains full control. R is available as Free Software under the terms of the Free Software Foundation's GNU General Public License in source code form. It compiles and runs out of the box on a wide variety of UNIX platforms and similar systems (including FreeBSD and Linux). It also compiles and runs on Windows 9x/NT/2000 and MacOS* (from *Introduction*).

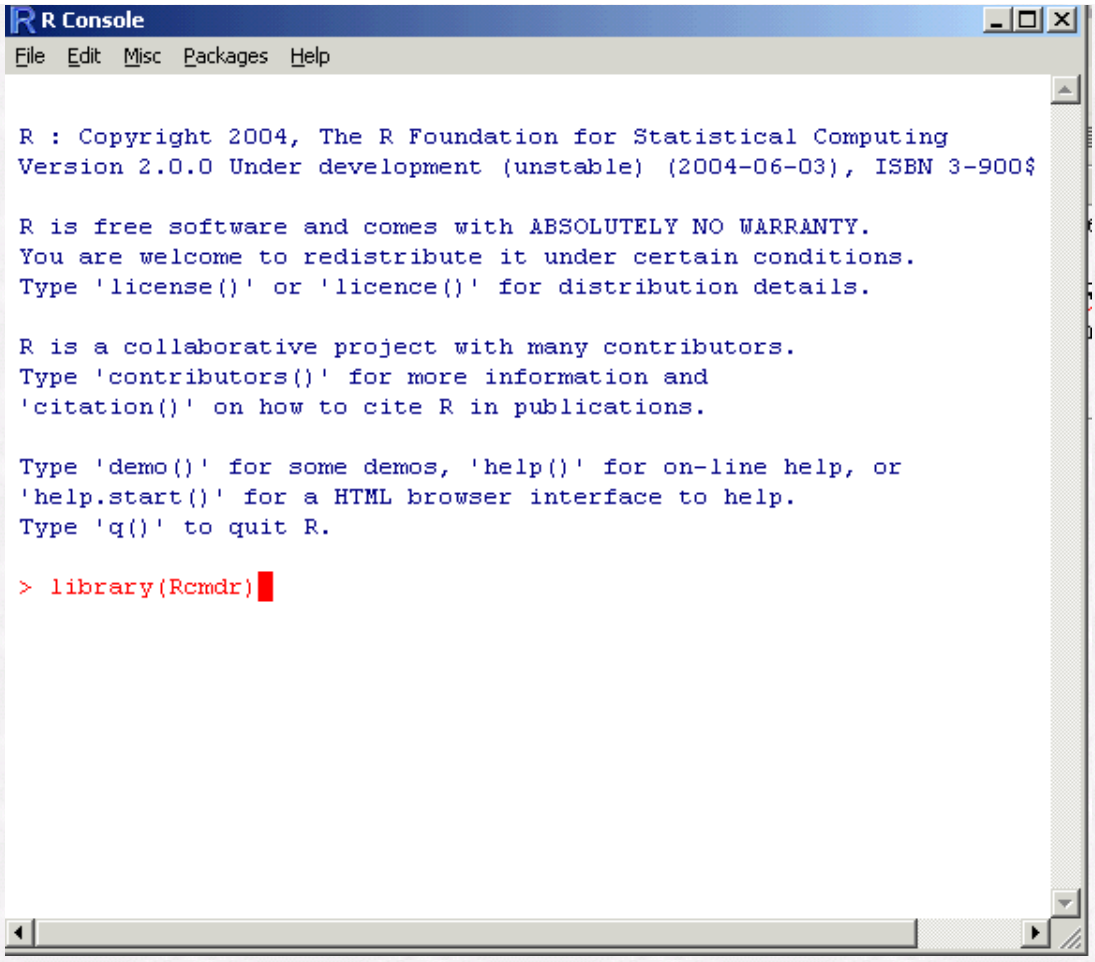
Starting R in the SDI Mode

At this point it is assumed that you have installed R and have an R icon on your desktop (see the earlier *Benchmarks Online* article on downloading and installing R). Additionally, it is assumed that you have installed all of the supporting R Commander (Rcmdr) packages. To use the Rcmdr library, we will want to configure the R system window to have a "single document interface" mode (sdi). Right mouse click the R icon on your desktop and select **properties**. Add " --sdi " to the Target field after the Rgui.exe statement (see below). Click **apply**, then **ok**. Double click the R icon on your desktop to start the R system.

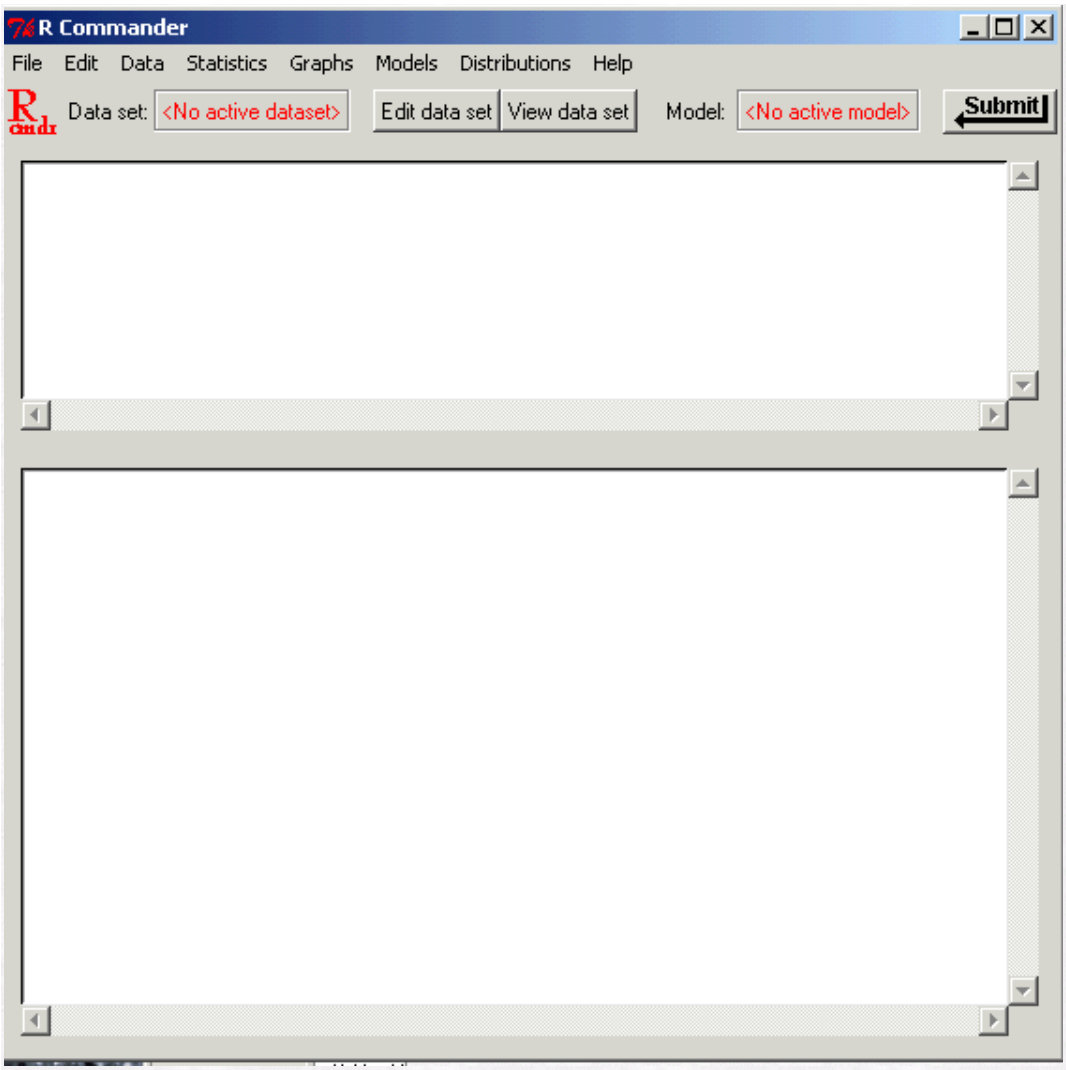


Loading the R Commander (Rcmdr) Package

To load the Rcmdr package, select **Packages** from the main menu bar in your **main R console window** and select **Load Package**. **Select Rcmdr** in the list. The Rcmdr window system will appear. **Alternatively**, you can **manually load the Rcmdr package** window from the main R console window by typing the "library" function, with the appropriate library, into the command prompt:

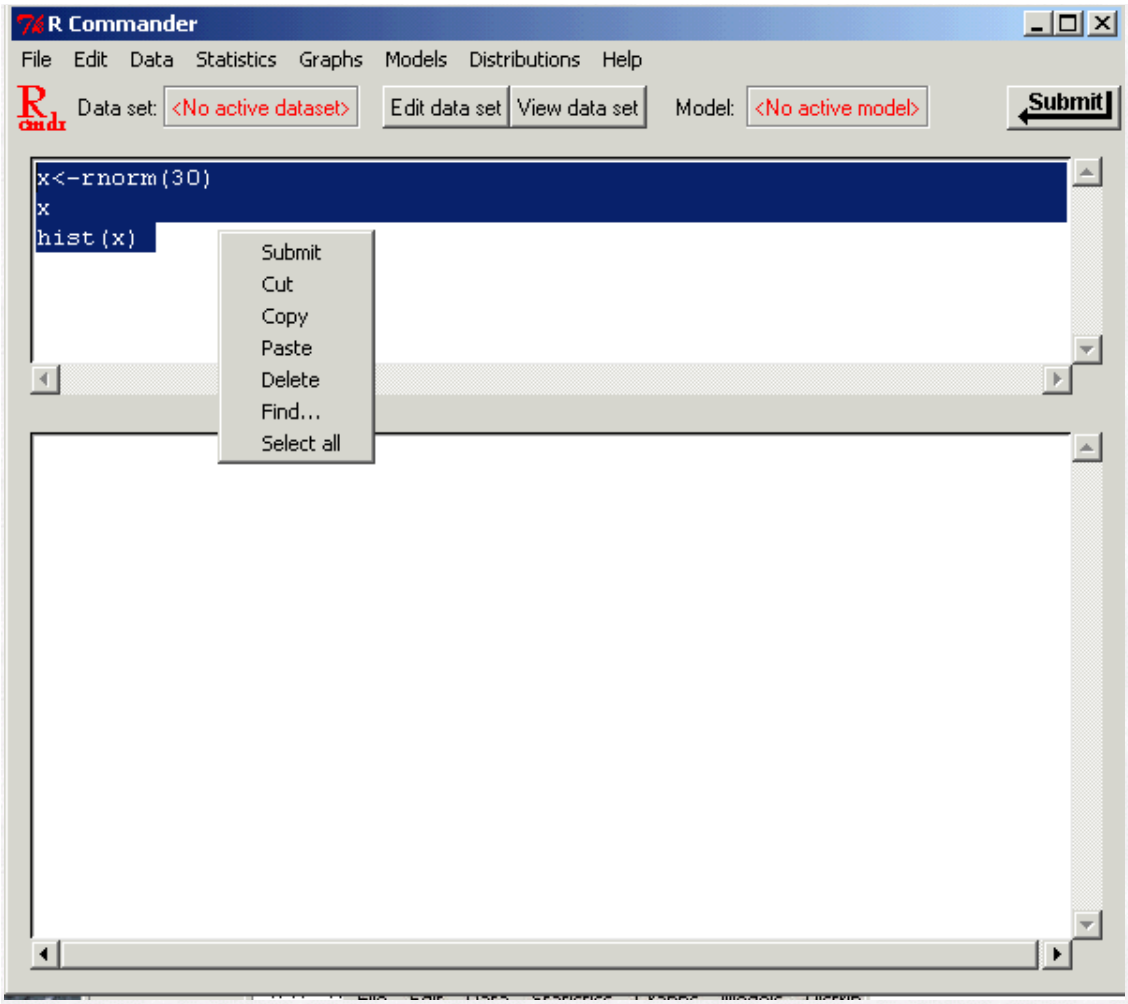


After selecting the Rcmdr package in the package selection window OR by loading the package manually, the following menu system will appear:

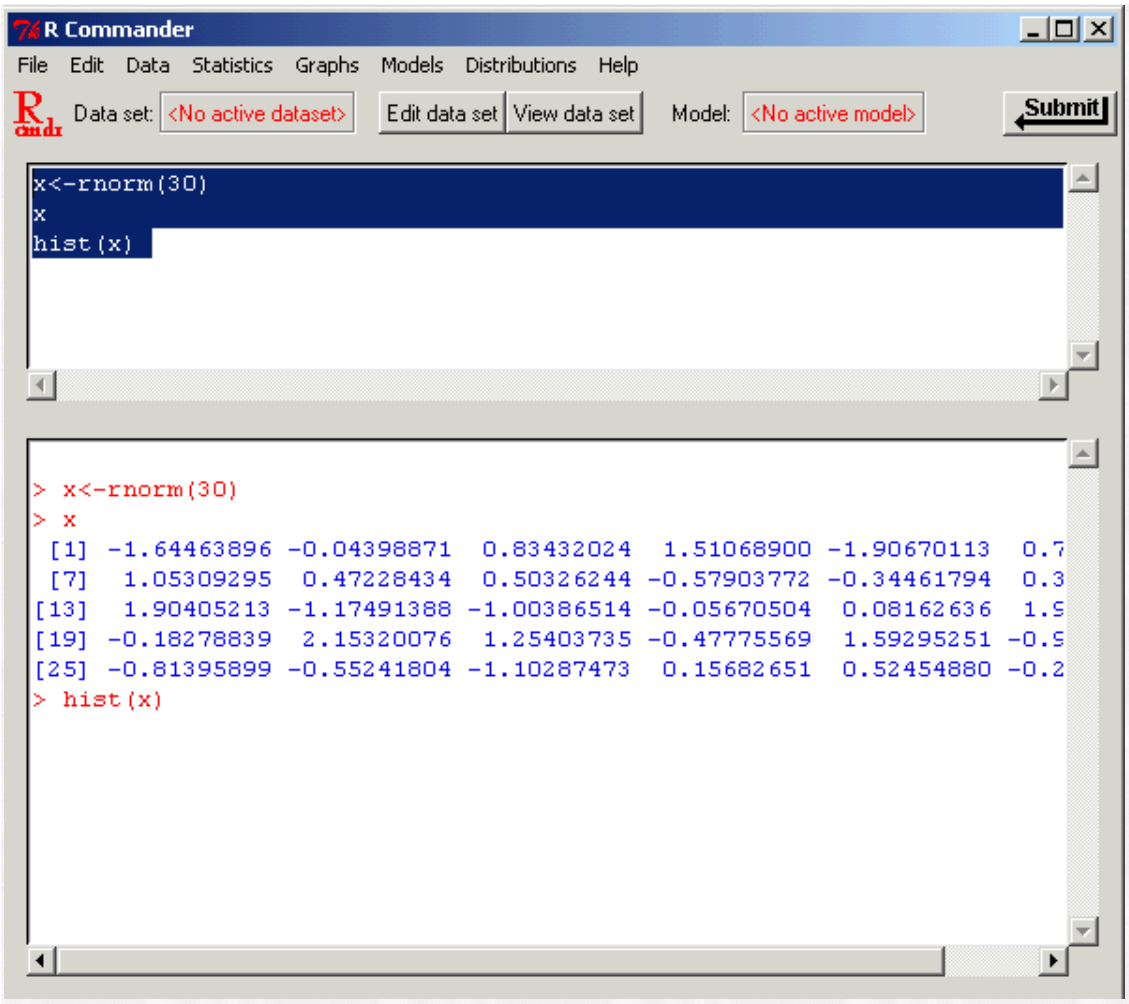


Some Fundamentals of the Rcmdr Window System

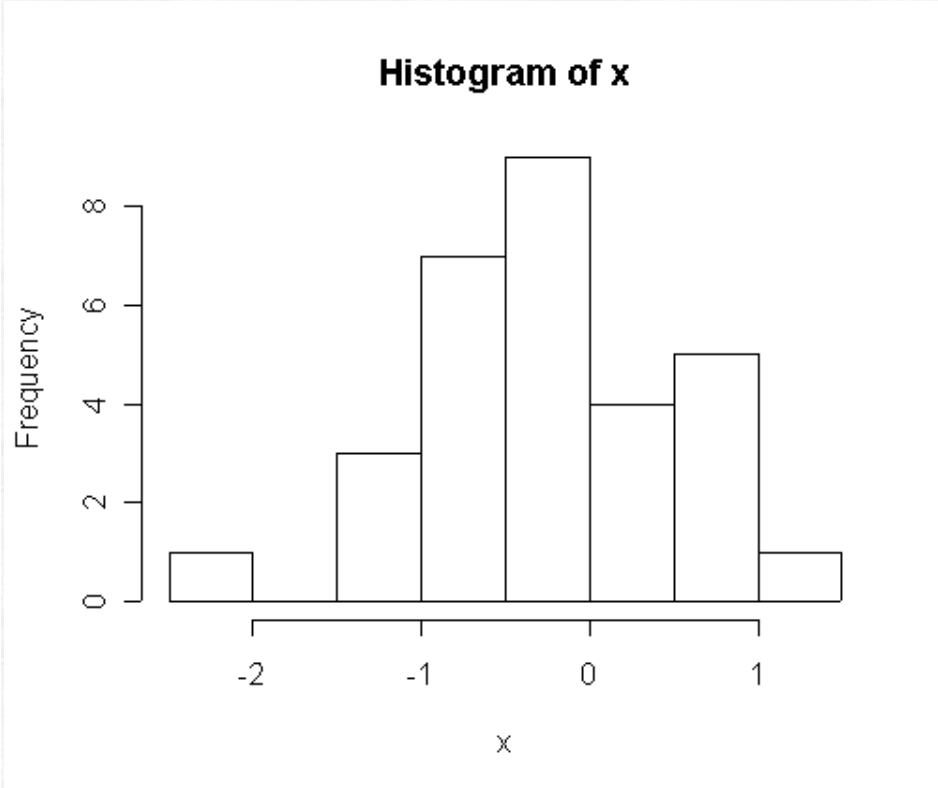
The Rcmdr window system can be resized by "grabbing" one of the corners of the window with the mouse (hover over the corner until you get a "double-headed" arrow" then press your left mouse button and drag the mouse). The upper window in the Rcmdr window is a script window where commands can be typed and then be submitted for processing. Once these commands have been typed in, the commands can be highlighted and the "Submit" button can be clicked. Alternatively, a **right-mouse click on the highlighted script brings up a small menu where the script can be submitted for processing.** Additionally, this menu can be used to find, select all, delete, copy and paste scripts that are in this window. Type the following script in the R script window; highlight the script; right-mouse click and "Submit" the script:



Submitting the R script above, generates 30 random normal numbers; places them in the object "x"; displays the object "x"; and then generates a frequency distribution of the numbers (histogram). The bottom window of the Rcmdr generates the output from your R commands. You can scroll through this output; copy, cut, and paste the output.

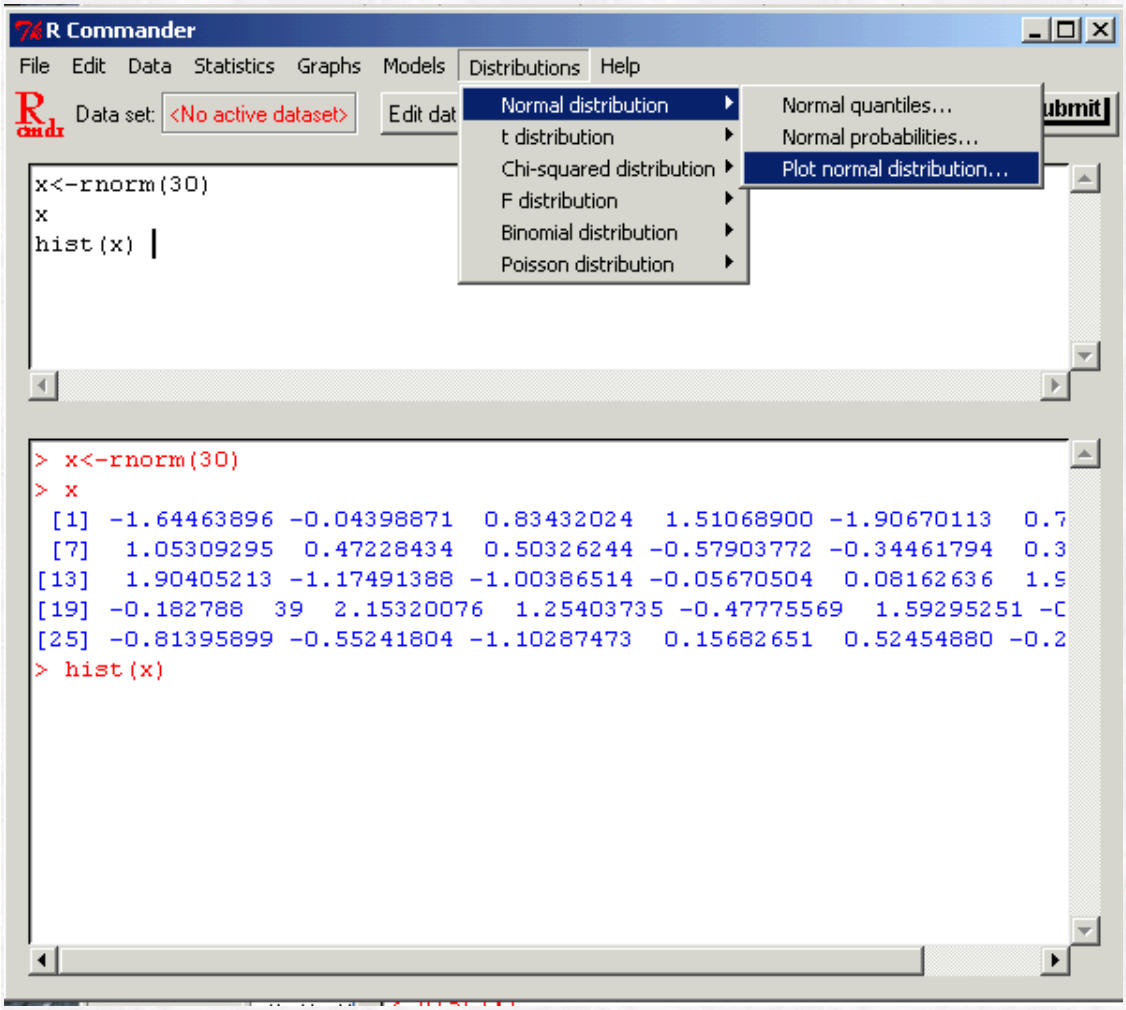


The following graph is also generated:

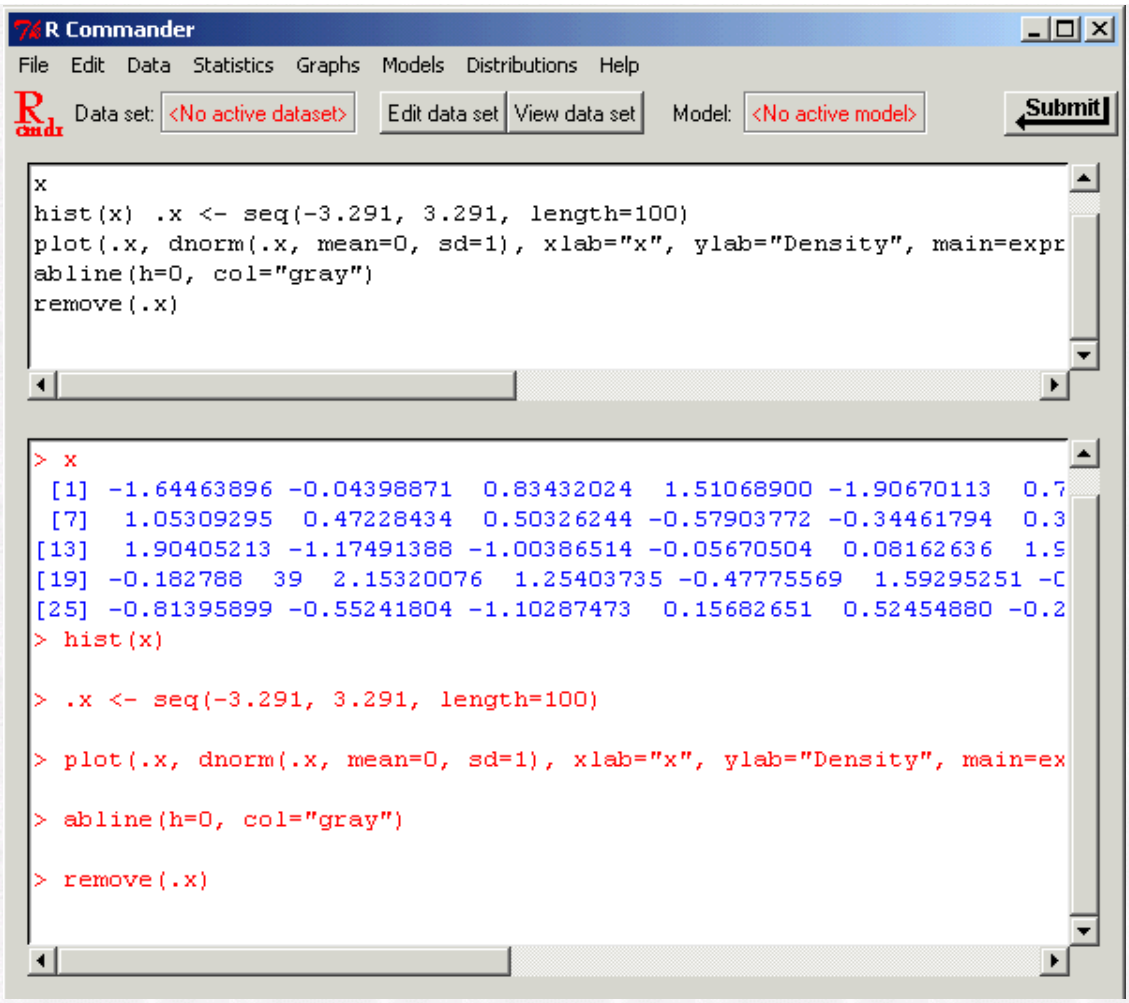


Additionally, using the drop down menu system in Rcmdr generates a script that appears in the script

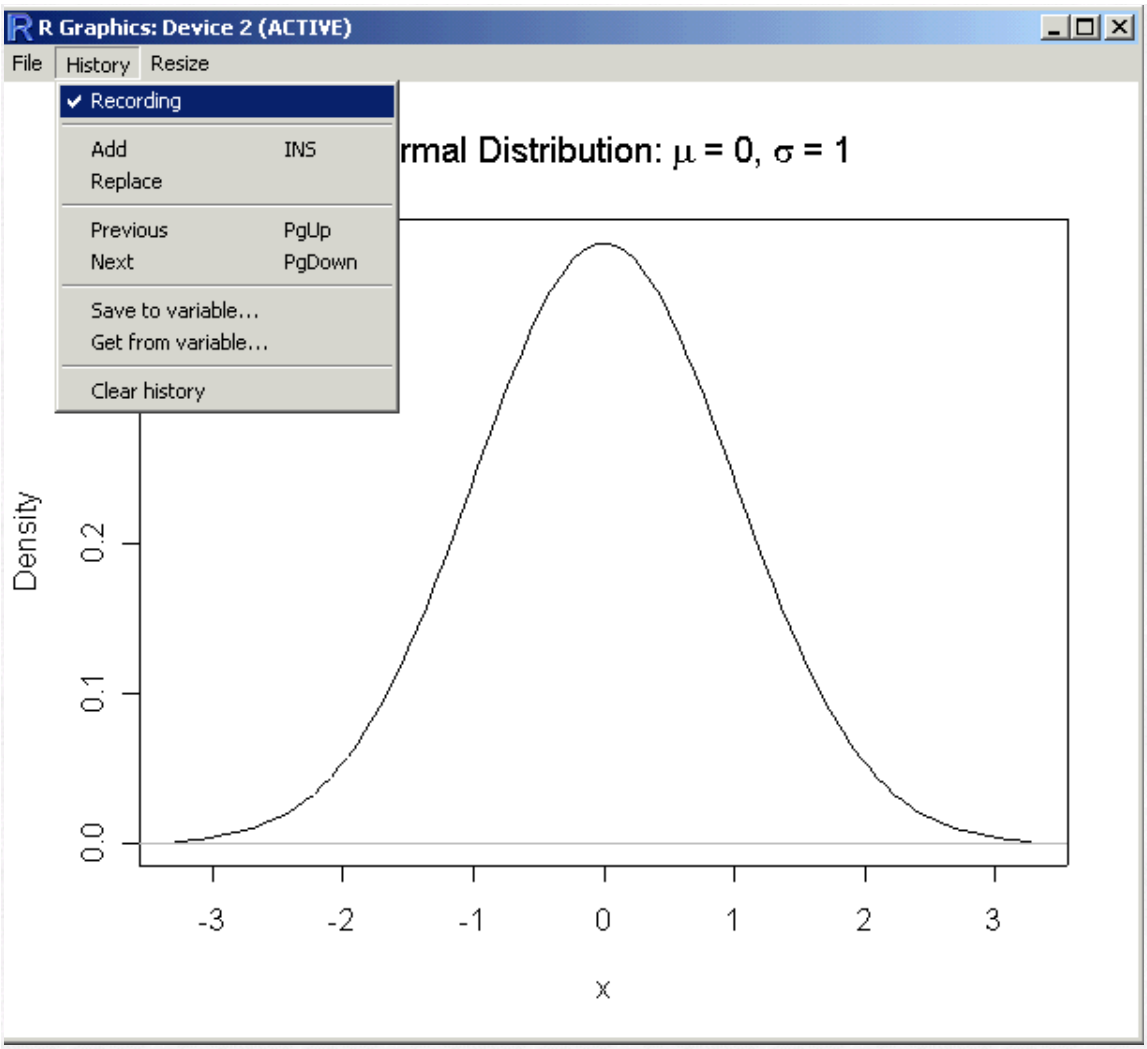
window. This convenience allows one the benefit of the drop down menu system, but also allows one to learn the R command language set as well. Additionally, commands that are generated by the window system can be saved to a script file for additional processing at a later time. For an example, lets generate a normal density function from the menu system (click "ok" to accept the default normal density parameters):



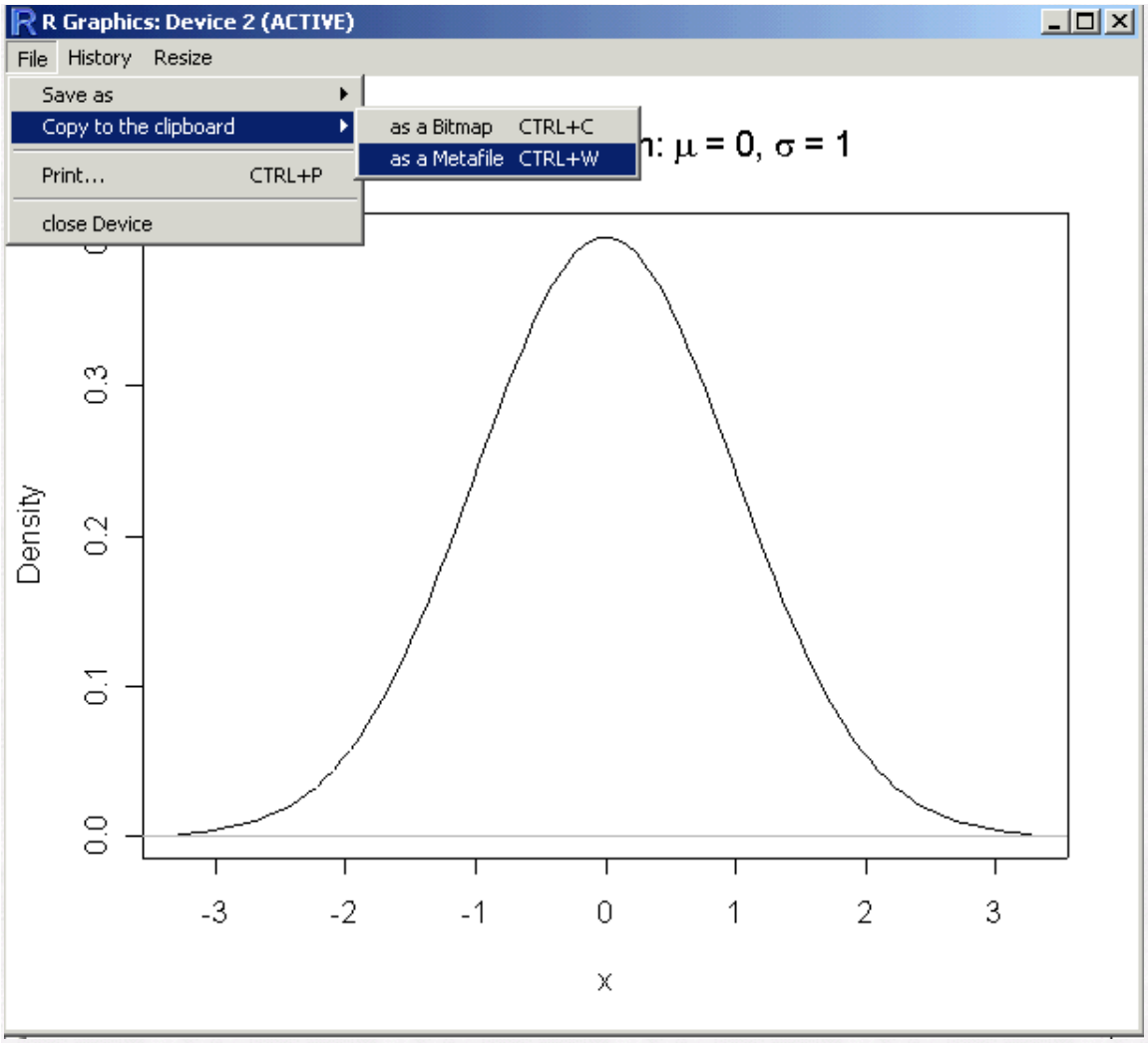
The following R script is generated in your script window; and the following is generated in your output window:



Notice that when your graphic image is generated that a history of plots are recorded. Click on **"History"** then **"Recording"**. This should be checked as it is turned on when Rcmdr starts. You can use your "PAGE-UP" and "PAGE-DOWN" keys on the keyboard to flip back and forth through the various plots you have generated.



On the **File** menu option of your R graphics device you will notice that you can copy your image to your clipboard for insertion into other Windows programs (i.e. Microsoft Word). Also you can print the image out as well.

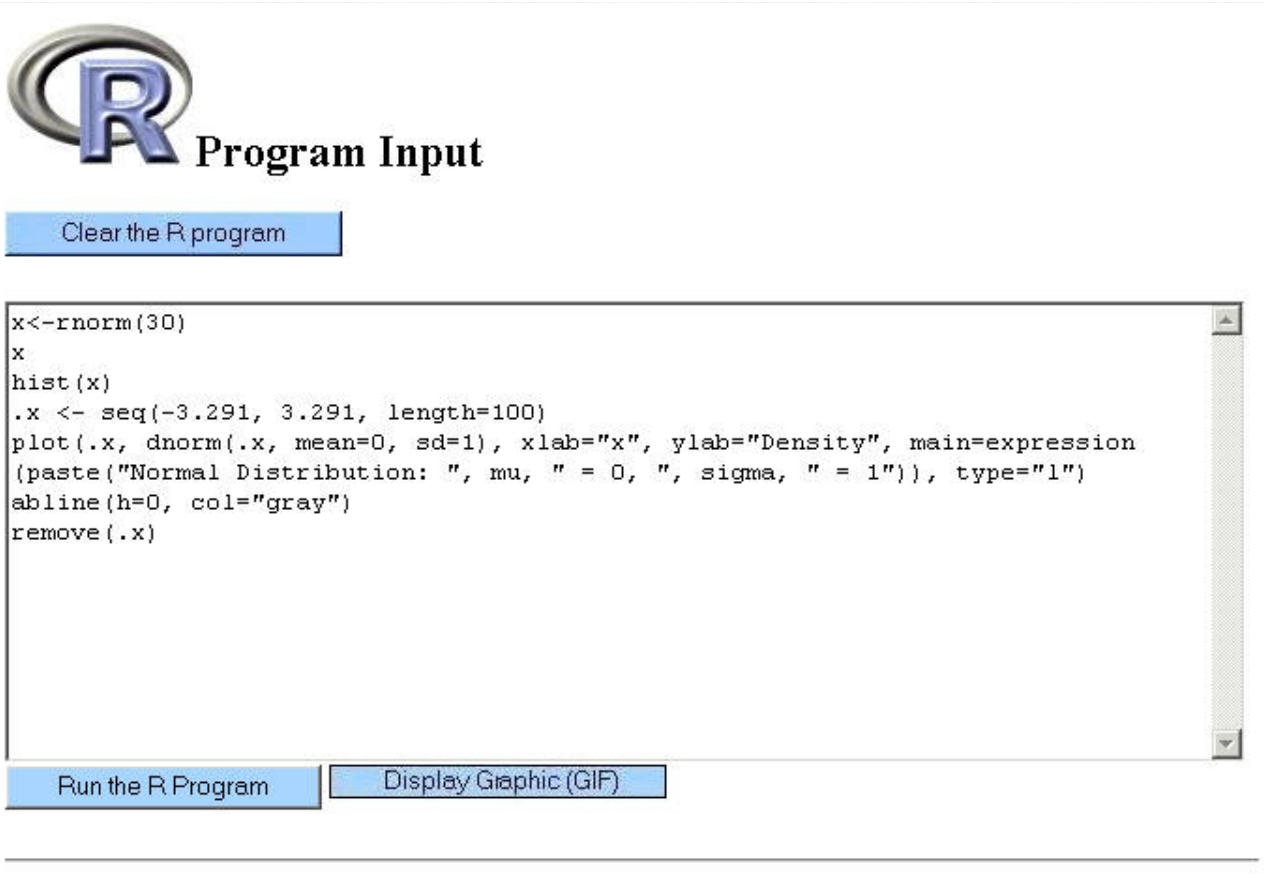


Running R scripts from your Rcmdr window in your Rcgi Web Interface and Vice-Versa

Now we want to Start a web browser at the following link:

http://rss.acs.unt.edu:/cgi-bin/R/Rprog

Paste the R script from your R Commander window into the R Web interface:



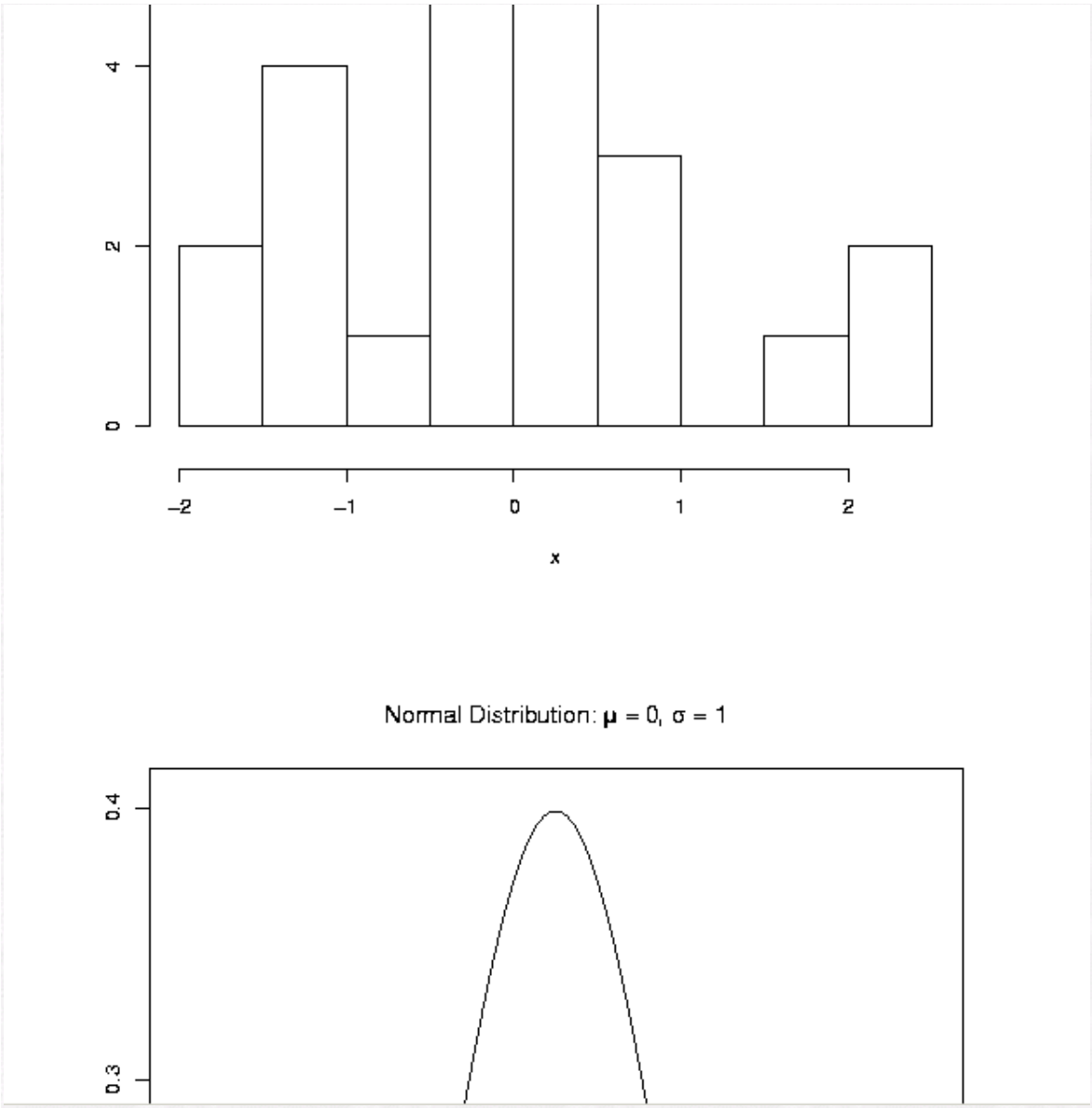
The **"Clear the R program"** button will clear the text from the CGI window; The **"Display Graphic (GIF)"** button will display any images that have been generated. Running the R script produces the following text:

Program Output

```
*** Reference 12385:20040616115431


 R : Copyright 2004, The R Foundation for Statistical Computing
 Version 1.9.0  (2004-04-12), ISBN 3-900051-00-3

 R is free software and comes with ABSOLUTELY NO WARRANTY.
 You are welcome to redistribute it under certain conditions.
 Type 'license()' or 'licence()' for distribution details.

 R is a collaborative project with many contributors.
 Type 'contributors()' for more information and
 'citation()' on how to cite R in publications.

 Type 'demo()' for some demos, 'help()' for on-line help, or
 'help.start()' for a HTML browser interface to help.
 Type 'q()' to quit R.

> postscript("/tmp/R/out/12385.Rps",horizontal=FALSE)
> x<-rnorm(30)
> x
 [1]  2.208836075 -0.075356146  1.505779711 -0.843985008 -0.015290103
 [6] -1.586712326 -0.445050519 -0.139256333 -1.333271165 -0.154997830
[11]  0.021461790 -0.168944954  0.006298734  0.092021108 -0.002851723
[16] -1.674924965 -0.227965484  0.016842216  2.233093633  0.747183530
[21] -0.274493061 -1.101367206 -0.444823478 -0.298343350 -1.270845969
[26]  0.155130381  0.939933519 -0.346617798  0.525746462 -1.444021370
> hist(x)
> .x <- seq(-3.291, 3.291, length=100)
> plot(.x, dnorm(.x, mean=0, sd=1), xlab="x", ylab="Density", main=expression(pa
> abline(h=0, col="gray")
> remove(.x)
>
>
```

Graphical Output: High Quality PostScript (fast) or Low Quality GIF (slow)

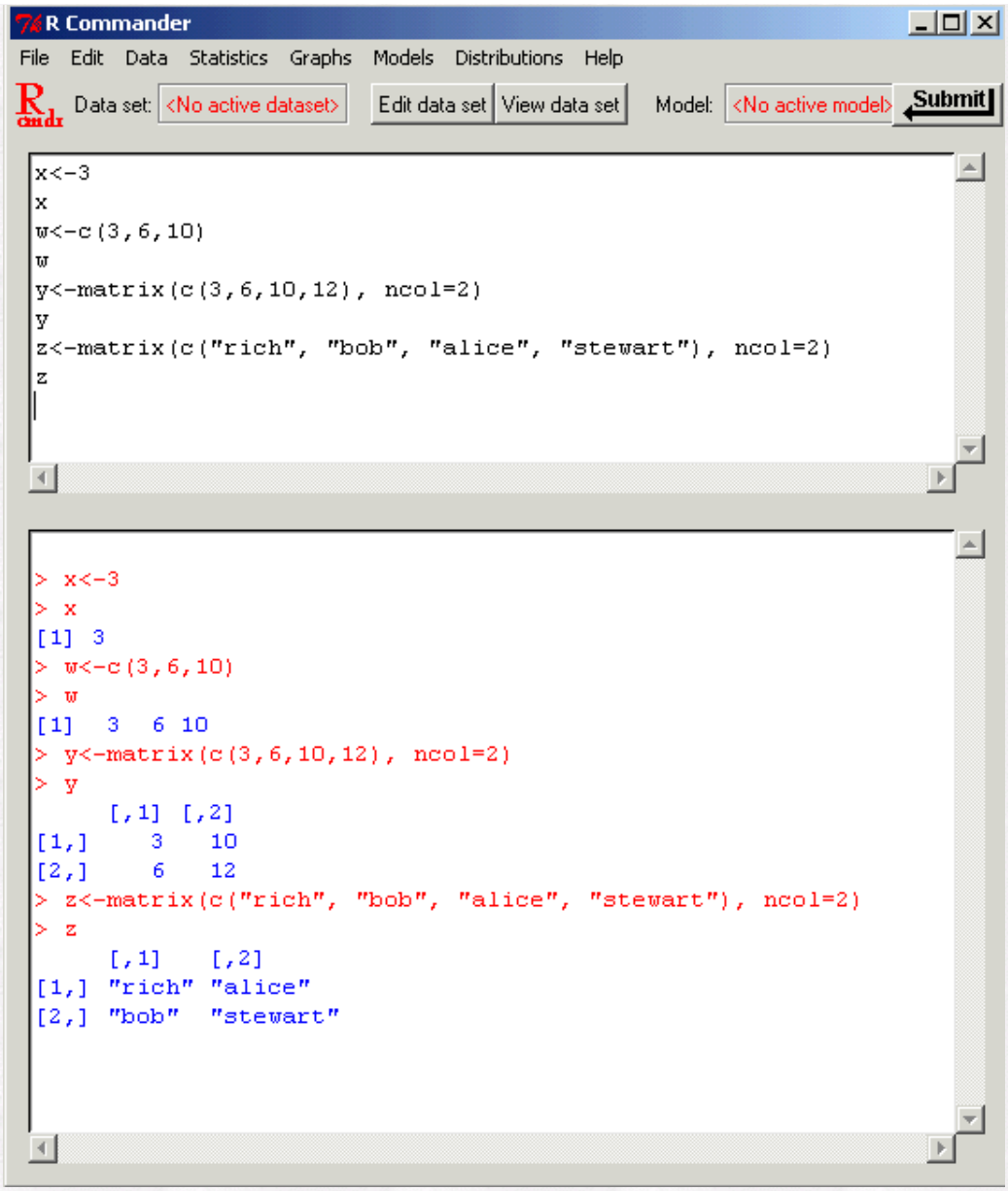
The R script that is processed is produced with the output below the R script. Viewing the graphics can be done by selecting the **"Low Quality GIF"** link at the bottom of the page OR the **"Display Graphic (GIF)** button at the top of the page. A graphic image(s) is generated within the browser:



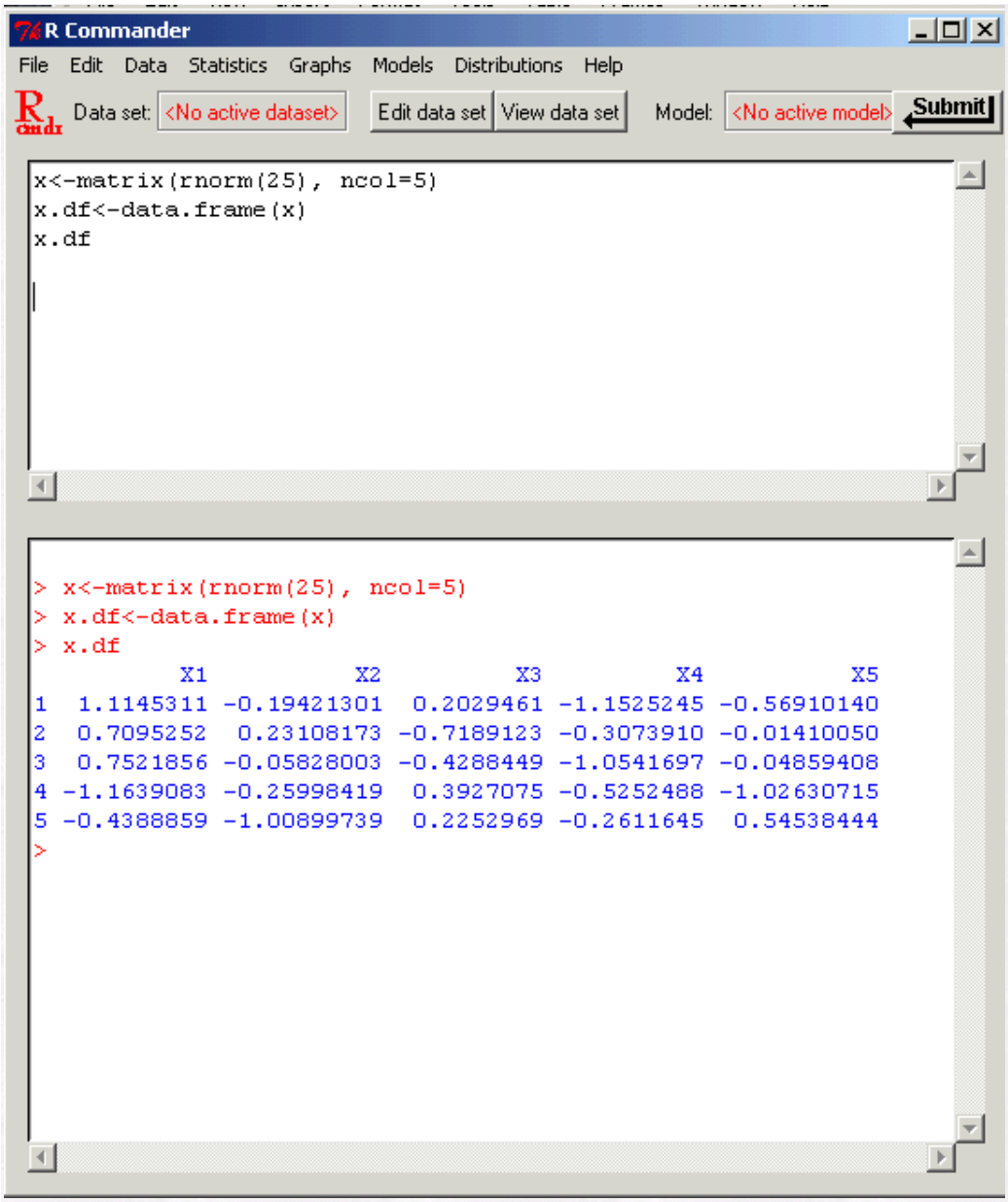
Here we see that the script produces two images. These images can be printed from your browser. Additionally, a right-mouse click on these images will allow you to copy to your clipboard for pasting into other programs (i.e. Microsoft Word), or for saving to a file. **To get back to the script window, press the Back Page on your web browser.** You can continue to click the "Back Page" on your browser to get to the point from which the script window was generated (such as from within an HTML document). **Note: you can right-mouse click on the "Display Graphic" button or the "Low Quality GIF" button and select the "Open in new window" option to open your graphics in a separate window from your script window.**

Creating a Data-frame to Use within R Commander

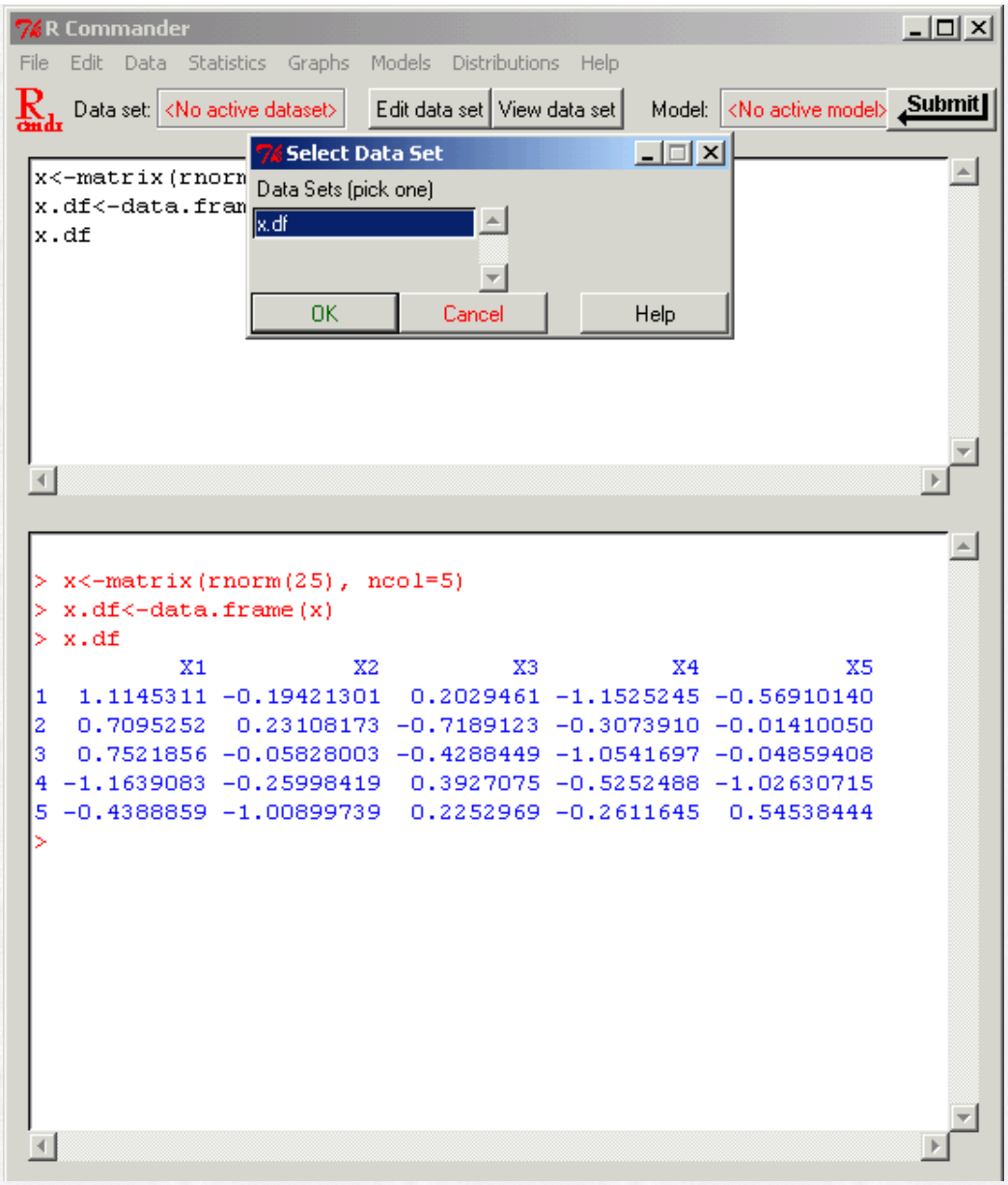
In R we can create a number of different data objects. We can create **scalars** (single numbers), **vectors** (concatenated scalars - a single column or single row of numbers), or a **matrix** (concatenated vectors - several adjacent columns with multiple rows). Additionally, data can be of **type "character" or "numeric".** Vectors and matrices must be all of one type or the other. For example:



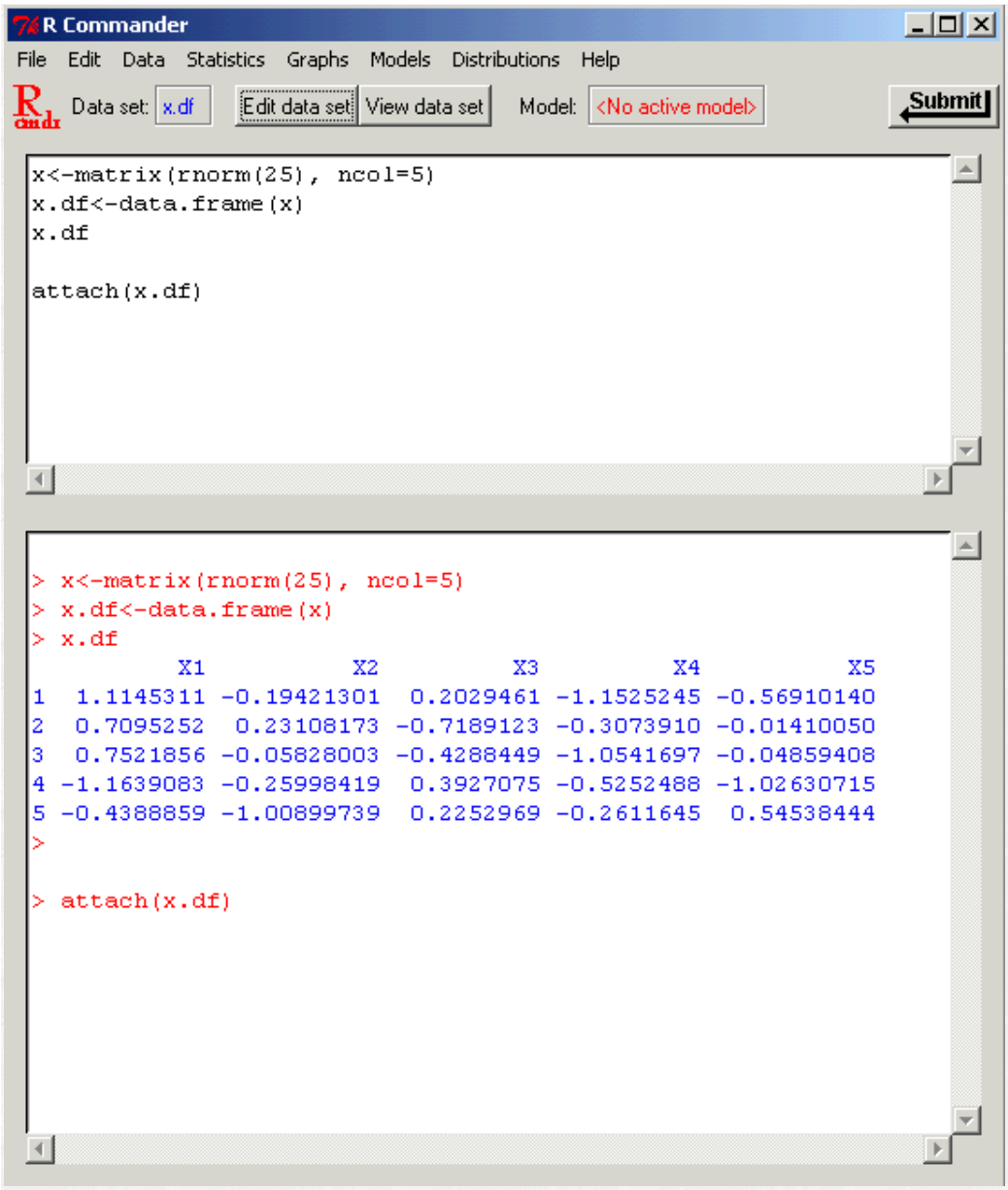
We could not mix character type "rich" and the numeric type "3" in a vector or matrix. We need a **"data-frame"** for this purpose. The data-frame is what is we will refer to a rectangular data matrix where columns are "variables" or measurements on each respondent and rows are the distinct respondents. For example, a column could consist of names, another column might consist of salaries. "Names" would be a character variable and "Salary" would be numeric variable in the same data matrix. R Commander will need all data that will appear in the drop down dialog boxes to be in the form of a data-frame so that variable information can be utilized in the menu system. To create a simulated data-frame we can use the following script:



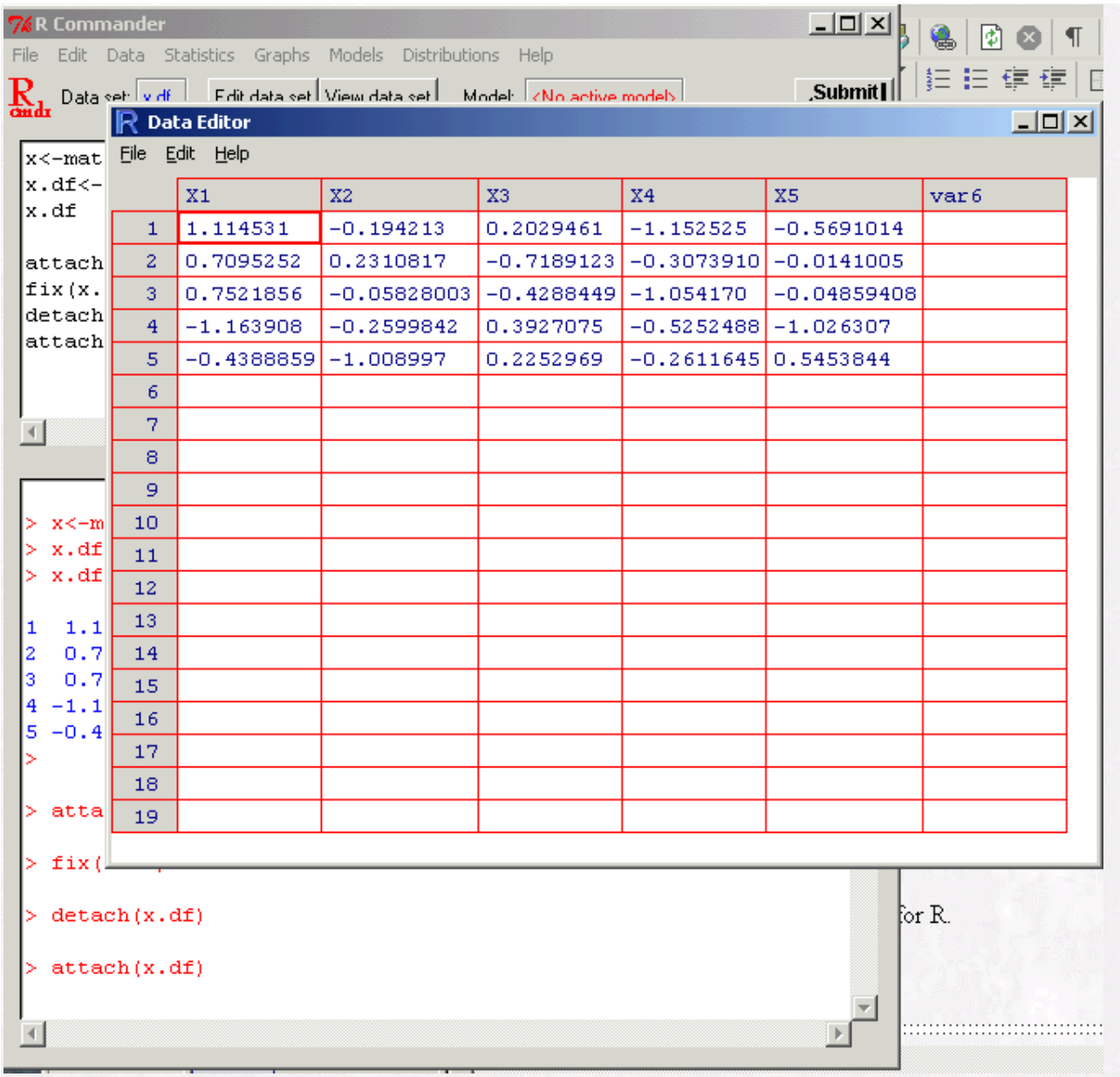
Notice that the data.frame function generates default variable headings: X1, X2, X3, X4, X5. These would represent variables for respondents. The numbers 1,2,3,4,5 would represent different respondents. Next, notice that the "**Data Set**" icon is grayed out and there is "**<No active dataset>**". Click the "Data Set" icon button and a drop down menu list will appear. Select the "x.df" object:



Notice that there is now an "Active data set" called x.df.



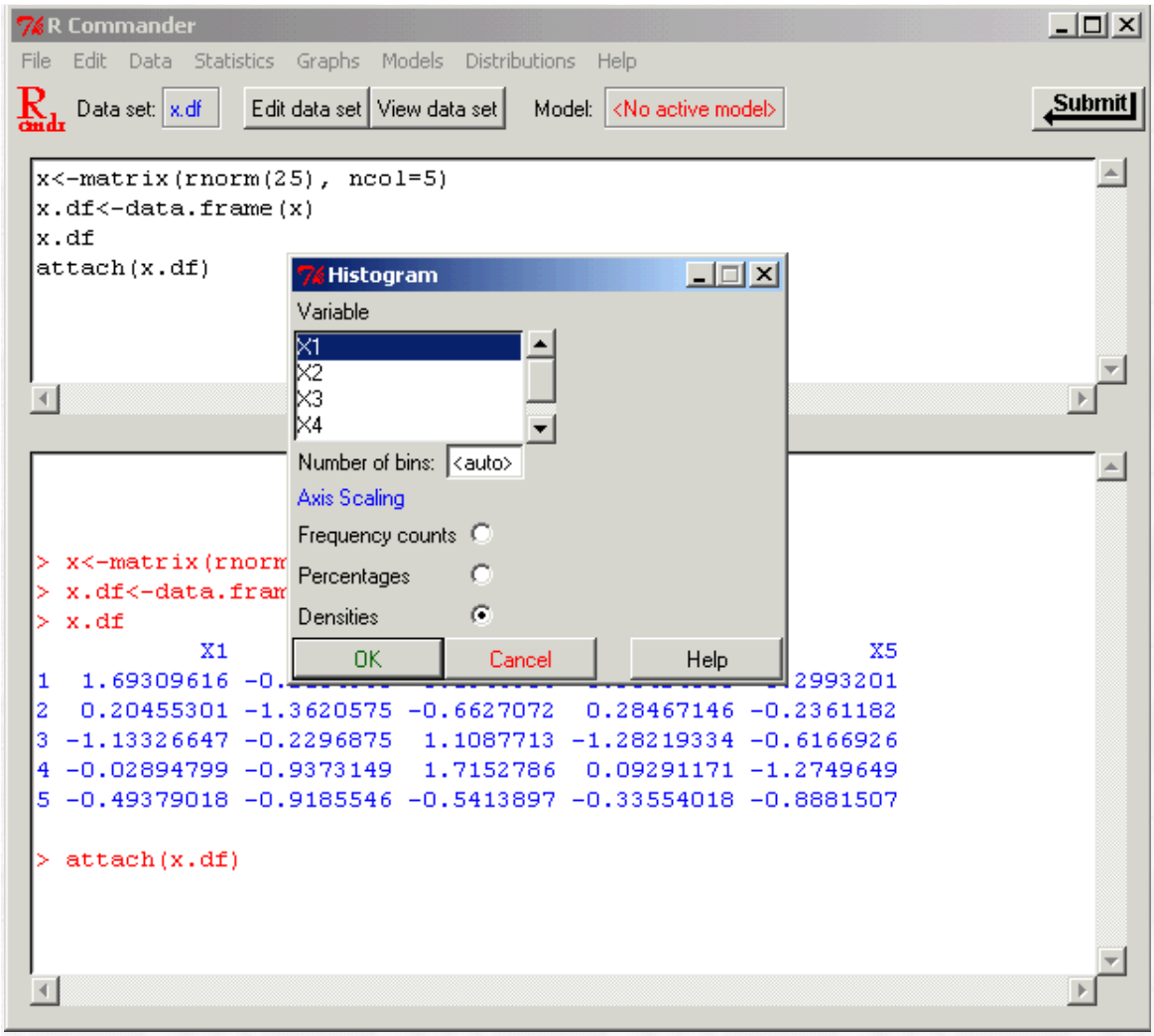
This mechanism allows a user to switch between different data sets for viewing and editing. Simple editing and viewing in a spreadsheet fashion can be accomplished by selecting **"Edit data set" or "View data set"**:



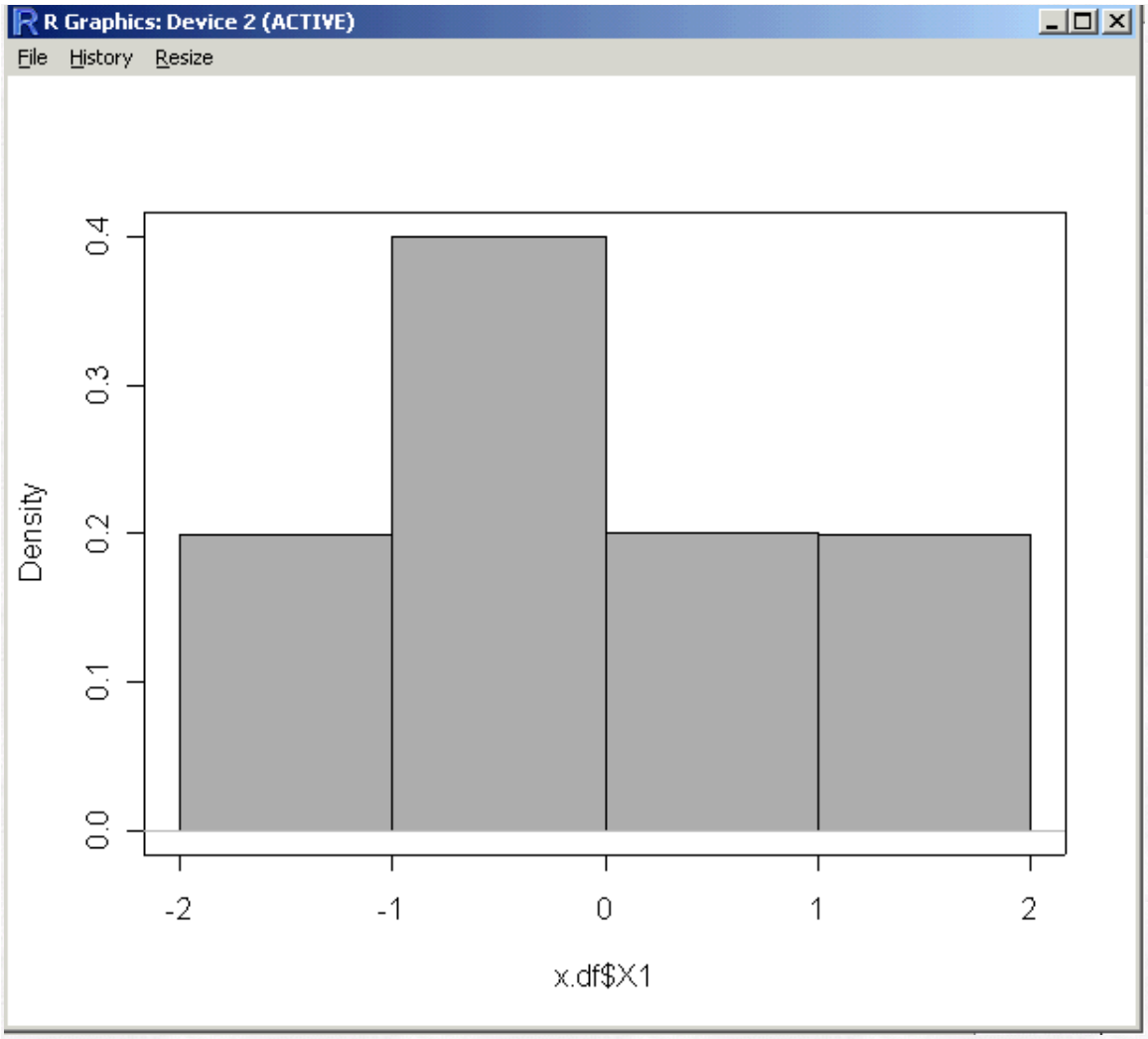
NOTE: Make sure that you close the editing or viewing window before opening or moving to other windows!! There is a limitation of the spreadsheet program in that it doesn't work well with other windows that are concurrently open. For this reason, edit, enter or view your spreadsheet and finish this task before moving on to other window movements or dialog boxes. **Remember, in general you will need to have an active data set in order to use the menu systems - unless you are using the menu system to generate a graph or data (not ACTING on data).**

Using other Menus in R Commander

In general, the variables of the data-frame will appear in the men dialog boxes. Selecting these variables with the mouse will make them active in the dialog box. For example to generate a histogram:



Producing the following density plot (a histogram with a relative frequency on the y-axis):



References

Fox, John (2003). The R Commander: A Basic-Statistics GUI for R. http://socserv.mcmaster.ca/jfox/Misc/Rcmdr/

Return to top

WWW@UNT.EDU

Need Statistics for Your Website?

This is an updated version of an article that we ran in May, 2000. - Ed.

By Shane Jester, Campus Web Administrator

If you have a Website that is hosted by Central Web Support at UNT, you can get a detailed statistical report of Web use for that site. The report will contain a general summary of statistical information including the following:

Successful requests - The number of total successful requests for any files on your site.
Average successful requests per day
Successful requests for pages - the number of total successful requests for Web pages only (does not include images)
Average successful requests for pages per day
Failed requests - number of links to pages or files that do not exist (helps to find invalid URLs in your site.
Redirected requests - any links to built-in redirects on your site.
Distinct files requested - number of different files that were requested through period (duplicate requests not counted)
Distinct hosts served - number of different computers that accessed your site
Data transferred - total amount of data that was transferred in kilobytes
Average data transferred per day

Additionally, you will receive more detailed statistical information including weekly usage breakdown, a list of files requested with the number of requests for each file, and a list of sites that referred your site (i.e. linked to your site).

Currently we produce statistics once a month. The statistics are sent via E-mail within a few days of the end of a statistical period. If you would like to receive these statistics please contact jester@unt.edu and include the URL of your Website in addition to the E-mail address where you would like the statistics mailed.

Return to top

Benchmarks Online

Skip Navigation Links

Page One

Campus Computing News

Microsoft Campus Agreement Benefits Faculty and Staff

Checkin 4.0 on the Move

EIS Online Help Available

Call for Proposals: CUMREC

Today's Cartoon

RSS Matters

The Network Connection

Link of the Month

WWW@UNT.EDU

Short Courses

IRC News

Staff Activities

Subscribe to Benchmarks *Online*

Short Courses

By Claudia Lynch, *Benchmarks Online* Editor

Fall Short Courses are underway. Surf over to the Short Courses page to see the classes that remain and information about registration. "Getting Started with DreamWeaver MX" is full but all the rest of the courses still have room for students.

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.

EIS Training

Electronic Procurement (ePro) Training Classes

The following dates have been set for training. Note there are two classes given on each date - an Approver's class and an ePro Coordinator's class. Please e-mail Tina Koenig, tinak@unt.edu, indicating the date you plan to attend and for which class. ***We'll attempt to hold classes every Tuesday, unless otherwise advised.***

Approvers:
2:00 PM to 3:00 PM,
3:00 PM to 4:00 PM,
4:00 PM to 5:00 PM

Coordinators
8:00 AM to 12:00 Noon

Note: If you have not submitted an ePro DeptID Holder Information Form or an ePro Coordinators Information Form, please print out the forms attached and

bring the applicable form with you to the training class or fill the form out on-line and attach it to your email requesting registration. This is necessary in order to establish security for your use of the system.

Timekeeper Training

All Timekeeper Training sessions are held in ESSC 152 from 9:00am-Noon. You can register online (**https://home.unt.edu/hr/training/treg.htm**) or by calling (940) 565-4246.

Timekeeper Session Dates

- Wednesday, Nov 3
- Wednesday, Dec 1

Student Records Level I Training

The Registrar's Office has announced EIS Student Records Level I Training for the fall. Please review the training schedule below for available times and dates.

STUDENT RECORDS LEVEL I TRAINING: Level I Student Records Training is a hands-on training session that concentrates on basic view access in EIS. In addition to discussions on basic EIS academic structure the users will view student personal information, FERPA status, residency status, registration eligibility, study lists (schedules), grades, enrollment requests, programs/plans, service indicators (blocks) and print unofficial transcripts. Users will also learn how to search for classes and rooms, view class rosters and look up instructor schedules and view the my.unt.edu student portal.

TO REGISTER: Email Carla Clark at Carla@acad.admin.unt.edu with your preferred training time. Please include your EUID, full email address and position at UNT. If you do not know your EUID please go to: https://ams.unt.edu/whatsmyeuid.php

Dates for Level I training in ESSC 152 lab:

- Oct 21, 8:30-11a.m.
- Nov 10, 8:30-11a.m.
- Dec 8, 8:30-11 a.m.

GroupWise Training

Information about GroupWise training can be found at the GroupWise course site.

If would like to have a Basic GroupWise seminar for your area, please contact Jason Gutierrez, Network Computing Services, 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

There 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.pware.com/index.cfm?clientid=2694a

Alternate Forms of Training

Many of the General Access Labs around campus have tutorials installed on their computers. For example, the College of Education 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.

For further information on CBT at UNT, *Check Out the CBT Website for all Your Online Training Needs* in the July issue of *Benchmarks Online.*

Return to top

Benchmarks Online

Skip Navigation Links

Page One

Campus Computing News

Microsoft Campus Agreement Benefits Faculty and Staff

Checkin 4.0 on the Move

EIS Online Help Available

Call for Proposals: CUMREC

Today's Cartoon

RSS Matters

The Network Connection

Link of the Month

WWW@UNT.EDU

Short Courses

IRC News

Staff Activities

Subscribe to Benchmarks *Online*

Staff Activities

Transitions

New Employees:

- **Kyle Turner**, Microcomputer Consultant, Helpdesk (part-time).
- **Jason Miller**, Microcomputer Consultant, Helpdesk (part-time).
- **Howard Draper**, Information Security Intern (part-time).
- **Patrick Rayburn**, I/O Operator, Printing Services, MTS (part-time).

No longer working in the Computing and Information Technology Center:

- **Basil Oleru**, Oracle Data Base Administrator on EIS Project, ADM.
- **Cathy Jackson**, University Information Operator.

Awards, Recognition, Publications, etc.

Rory Rivoire, Communications System Manager, was honored at the Staff Convocation on September 29. He received a Staff Contribution Award of $1,000.

Joe Adamo, Director of Communication Services, discussed UNT's expansion plans for wireless Internet access points in the Aug. 29 *Fort Worth Star-Telegram*. (September 17 *Inhouse@unt*).

Return to top

Benchmarks Online

Skip Navigation Links

Page One

Campus Computing News

Microsoft Campus Agreement Benefits Faculty and Staff

Checkin 4.0 on the Move

EIS Online Help Available

Call for Proposals: CUMREC

Today's Cartoon

RSS Matters

The Network Connection

Link of the Month

WWW@UNT.EDU

Short Courses

IRC News

Staff Activities

Subscribe to Benchmarks *Online*

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 Dr. Rich Herrington and is titled "Two User Interfaces to the R Statistical System: Rcgi and R Commander ."**

- **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.

  This month Dr. Baczewski brings you up to date on "Internet Odds and Ends."

- **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 ask the question: "Did you know that UNT is the home of a national 'CyberCemetary?'"**

- **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, Shane Jester talks about how people can get statistics for their websites in a reprise article, "Need Statistics for Your Website?"**

- **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. Fall Short Courses are underway now. "Getting Started with DreamWeaver MX" is full but all the rest of the courses still have room for students.

- **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's minutes are from the September 21, 2004 meeting.

- **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.

Return to top