Benchmarks Online

Volume 6 - Number 7 * July 2003

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We've been telling you about this all summer. Time is almost up. Details inside.

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Advanced Fee Fraud Alert

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How Does "Intellectual Property" Hamper Technology?

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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** - Dr. Herrington continues his series on R with the article "R Commander: A Simple Windows Interface for R on the Windows Platform."

- **The Network Connection --** Dr. Baczewski asks the question "Does the Internet Work?" You may be surprised at his answer.

- **Link of the Month --** Network Computing Services' Website is featured this month.

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- **Short Courses** -- Summer Short Courses are still available, but just barely.

- **IRC News** -- Minutes of the Information Resources Council are printed here when they are available. The June 17 minutes are included this time.

- **Staff Activities** -- 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.

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Research and Statistical Support
University of North Texas

RSS Matters

*Link to the last RSS article here: R for the Windows Platform: Installation and Configuration - Ed.*

R Commander: A Simple Windows Interface for R on the Windows Platform

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

This month we demonstrate how to utilize the R library "Rcmd" (R Commander) - a simple menu system for R on the Windows Platform. 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

To use the Rcmdr library, we will want to configure the R system window to have a "single document interface" mode. 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.
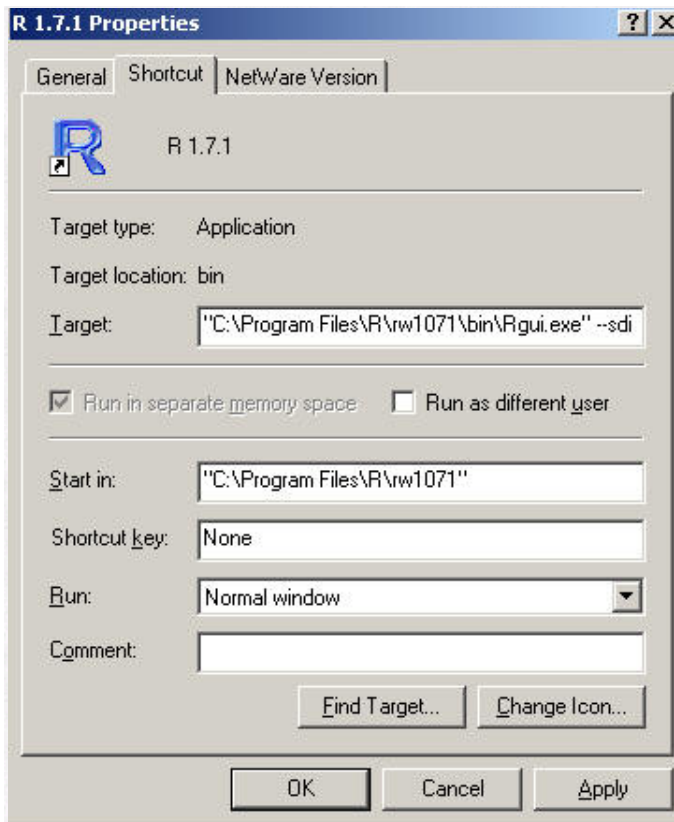
To load a library in R, select **Packages** from the main menu bar and select **Load Package**.
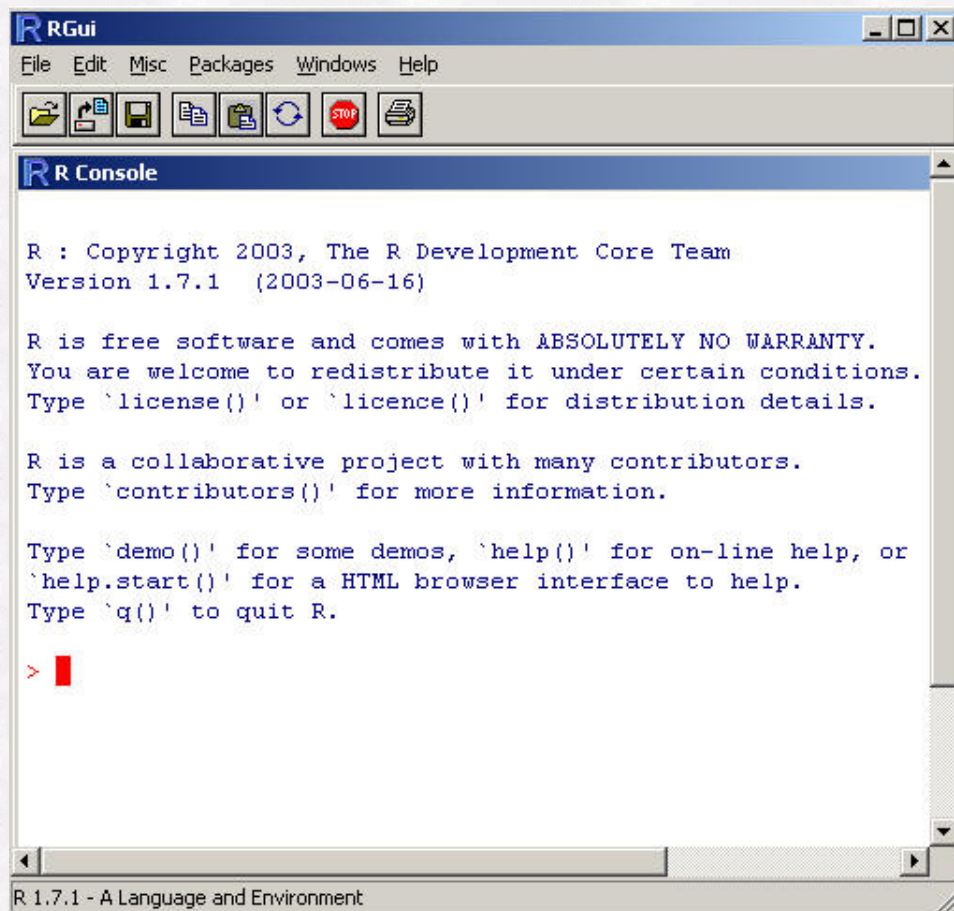
Select the Rcmdr library in the package selection window. The following menu system will appear:
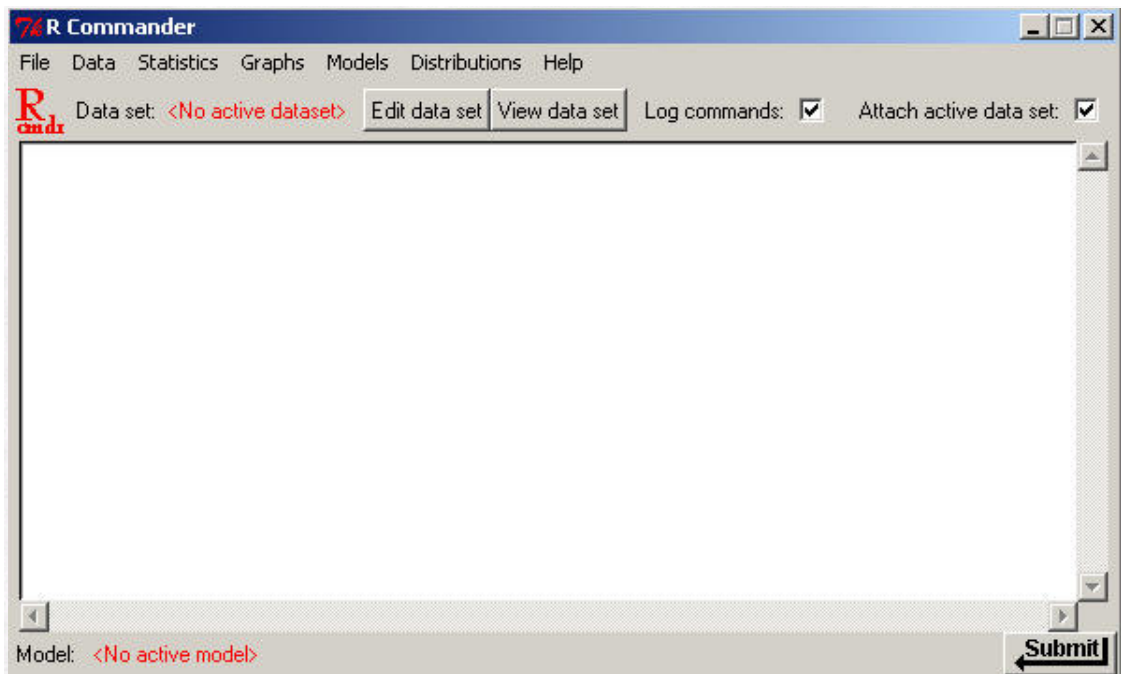
The Rcmdr or "R Commander" library is a simple menu system based on Tcl/Tk. You can read more about Rcmdr at http://www.socsci.mcmaster.ca/jfox/Misc/Rcmdr/index.html .

To import an SPSS data set:
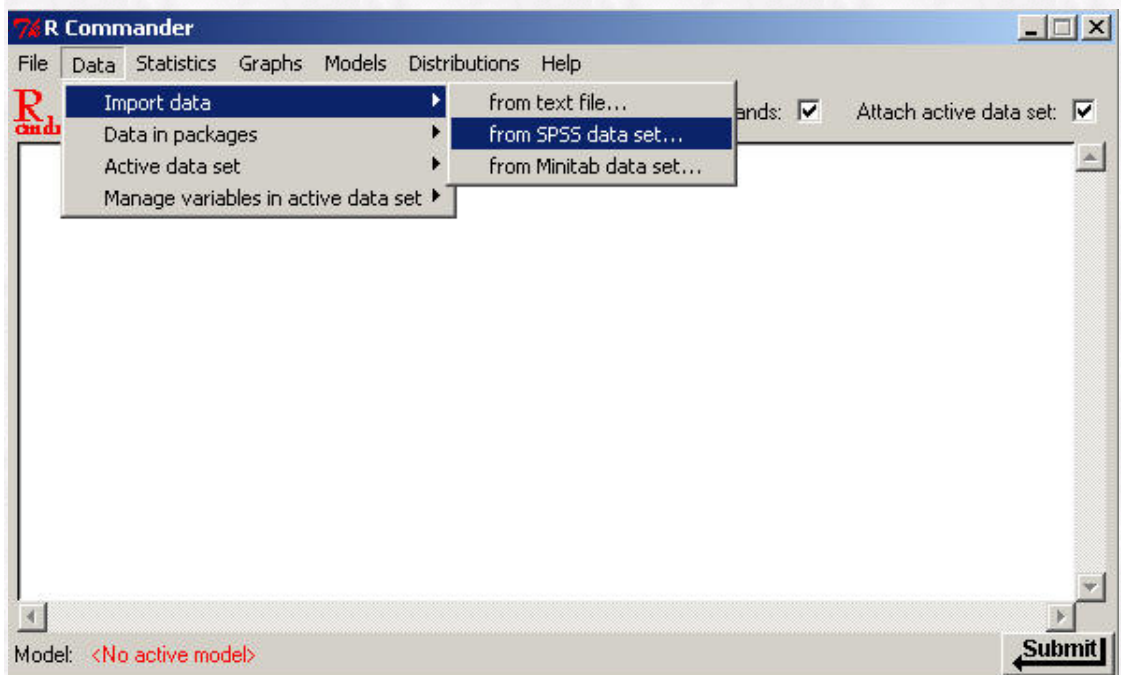
Give the imported data set a working session name (i.e. Survey), then browse the file system to select your SPSS data set. We will use survey data that was collected from an undergraduate statistics class.

```
R Commander
File  Data  Statistics  Graphs  Models  Distributions  Help

Data set: Survey  [Edit data set] [View data set]  Log commands: ☑   Attach active data set: ☑

Survey <- read.spss("C:/rich/survey/data/psy3610/classsurvey.sav", use
attach(Survey)

Model:  <No active model>                                        [Submit]
```
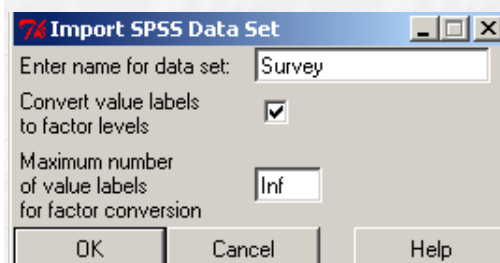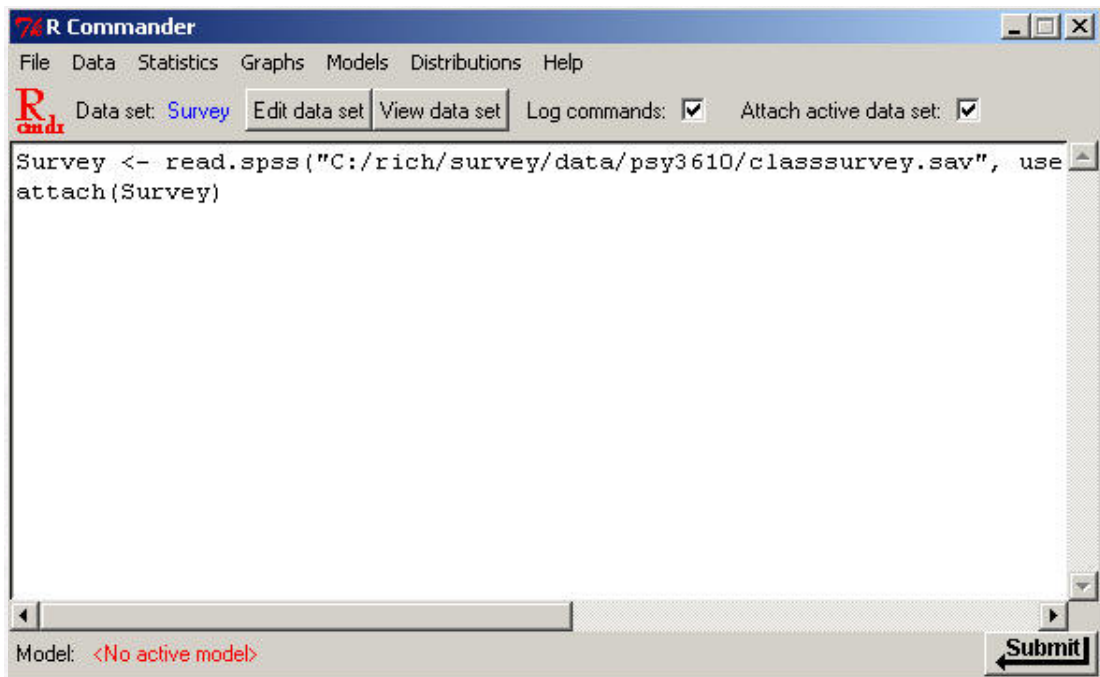
Editing and Viewing of the data can be accomplished by selecting the **"Edit data set"** button or the **"View data set"** button:

```
Data Editor
File  Edit  Help
```

	CLASS	MATH	GENDER	NUMBER	MIDEAST	HAPPY	STRESS	INTERNET
1	Senior	6	Male	52	1	7	50	30
2	Junior	7	Female	10	5	5	95	7
3	Senior	4	Female	9	7	4	60	1
4	Senior	5	Female	25	2	5	60	30
5	Senior	3	Male	7	5	7	2	30
6	Junior	1	Female	5	4	8	36	2
7	Senior	1	Female	30	1	5	0	10
8		6	Female	11	7	7	70	40
9	Sophomore	9	Female	711	8	7	70	17
10	Senior	5	Male	10	6	1	65	5
11	Junior	7	Female	8	7	6	75	2
12	Freshman	9	Female	260	3	5	25	5
13	Junior	8	Female	26	5	7	90	30
14	Junior	8	Male	24	3	5	85	20
15	Junior	7	Female	1085	6	9	10	15
16	Senior	2	Female	18	4	8	80	2
17	Junior	6	Male	2	6	4	70	60
18	Senior	2	Female	6	1	7	55	4
19	Senior	4	Female	17	5	7	60	25
20	Senior	1	Female	28	5	7	75	5
21	Junior	8	Male	35	5	7	58	31
22	Junior	9	Male	4	4	5	25	1

This survey data was collected as part of an undergraduate course in applied statistics. The survey was collected using the UNT **"Zope"** server using the open source package **"QSurvey"**. You can read more about collecting surveys on this system at: http://www.unt.edu/rss/class/survey/QSurvey.html   If

you are interested learning how to collect surveys on the UNT Zope server you can sign up for the **"New Survey Technologies"** Short Course - details at: http://www.unt.edu/training/shortcrs.htm The actual survey can be found at: http://kryton.cc.unt.edu:8080/psy3610_survey/QSurvey1 For example, the first page of questions:

What is your number?

[   ]

What is your age?

please enter whole numbers:

[   ]

Male or Female?

○ M   ○ F

How comfortable are you with mathematics?

1 = "Very uncomfortable"   9 = "Very comfortable"

○ 1   ○ 2   ○ 3   ○ 4   ○ 5   ○ 6   ○ 7   ○ 8   ○ 9

How would you rate the campaign in the Middle East (Iraq, Afghanistan etc.) in terms of success or failure in the "War on Terrorism" (i.e. decreasing the likelihood of terrorist attacks)

1 = "Total failure"   9 = "Total success"

○ 1   ○ 2   ○ 3   ○ 4   ○ 5   ○ 6   ○ 7   ○ 8   ○ 9

[Continue to next page]

The first step in the modeling process is to set up a model. An obvious choice might be ANOVA or a Regression Model. Suppose we wish to predict "current general happiness" from "income", "stress", and "physical fitness":

How would you rate your general happiness over the course of the last month ?

1= "Very unhappy"   9 = "Very happy"

○ 1   ○ 2   ○ 3   ○ 4   ○ 5   ○ 6   ○ 7   ○ 8   ○ 9

Which of the following categories best describes your yearly income?

○ < $10,000   ○ $10-19,999   ○ $20-34,999   ○ $35-50,000   ○ > $50,000

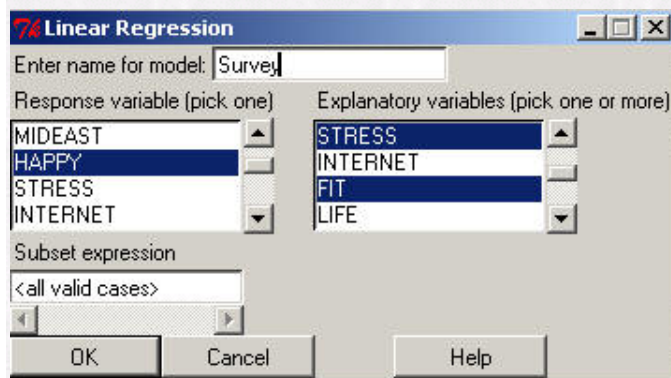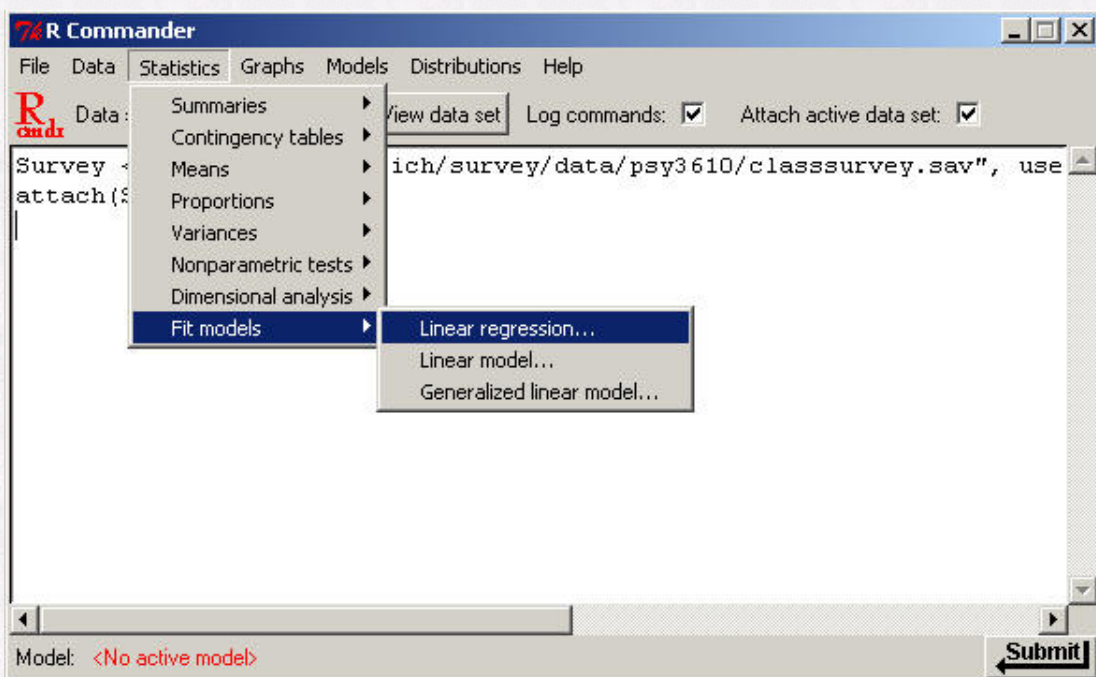**On a scale of 0 to 100, how stressful would you say your average day is?**

(Whole numbers only please)

[   ]

How physically fit would you describe yourself?

1 = Very unfit   9 = Very fit

○1   ○2   ○3   ○4   ○5   ○6   ○7   ○8   ○9

Many of the functions in Rcmdr depend on setting up a model first. To set up a regression model we go to the menu bar and select "Statistics-Fit models-Linear regression":

Select a response variable: HAPPY, then select the predictor variables: STRESS, FIT, and SALARY. The regression output will appear in the R console:

```
R R Console                                                    _ □ ×
File  Edit  Misc  Packages  Help

R-cmdr> summary(Survey)

Call:
lm(formula = HAPPY ~ STRESS + FIT + SALARY, data = Survey)

Residuals:
    Min      1Q  Median      3Q     Max
-4.6778 -0.8702  0.3970  1.0807  2.5756

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)  5.52820    1.06743   5.179 1.88e-05 ***
STRESS      -0.01572    0.01107  -1.420  0.16697
FIT         -0.04121    0.15987  -0.258  0.79856
SALARY       0.75046    0.22799   3.292  0.00278 **
---
Signif. codes:  0 `***' 0.001 `**' 0.01 `*' 0.05 `.' 0.1 ` ' 1

Residual standard error: 1.568 on 27 degrees of freedom
Multiple R-Squared: 0.2992,     Adjusted R-squared: 0.2213
F-statistic: 3.842 on 3 and 27 DF,  p-value: 0.02065

>
```

In the output above, we see that SALARY has a positive association with general happiness: the unstandardized beta coefficient of .75046 has a significance value of p=.002. STRESS and FITNESS do not appear to be statistically significant (the p values - Pr(>| t |) - are not less than .05). Part of conducting regression analysis should be checking residual diagnostics and checking for outliers.

```
R R Commander                                                  _ □ ×
File  Data  Statistics  Graphs  Models  Distributions  Help

R    Data set: Survey   Edit da    Select active model...        Attach active data set: ☑
cmdr                                Summarize model
Survey <- read.spss(                ANOVA table              0/classsurvey.sav", use
attach(Survey)                      Variance-inflation factors
Survey <- lm(HAPPY~S                Basic diagnostic plots    ey)
summary(Survey)                     Component+residual plots
                                    Added-variable plots
                                    Influence plot
                                    Add observation statistics to data...

Model: Survey                                                          Submit
```

The diagnostic plots on the residuals indicate that the residuals are approximately normally distributed (upper right panel - we want a straight line through the dots). However, two values are marked as potential outliers with Cook's outlier diagnostic (influential observations). Case 10 and 15 should be considered for removal:
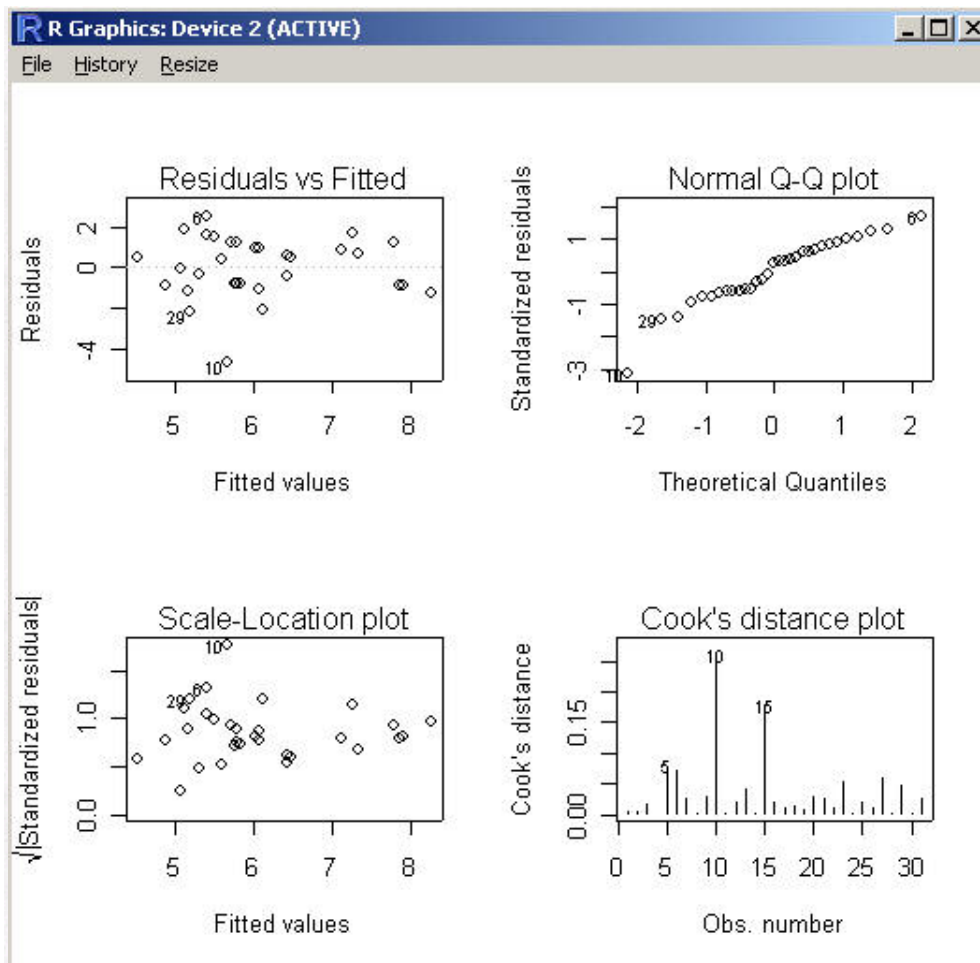
A more informative view of influential observations can be gained by looking at an influence plot:
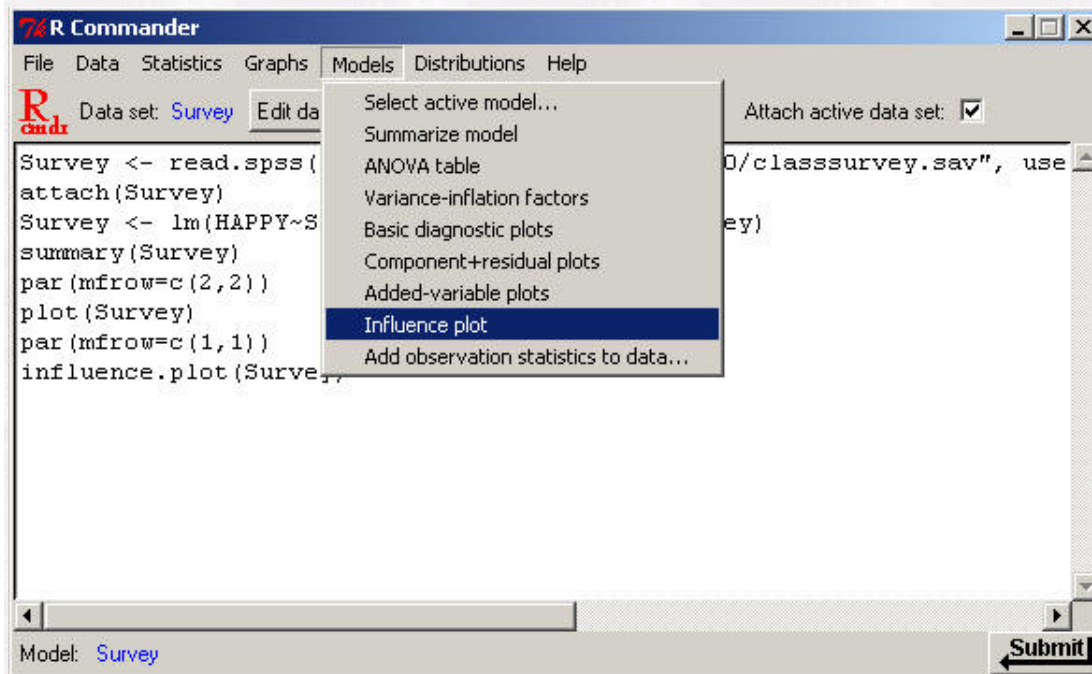

The mouse can be used to identify the case numbers that are potential outliers.   After identifying outliers with the interactive crosshair, click the "Stop" button in the upper left graphics window, to return control back the windowing system.
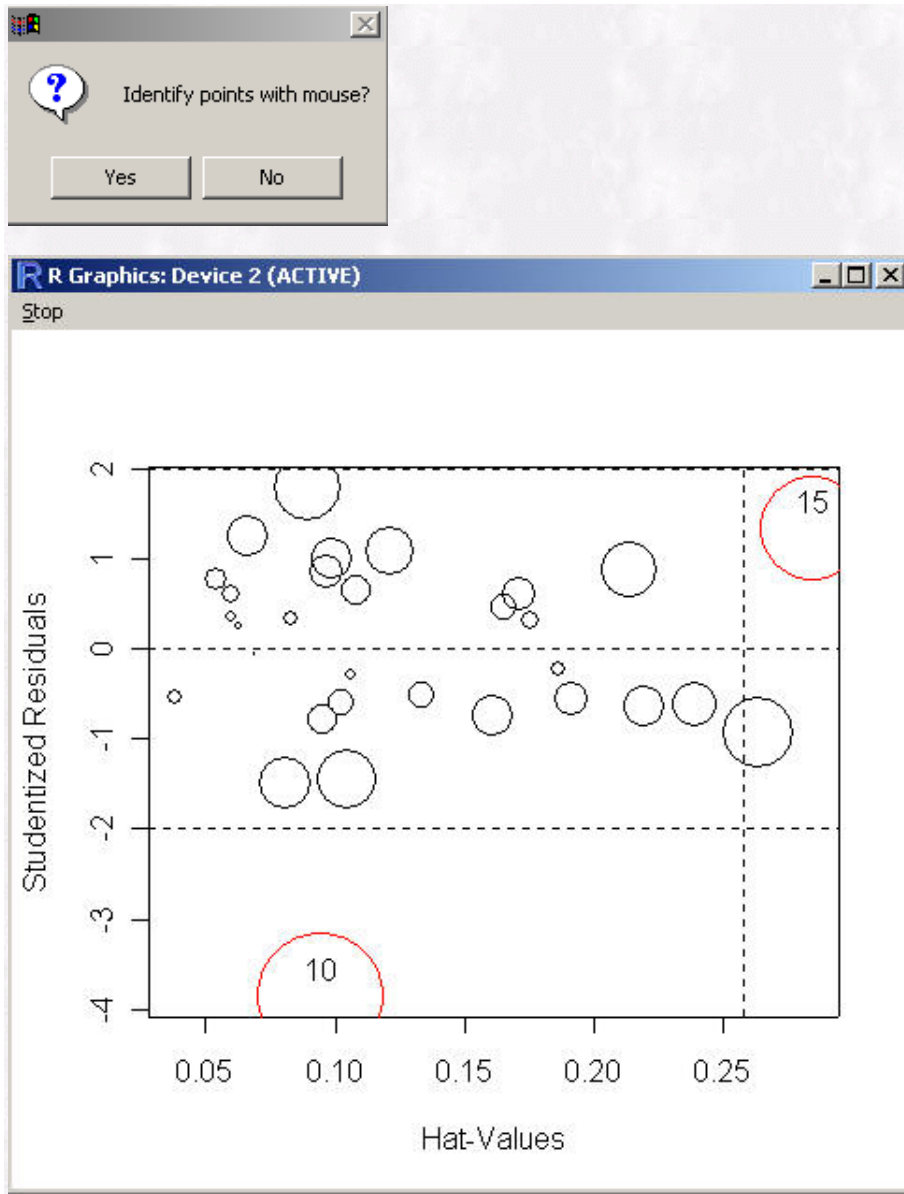
We can remove the data points identified by creating a new data set called "Survey2". Using the Rcmdr log window type the following script and highlight this script and click the "Submit" button in the lower left portion of the Rcmdr window:
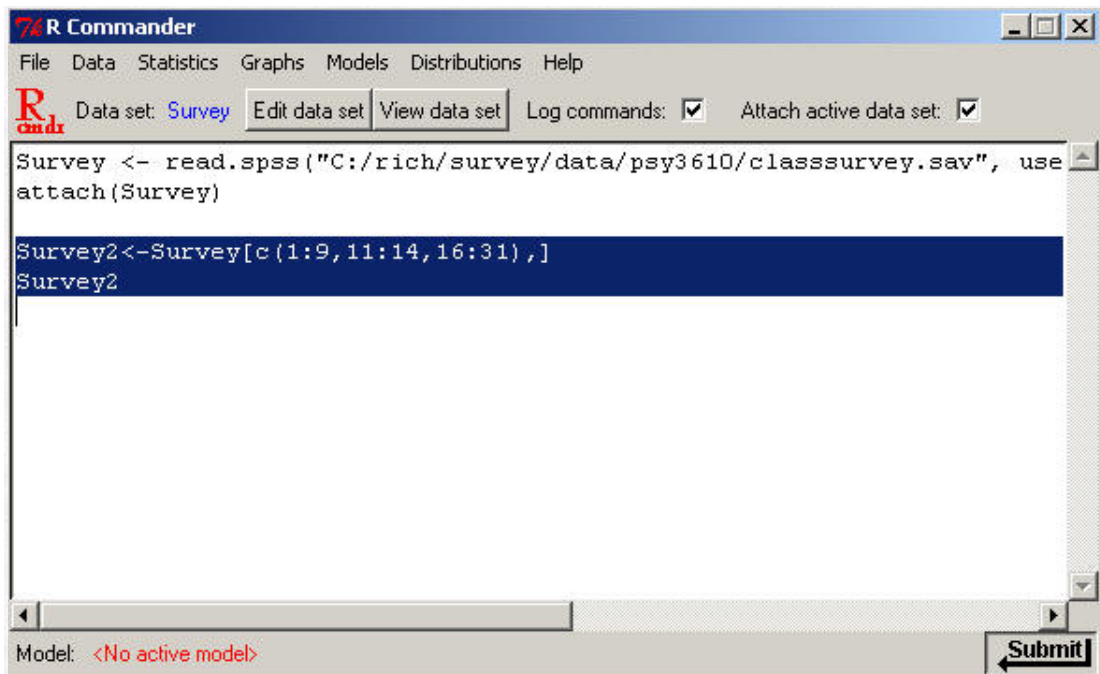
This short script removes those cases that are outliers, but retains all other observations. In this case we have removed case number 10 and 15. Next, we attach the "Survey2" data set so that it is the active working data set:
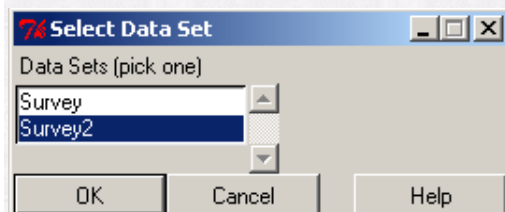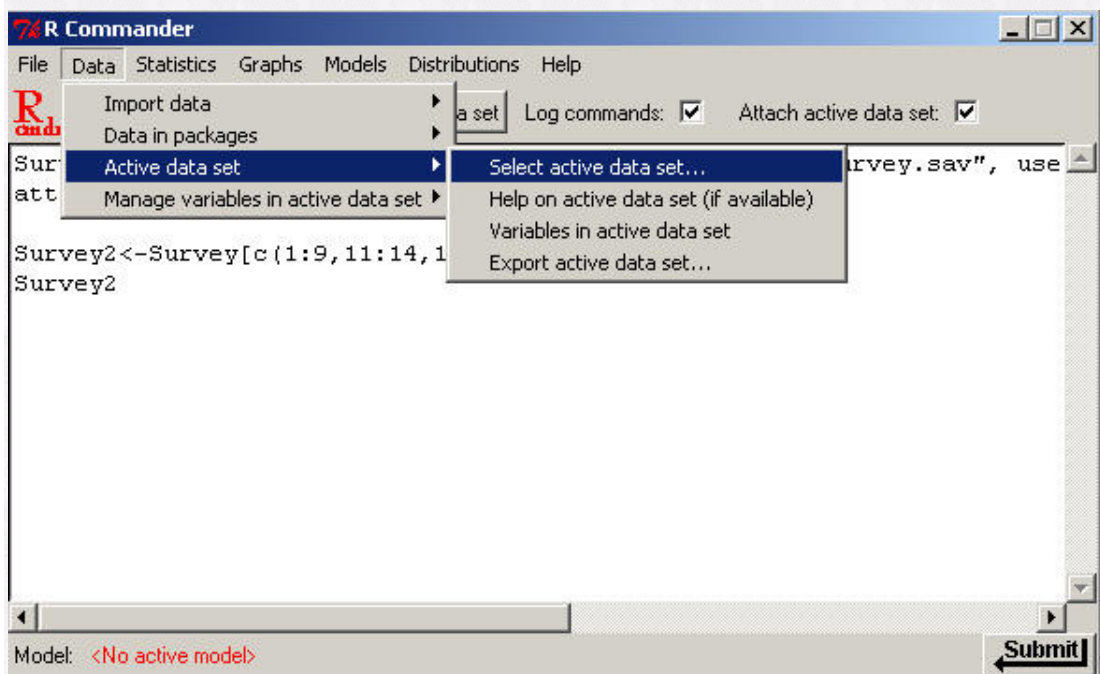
Next, we need to setup a new active model. Go to the menu bar once again and select, "Statistics-Fit models - Linear Regression" and select HAPPY as the outcome variable and STRESS, FIT, and SALARY as the predictor variables. The following output is obtained in the R Console:

```
R Console                                                    _ |□| X|
File  Edit  Misc  Packages  Help

R-cmdr> RegModel <- lm(HAPPY~STRESS+FIT+SALARY, data=Survey2)

R-cmdr> summary(RegModel)

Call:
lm(formula = HAPPY ~ STRESS + FIT + SALARY, data = Survey2)

Residuals:
    Min      1Q  Median      3Q     Max
-2.4522 -0.8723 -0.0666  0.9642  2.4287

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)  5.190039   0.886752   5.853 4.18e-06 ***
STRESS      -0.008509   0.009680  -0.879  0.38776
FIT          0.002700   0.145417   0.019  0.98533
SALARY       0.668718   0.186725   3.581  0.00144 **
---
Signif. codes:  0 `***' 0.001 `**' 0.01 `*' 0.05 `.' 0.1 ` ' 1

Residual standard error: 1.261 on 25 degrees of freedom
Multiple R-Squared: 0.3391,     Adjusted R-squared: 0.2598
F-statistic: 4.275 on 3 and 25 DF,  p-value: 0.01443

>
```

It would appear that even with the two outliers removed, that the relationship between SALARY and HAPPY remains. Scatter-plot matrices are usually a useful for checking the linearity of the relationships between the predictor and outcome variables.
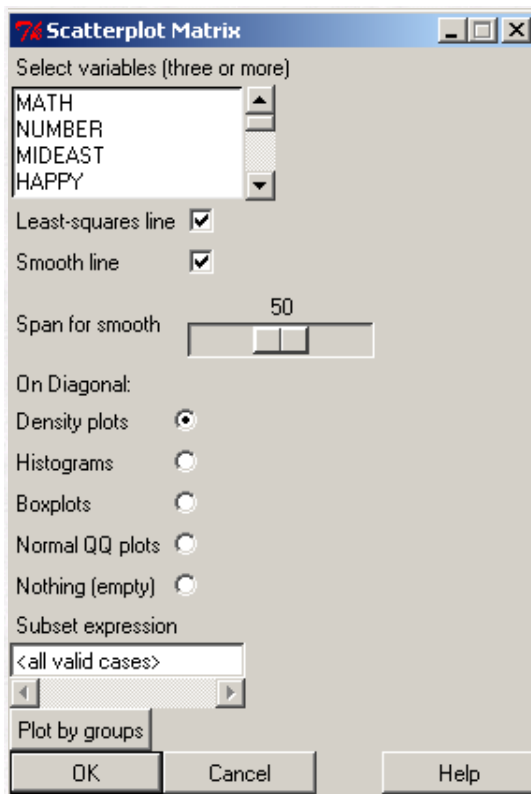
```
R Commander                                                  _ |□| X|
File  Data  Statistics  Graphs  Models  Distributions  Help

R    Data set: Survey     Histogram...              Log commands: ☑   Attach active data set: ☑
cmdr                       Stem-and-leaf display...
Survey <- read            Boxplot...           y/data/psy3610/classsurvey.sav", use
attach(Survey)            Scatterplot...
                          Scatterplot matrix...
Survey2<-Survey           Bar graph...          ,]
Survey2                   Pie chart...
detach(Survey)
attach(Survey2)
RegModel <- lm(HAPPY~STRESS+FIT+SALARY, data=Survey2)
summary(RegModel)
|

Model:  RegModel                                                    Submit
```

Scatterplot Matrix

Select variables (three or more)

```
MATH
NUMBER
MIDEAST
HAPPY
```

Least-squares line ☑

Smooth line ☑

Span for smooth   50

On Diagonal:

Density plots   ⦿

Histograms   ○

Boxplots   ○

Normal QQ plots   ○

Nothing (empty)   ○

Subset expression

`<all valid cases>`

Plot by groups

OK   Cancel   Help

Select the variables: HAPPY, STRESS, FIT, and SALARY. Select "Plot by groups" and select GENDER. The "Plot by groups" allows one to look for sub-populations in the data. That is, are the relationships between the pairs of variables different for different groups?
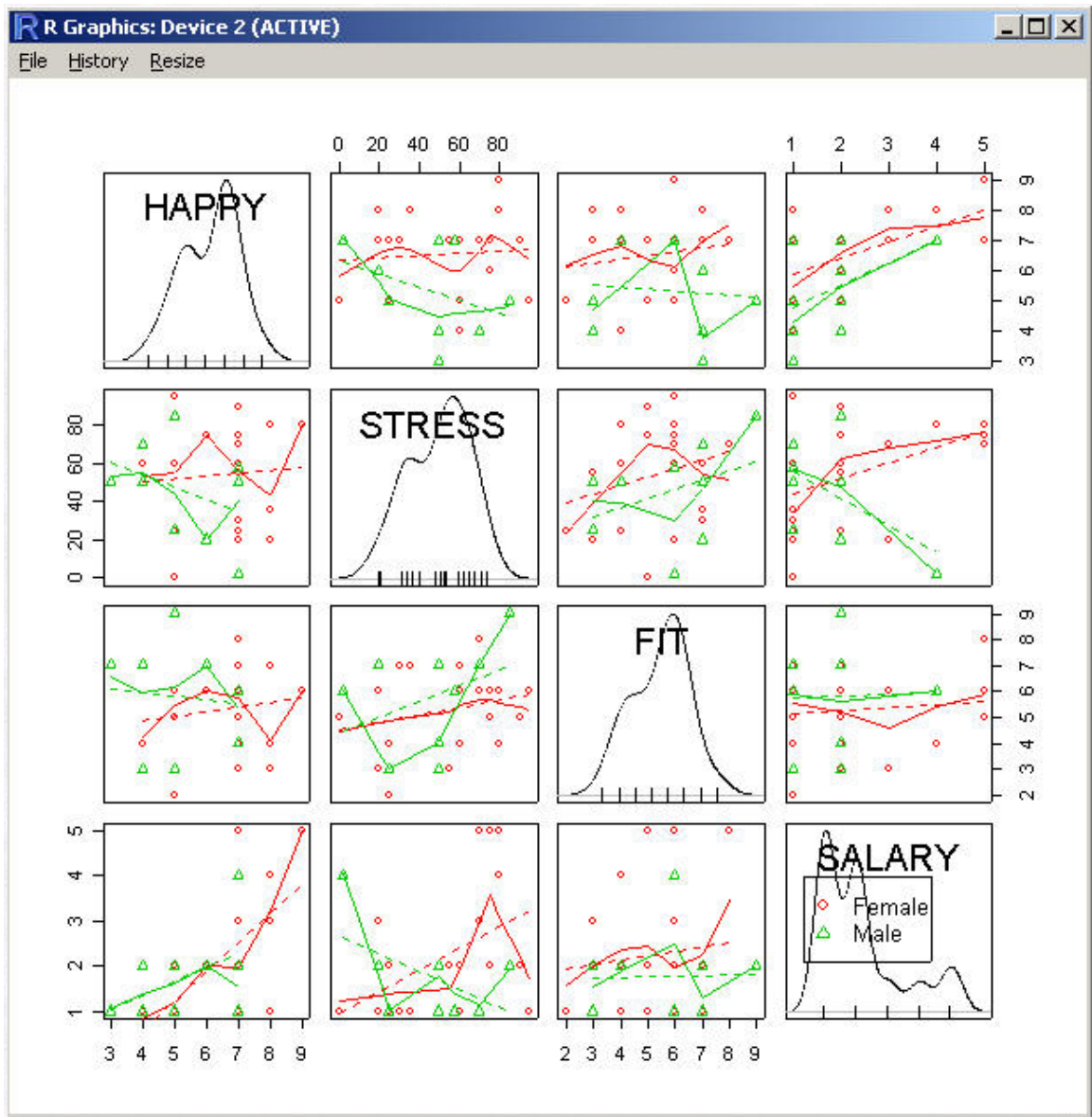
In the figure above, relationships between pairs of variables are seen at the intersection of the rows and columns for the 16 panels. For example, the relationship between STRESS and SALARY seem to be different for men and women. there is a positive relationship between STRESS and SALARY for women (increasing levels of stress are associated with increasing levels of salary), whereas, for men there is a negative relationship (increasing levels of salary are associated with decreasing levels of stress). However, for both men and women, increasing levels of SALARY are associated with increasing levels of HAPPY (positive relationship). Additionally, the relationship between HAPPY and STRESS seem to be different for men and women. For women, HAPPY does not seem to change as a function of STRESS. For men, as STRESS increases, HAPPY declines. On the basis of this new information, for our original model, we would want to add GENDER as a predictor, and add an interaction term between GENDER and STRESS. Since GENDER is a categorical predictor, we will want to choose a linear model that can accommodate continuous and categorical predictors. Under "Statistics", choose "Fit models - Linear model".:
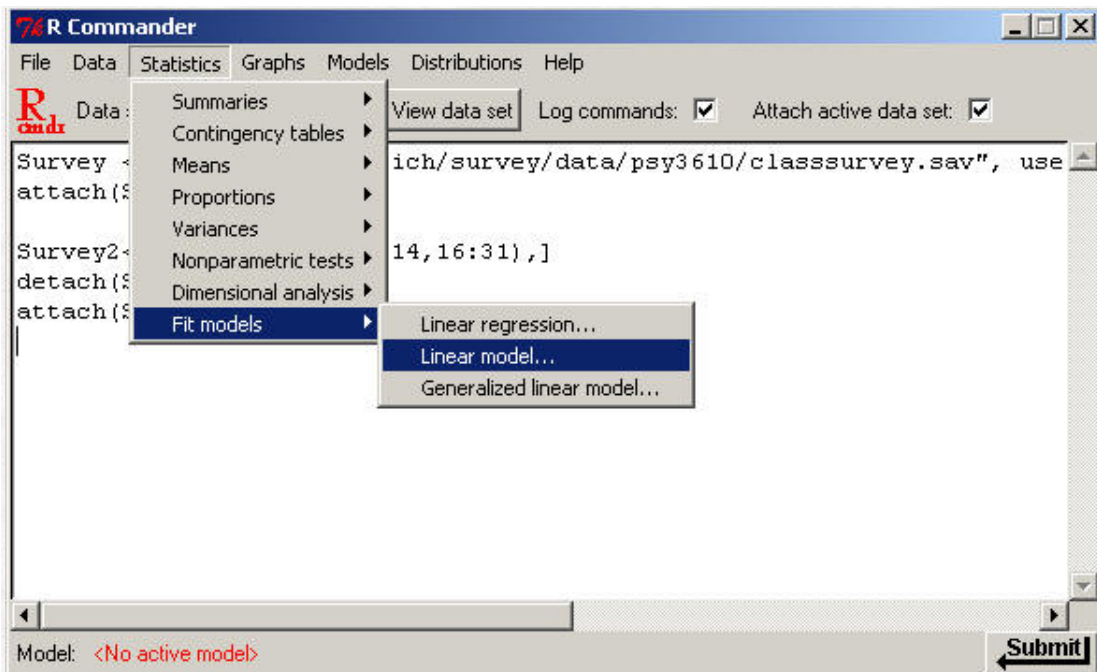
Label the model as "Model1". Type in the Model formulae as depicted below. Main effects, both continuous and categorical appear as HAPPY=STRESS+FIT+SALARY+GENDER. Interaction terms are constructed with the colon (GENDER:STRESS). So the full model is:
HAPPY=STRESS+FIT+SALARY+GENDER+GENDER:STRESS
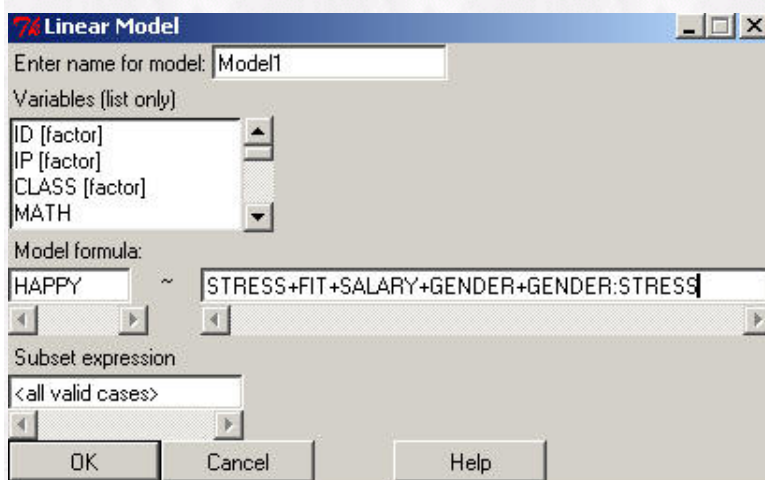
```
R Console                                                    _ □ X
File  Edit  Misc  Packages  Help

Call:
lm(formula = HAPPY ~ STRESS + FIT + SALARY + GENDER + GENDER:STRESS,
    data = Survey2)

Residuals:
     Min       1Q   Median        3Q      Max
-1.86975 -0.94173  0.08078   0.74620  2.27441

Coefficients:
                          Estimate Std. Error t value Pr(>|t|)
(Intercept)               5.510016   0.901103   6.115 3.08e-06 ***
STRESS                   -0.012103   0.011476  -1.055  0.30255
FIT                       0.056282   0.142417   0.395  0.69635
SALARY                    0.621717   0.197618   3.146  0.00452 **
GENDER[T.Male  ]         -1.106749   1.108870  -0.998  0.32862
STRESS:GENDER[T.Male  ]   0.001118   0.021464   0.052  0.95889
---
Signif. codes:  0 `***' 0.001 `**' 0.01 `*' 0.05 `.' 0.1 ` ' 1

Residual standard error: 1.204 on 23 degrees of freedom
Multiple R-Squared: 0.4455,     Adjusted R-squared: 0.325
F-statistic: 3.696 on 5 and 23 DF,  p-value: 0.01335

>
```

Since we have a categorical predictor in the model, we might want to display the output as an ANOVA table rather as Regression output. Click "Models - ANOVA table":

```
R Commander                                                  _ □ X
File  Data  Statistics  Graphs  Models  Distributions  Help

R      Data set: Survey2   Edit d   Select active model...        Attach active data set: ☑
cmdr                                 Summarize model
Survey <- read.spss(                 ANOVA table              0/classsurvey.sav", use
attach(Survey)                       Variance-inflation factors
                                     Basic diagnostic plots
Survey2<-Survey[c(1:                 Component+residual plots
detach(Survey)                       Added-variable plots
attach(Survey2)                      Influence plot
                                     Add observation statistics to data...
Model1 <- lm(HAPPY ~                                           ENDER:STRESS, data=Surv
summary(Model1)

Model:  Model1                                                        Submit
```

```
R Console                                                    _ | □ | X
File  Edit  Misc  Packages  Help

R-cmdr> Anova(Model1)
Anova Table (Type II tests)

Response: HAPPY
              Sum Sq Df F value   Pr(>F)
STRESS         2.282  1  1.5737 0.222271
FIT            0.226  1  0.1562 0.696346
SALARY        14.350  1  9.8977 0.004525 **
GENDER         6.396  1  4.4118 0.046856 *
STRESS:GENDER  0.004  1  0.0027 0.958893
Residuals     33.346 23
---
Signif. codes:  0 `***' 0.001 `**' 0.01 `*' 0.05 `.' 0.1 ` ' 1
>
```

In Type II tests, the order of entry of the predictors is important. After accounting for STRESS and FIT, SALARY is a significant predictor of HAPPY. After accounting for STRESS, FIT, and SALARY, GENDER is a significant predictor of HAPPY. After accounting for all four predictors, the interaction between GENDER and STRESS is not statistically significant.

Next Time

We will continue our exploration of the R commander window system in our third and final part in this series.

References

Dalgaard, Peter (2002). *Introductory Statistics with R*. Springer: New York.

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

Network Connection

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

Does the Internet Work?

The "good" news is that the browser wars are over (see last month's column). The bad news is that the Internet still doesn't work. Well, it may work if you exclusively use Microsoft's Internet Explorer on a Microsoft Windows PC, but if you want to vary at all from that path, you do so at your own risk. For people like me whose primary platforms are Mac OS X and LINUX, it's a hit and miss Internet world out there.

Oh, most sites still work. Even Microsoft hasn't found a way to mess up HTML too badly. Online services which feature media or commercial transactions are increasingly broken in my Windows-less world and it's starting to bother me a bit. The whole idea of the World Wide Web was to make it work on any operating system and a variety of applications. Being forced to use a particular browser application on a particular OS platform is very anti-WWW and Internet unfriendly.

My complaint is not just normal everyday whining. This rift in the Web affects me daily here at UNT in Denton. For example, take the following statement on our computer-based training page: "SmartForce courses run best on Internet Explorer 5.x and above. They do not work with Netscape. They run on the Windows platform only ." That's three strikes for me and I'm out. No CBT for you, Mac user!

A Bloom of Browsers

Irony abounds. There are more HTML browsers around than ever (even at the start of this whole WWW business, there were only a handful). You've got Internet Explorer and Netscape as the most commonly used ones still. You've also got Mozilla and Konquerer, the open source alternatives and Safari and Opera, which are commercial products. And if you still live in a command-line world, Lynx is still going strong.

Because of Apple's development of Safari for OS X, Microsoft has announced that it will no longer develop Internet Explorer for Mac OS. Still, Mac users can select between Safari, Netscape, Mozilla, and Opera (I like Opera, but not enough to actually pay for browser software).

The Root of the Problem

All of the browsers mentioned above display HTML content with apparent ease and consistency. The World Wide Web Consortium ensures that common standards are maintained for HTML. The problem comes when a web page or web-based service employs server-based software for dynamic web page generation.

When web developers want to interface web pages with databases or other underlying processes, they often turn to Microsoft's Active Server Pages (ASP) or Sun's Java Server

Pages (JSP). Both are programming environments which can generate content based upon the context of a web-based transaction, rather than relying on fixed HTML content. You'll notice ".asp" or ".jsp" as a file extension on some URLs and that will be a clue that such facilities are being employed. Many Internet commerce sites use such technology.

My experience is that some .asp and .jsp pages work fine, but others yield partial or no content as their result. .asp pages are more likely to fail on a non-IE, Mac platform for me than .jsp. This is more likely since ASP pages can only be served from Microsoft's IIS server and are only natively supported by Internet Explorer. The bottom line, though, is that programmers are probably not very rigorous in in testing their applications. They test only on what's available to them and most often it's Microsoft on Microsoft.

A 90 Percent Solution?

Lately, I've been tempted to swear off the Internet. No more Amazon, no more Expedia, no more online banking. The only problem is that it is SO convenient. When you have to jump through hoops to get things to work, the convenience stops. I ran across a .jsp roadblock recently with a site called **points.com**. It wouldn't work through my personal Internet firewall. I even tried using a dialup connection at one point only to be told that the service was unavailable at that time. I can only hope that such poor service conditions take care of themselves naturally via lack of participation on the part of customers.

If we want the Web to work, without conforming ourselves to big brother Bill's image, we as web consumers will need to be vocal about our displeasure with non-functional web pages. I find that a note to a page's contact E-mail address along the lines of "why doesn't your Web site work with my Mac browser?" doesn't always yield a useful response, but at least provides a bit of personal satisfaction. Maybe, if enough people do the same, the message will get through.

This just in:

According to Slashdot [http://slashdot.org/articles/03/07/15/1736223.shtml?tid=126&tid=154&tid=95], it appears that while Mozilla is not dead, AOL has just cut it loose and is no longer funding the development team. Irony abounds...

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

Network **C**omputing **S**ervices

Towards the end of May, Network Computing Services' (NCS) Web address moved. This coincided with their name change (they were formerly known as CampusWide Networks). Information and services offered by the group are available at http://ncs.unt.edu Site highlights include:

- HP/Compaq Server Inventory and Warranty Information (NDS Login Required)

- Iatro (Ya-tro) virus gateway statistics

- GroupWise Support Pages

- Group Email Guidelines

- GroupWise Tips

NCS asks you to update your links to their new site as some pages have relocated during the move. Old bookmarked links that point to their former Website will redirect you to their new home page for now.

WWW@UNT.EDU

In a Foreign Land and Loving it!

By **Misty Wells**, UNT Central Web Support

I'm on foreign soil and I love it.

You can refer to me as some may say, a foreigner. I come from a working world a thousand miles away (figuratively speaking). A world that looks different, talks different, and acts different. A world where you sometimes feel suffocated. A world where opportunities and skills can sometimes be suppressed. This world, as most people know it, is Corporate America.

Since leaving the private industry sector and joining the public industry sector I have experienced a more enjoyable atmosphere and have been introduced to great innovations that are about to emerge on the campus of University of North Texas (UNT). Being a part of UNT's Computing *and* Information Technology (CITC) department and the Central Web Support team presents a challenge as well as great opportunity. CITC has given me not only the chance to contribute my current skills, but also the possibility to take on advanced technology and detailed projects that will be of great benefit to the students, faculty, and staff of UNT.

PeopleSoft Enterprise Portal

A portion of these new developments and projects is the PeopleSoft Enterprise Portal. The portal will be a secured intranet for all UNT community members. It is a single entry of access to PeopleSoft and non-PeopleSoft applications tailored to the individual user's role. Furthermore, the portal platform provides the infrastructure required to deploy enterprise-wide access to Internet-based applications, knowledge management suites, collaborative services, and marketplace sites through a common Internet browser. The portal will give faculty and staff the advantage of using PeopleSoft applications specific to their role, the capability to communicate with students when necessary, the ability to access personal information, as well as a way to perform University business and check e-mail from any computer. For students, the portal will function as an integrated Web site to check their EagleMail online, in addition to interacting with their classes, professors, and friends. The student will also be able to use online tools for class research or planning, receive campus club and event information, and conduct business with the University. Both the faculty and staff will be able to integrate external web information into their customized portal. (See below for a sample of what's to come)

Faced with the challenge of bringing the portal to a reality, this is and will continue to be a huge learning curve for me, however it's a learning curve that I have been eagerly awaiting. With the creativity, commitment, and energy possessed by others working on this project, I enthusiastically look forward to the great things that the portal will bring to UNT.

I am glad to say that I have finally come to a land of *opportunity*.

Portal Features

Short Courses

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

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

Customized Short Courses

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

Especially for Faculty and Staff Members

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

GroupWise Training

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

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

Center for Distributed Learning

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

Technical Training

Technical Training for campus network managers is available, from time to time, through the [Campus-Wide Networks](#) division of the Computing Center.

Check the CWN site to see if and when they are offering any training.

UNT Mini-Courses

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

Alternate Forms of Training

Many of the General Access Labs around campus have tutorials installed on their computers. For example, the College of Education recently acquired some Macromedia Tutorials for Dreamweaver 4.0, Flash 5.0 and Fireworks 4.0.

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

IRC News

Minutes provided by Sue Ellen Richey, Recording Secretary

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

Tuesday, June 17, 2003

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

Lou Ann Bradley moved for approval of the minutes of the May 20, 2003 meeting; the motion was seconded and the minutes were approved as distributed.

The Chair reported that there has not been an IR Steering Committee meeting since the last IRC meeting.

Distributed Computing Support Management Team

Maurice Leatherbury reported for the Distributed Computing Support Management Team that they are still looking at desktop back-up solutions, and have received a revised quote from Connected.com, and although it is lower than the first quote, they are not ready to make a decision at this time. The Computing & Information Technology Center plans to conduct a study of departmental back-up needs prior to making a decision. Maurice also reported that the Students in the Tree project is complete and students can now log in anywhere on campus to a home directory that they have stored space on; they can actually get to their files from off campus by logging into a web site so they can transfer files back

and forth from the on-campus server to their home computers.

In response to a question about the discontinuation of the free and premium dial-up lines, Maurice stated that the Computing & IT Center is expecting responses from a Request for Proposal that would provide an internet access service to which UNT dial-up users could migrate. When there is an alternative to the current dial-up service, it will be publicized to the campus.

Instruction Planning Group

Jenny Jopling reported that the Instruction Planning Group has no current charge, so they have not been meeting. She reported that Classroom Support Services is working very well, so there are no problems or issues to deal with there. Committee members have expressed some interest in the use of PDAs in the classroom, and Robert Nimocks suggested that they look at the new tablet PCs as a classroom tool.

Communications Planning Group

Lou Ann Bradley reported for the Communications Planning Group that they have revised the Network Connections Policy, and distributed copies to the group. Lou Ann explained that this is a revision of a policy that was passed by the IRC in March of 2002. Since a considerable number of revisions have been made to the policy, she asked that it be considered at this meeting and presented for a vote at the July 15th meeting. Lou Ann stated that there have been some objections to the current policy; however, it is important for this policy to be followed since a device added to the network without anyone's knowledge has the potential of bringing down the entire network. Lou Ann stressed that the focus of the policy is simply to protect the network. Cengiz Capan stated that he believes College of Business faculty are beginning to understand the benefit of such a policy.

Maurice Leatherbury stated that wireless devices have been included in this policy, and the policy now allows people to bring their personal computers to campus and attach them to the wired campus network. End users just have to get permission from their Distributed Network Manager. Joe Adamo added that with the new wireless system being set up on campus, there will be a way to track wireless access points, which will be of great value when troubleshooting a problem with the network, and for locating security breaches.

EIS Planning Group

Joneel Harris reported for the EIS Planning Group that a series of campus presentations on the EIS project have been conducted, with 300 or more in attendance. They are looking at other ways of distributing information about the project to campus staff, faculty, and administrators, possibly creating some CDs for distribution. Joneel reported that a luncheon was held last week at which Sun Microsystems officially awarded UNT Center of Excellence status, entitling UNT to around $700,000 in discounts which have already been applied to the purchase of new equipment for the EIS project.

Joneel also reported that the EIS project continues to be within budget and on time. They are only one month away from the first piece of the purchasing module going into production, even though it will be "back office" only, at first. The first kind of activity that the campus will see will be in September when the Contributor Relations, and the Admissions modules will go into production. The Project team continues to be pleased with the Ciber consultants, and stated that without them the project would not be so far along.

Joneel stated that the portal implementation is being worked on, but a definite completion date for that has not yet been set; however, it will have to be completed sometime between September 30th and April 1st of 2004.

In response to a question from Cengiz Capan regarding when the mainframe would no longer be used, Joneel stated that the tentative date is September, 2004. Because there are some uses of the mainframe which will not be provided by PeopleSoft, they may not be able to find suitable alternatives by that date.

A software product called Resource 25 was purchased for facilities management because the PeopleSoft product does not address this need. Joneel remarked that it is doubtful that the Oracle bid for the takeover of PeopleSoft will be successful. She added that they are eager to see what the interface between WebCT and PeopleSoft will look like and noted that UNT is one of the first sites to test this interface.

Student Computing Planning Group

Elizabeth Hinkle-Turner reported for the Student Computing Planning Group that they have not met but that she has learned how to put the student computing survey on-line. The committee will communicate electronically for final review of the survey questions, which she plans to bring to the IRC for review in July.

Distance Learning Team

Mark Withers reported for the Distance Learning Team that they will meet Thursday, June 19th for a demonstration of the Created Realities Group distance education solutions. John Young of College of Education is using this client server application to provide IP audio conferencing for one of his courses. The software creates a 3-D virtual environment where the students and instructor can interact, and provides a number of interaction and collaboration tools. You can see this software at http://created-realities.com.

Jenny Jopling reported that her group will be in Vista training next week with the Academic Computing Services, along with representatives from the Health Science Center. They may choose a couple of courses in the Fall as pilot classes to use the new version. Maurice added that WebCT's Mark Wilcox was on campus last week to implement the new version 2.0 of Vista, which is now up and running.

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.

Staff Activities

Transitions

New employees:

Todd Atchison, Clerical Assistant, Computing Center Administration (part-time).

No longer working in the Computing Center:

Nina Burch, Clerical Assistant, Computing Center Administration (part-time).

Changes:

Alana Skoric, Programmer/Analyst, Network Computing Support - Alana's position has been moved on the organizational chart. She is no longer working on the EIS team but has is now on the Network Computing Services Team.

Minnie Hill, Programmer for UNT/HSC Fiscal Data Systems - is now Minnie *Bedrick* due to her recent marriage to Rudolph Bedrick.

Therman Watson, part-time CPU Operator - will now be known as *Watsunya Ferreira*.

Awards, Recognition, Publications

The following people were recognized for their years of service to UNT in the July 7, 2003 issue of *InHouse@unt*:

- **Richard Harris**, Associate Vice President for Computing & Chief Technology Officer - 40 years of service .

- **George Williams**, General Data Systems Team Leader - 30 years of service.

- **Rong (Ron) Wang,** UNT/HSC Payroll/Personnel Data Systems Programmer/Analyst - 15 years of service.

Congratulations to **Tracy Hansen,** EIS Computer Support, on the birth of her son Dane Eric Hansen on July 15.

The following people were recognized as Soaring Eagles in the July 2003 issue of the *Human Resources Newsletter*:

- **Shannon Peevey**, Central Web Support, was thanked for picking up extra job responsibilities during the absence of another staff member.

- **Scott Windham**, Communications Services, was praised for helping to set up a video conference between the Dallas campus and Austin.

Campus Computing News

Alternative Internet Service Providers

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

As was previously announced, UNT will cease providing dialup Internet service
effective August 31, 2003. We've asked various Internet Service Providers to give us
information and any special "deals" for our users who will be looking for alternative
providers, and although we were disappointed at the small number of respondents to our
request for information, we did garner some interest. The list of respondents as well as
quite a bit of additional information about alternatives can be found at the Help Desk
Web site:

 http://www.unt.edu/helpdesk/faq/Dialup_Going_Away/no_dialup_some_alternatives.htm

You'll see there that Verizon, the local telephone provider, didn't respond to our RFI but
you can check on availability and pricing of Digital Subscriber Lines at Verizon's Web
site:

 http://www22.verizon.com/ForHomeDSL/channels/dsl/forhomedsl.asp

If we do receive any additional information from Verizon, we'll post it on the Helpdesk
 site.

Almost Gone

By [Claudia Lynch](), Benchmarks Online Editor

Time is about up for Usenet Newsgroups and Dialup Network Services here at UNT. Academic Mainframe Services were terminated in May:

- **May 31, 2003** - Academic Mainframe Services were terminated for individual account holders. See "[Academic Mainframe Services to be Terminated]()" for further details.

- **August 31, 2003** - Usenet Newsgroup Services to be Discontinued. See "[This Just In . . .]()" for more information.

- **August 31, 2003** - Computing Center to Discontinue Dialup Network Services. Details are available in the April "[Campus Computing News]()" article.

Summer Hours

A shorter version for the rest of the summer. - Ed.

By Claudia Lynch, Benchmarks Online Editor

Following are the hours for Computing and Information Technology Center-managed facilities for the summer. Summer II is from July 7-August 8. The fall semester starts August 25.

The Helpdesk, ACS General Access Lab and Mainframe Print Services will maintain the following hours during this period.

- **Print Services** will maintain it's normal hours (6 a.m. - 2 a.m. M-F, 8 a.m. - Midnight Saturday).

- The **Helpdesk** will maintain its regular schedule: Monday-Thursday 8 a.m.,-Midnight; Friday 8 a.m. - 8 p.m.; Saturday 9 a.m. -5 p.m. The actual office (Information Sciences Building, Room 119) closes each weekday evening at 8 p.m., Saturday at 2 p.m. Phone/email support is available only during the remaining scheduled hours.

- The **ACS General Access Lab** (ISB 110) :

  July 7 - August 7

  Monday - Thursday - Open 9:00 am - 9:45 pm
  Friday - Open 9:00 am - 8:45 pm
  Saturday - Open 10:00 am - 8:45 pm
  Sunday - Open 1:00 pm - 9:45 pm

  August 8 (Friday) - Open 9:00 am - 4:45 pm
  August 9 (Saturday) - Open 10:00 am - 4:45 pm

  August 10 - **Closed**

  August Intersession, August 11 - 23

  Monday - Friday - Open 9:00 am - 4:45 pm
  Saturday, Sunday, **Closed**

  Monday August 25 - Resume regular Fall/Spring semester hours.

Hours for Other Campus Facilities

General Access Labs

- **WILLIS**:

24 hour schedule.

- **SLIS**:

  July 7 - August 8

   Monday - Thursday: 8 a.m. - 11 p.m.
   Friday - Saturday: 8 a.m. - 10 p.m.
   Sunday: Noon - 10 p.m.

   August 9 - 19 - **Closed**

- **MUSIC**:

  July 7 - August 7

   Monday - Thursday: 8 a.m. - 9 p.m.
   Friday: 8 a.m. - 5 p.m.
   Saturday: 10 a.m. - 5 p.m.
   Sunday: 1 - 9 p.m.

   August 8 - 24 - **Closed**

- **SCS**:

  July 7 - August 8

   Monday - Thursday: 8 a.m. - 10 p.m.
   Friday - Saturday: 8 a.m. - 5 p.m.
   Sunday: Noon - 10 p.m.

   August 9-24 - **Closed**

- **SOVA**:

  July 7 - August 6

   Monday - Thursday: 8 a.m. - 10 p.m.
   Friday: 8 a.m. - 5 p.m.
   Saturday: 9 a.m. - 5 p.m.
   Sunday: Noon - 10 p.m.

   August 7 - 24 - **Closed**

- **COE**:

  July 7 - August 8

   Monday - Thursday: 7 a.m. - Midnight
   Friday: 7 a.m. - 6 p.m.
   Saturday: Noon - 8 p.m. Sunday: **Closed**

  Early closings: August 8, 29 (close at 6 p.m.)

  Closed: August 30 - September 1.

- **COBA**:

  July 7 - August 7

  Monday - Thursday: 8 a.m. - Midnight
  Friday - Saturday: 8 a.m. - 8 p.m.
  Sunday: Noon - Midnight   **August 8**: 8 a.m. - 4 p.m.

  Closed: August 9-22

- **CAS**:

  GAB 330

  July 7 - August 8

  Monday - Thursday: 8 a.m. - Midnight
  Friday: 8 a.m. - 5 p.m.
  Saturday: Noon - 8 p.m.
  Sunday: Noon - Midnight

  August 9 - 24 - **Closed**

  GAB 550

  July 7 - August 8

  Monday - Thursday: 8 a.m. - 5 p.m.
  Friday: 8 a.m. - 5 p.m.
  Saturday: **Closed**
  Sunday: **Closed**

  August 9 - 24 - **Closed**

  Terrill Hall 220

  July 7 - August 8

  Monday - Thursday: 8 a.m. - 8 p.m.
  Friday: 8 a.m. - 5 p.m.
  Saturday: **Closed**
  Sunday: **Closed**

  August 9 - 24 - **Closed**

  Wooten Hall 120

  July 7 - August 8

  Monday - Thursday: 8 a.m. - 10 p.m.
  Friday: 8 a.m. - 5 p.m.
  Saturday: **Closed**
  Sunday: **Closed**

August 9 - 24 - **Closed**

- **System Center Dallas (SCDGAL)**

  July 7 - August 8

  Monday - Thursday: 8:30 a.m. - 10 p.m.
  Friday: 8:30 a.m. - 6 p.m.
  Saturday: 9 a.m. - 5 p.m.
  Sunday: **Closed**

"Normal" hours for all of the labs can also be found at the General Access Lab Website.

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Advance Fee Fraud Alert

By Charlotte Russell, Information Security Coordinator

Recently, a significant number of scam E-mail solicitations have been sent to UNT E-mail accounts. They are often referred to as the "Nigerian Letter" or "419" Fraud. The E-mail solicitation schemes are of the same type that have flooded the United States and other countries, and are believed to be sent from many different sources. The solicitations vary in content; however, the intent (to defraud) is the same. The U.S. Secret Service is investigating these schemes.

The E-mail solicitations urgently request your partnership in an investment opportunity that will transfer millions of dollars through your bank account into an overseas bank account. There is a promise to compensate or reimburse you for any incurred expenses (or advanced fees that you have paid) if you assist with the transfers. There may also be a request to keep all communications with the sender of the E-mail in strict confidence (secret) and there may be an invitation to travel overseas.

The sender of the message generally claims to be a director, chairman, officer or representative of a bank, a government agency, a foreign ministry, or some other type of organization in a foreign country. In some cases the sender claims to be the spouse, relative or acquaintance of a high ranking official. Your bank account information and other information (i.e. E-mail address, fax number, and/or telephone number) is also requested.

If you receive E-mail (or other type of solicitation) with this description, please do not believe the promise of monetary compensation and do not provide any information to the sender. Always guard your personal and bank account information. Delete the message or use bulk E-mail filtering rules (if you use GroupWise - instructions can be found at http://ncs.unt.edu/rules/spam_rule.html).

If you know someone who has been victimized by one of these schemes, encourage that person to contact the U.S. Secret Service as soon as possible.

How Does "Intellectual Property" Hamper Technology?

By Shannon Peevey, UNT Central Web Support

As the Free Software/Open Source movement is gaining momentum, many companies are struggling to comprehend this phenomenon. They wonder how it is possible for a company to either make money "doing 'Open Source'", or how they can protect their investments from a seemingly endless sea of developers who seem to give away their time for free. In response, the Free Software/Open Source movement is studying the laws that affect their products, and are trying to understand how to use them to protect the rights of the users. As the enmity between the movements seems to deepen, some companies are trying to attack the Open Source/Free Software movement, and it's products, by declaring a breach of "intellectual property". They are saying that code has been illegally transferred from their products into free software products, which is a breach of their rights and their "intellectual property".

What *is* "intellectual property"? How does "intellectual property" effect software development, and/or the products that are integrated into a companies product? These questions will be answered by looking at, first, a description of "intellectual property" and the laws that it encompasses, second, how these laws effect Free Software/Open Source software development, and third, the copyright laws and licenses that have been created to protect users rights.

But first...

it is important to understand the term "intellectual property". According to Black's Law Dictionary, intellectual property is "A category of intangible rights protecting commercially valuable products of the human intellect. The category comprises primarily trademark, copyright, and patent rights...". In other words, what is often called "intellectual property" is, in fact, a group of laws, that are very dissimilar, namely, laws pertaining to "trade secrets", patents, and copyright.

Trade secrets "consist of... anything that makes an individual company unique and that would have value to a competitor." (Miller 302) Trade secrets have not been used extensively by companies to protect their products. A possible reason for this is the fact that there are currently no laws that are specifically geared towards "trade secrets". They are currently protected at the state level by Common Law, which is set at the state, and not the federal, level. Therefore, trade secrets will be protected differently depending on state, and are difficult to defend consistently throughout the United States of America.

A patent "is a grant from the government that gives an inventor the exclusive right to make use, and sell an invention for a period of twenty years from the date of filing the application for a patent." (Miller 297) These have become

very popular over the last twenty years, as companies try to patent every new technology so that they may beat out competitors. As patents give the inventor exclusive rights to their patent, companies are able to sell, license, or shelve, a technology in any way they see fit. Patents can be a very important part of any "intellectual property" portfolio, and are currently the most useful for litigation.

Copyrights are "an intangible property right granted by federal statute to the author or originator of certain literary or artistic productions." (Miller 298) Copyrights are very easy to obtain, and are the most useful laws in protecting software from illegal usage. By holding the copyright of a product, it is possible to, not only protect yourself legally, but to also create a licensing scheme from which a company may generate income. Though many things may be copyrighted by simply publishing the work with the appropriate wording set forth by the Copyright Law and the U. S. Copyright Office, it is also possible to register your copyright with the U. S. Copyright Office, which affords you some advantages over simply securing a copyright. (U. S. Copyright Office)

Second...

Many assume that all Free Software/Open Source software is released into the public domain, but, in fact, this is not true at all. Most software that uses a Free Software/Open Source license is, in fact, held legally by the copyright holder. Therefore, it is important for developers to understand the laws covered by "intellectual property", and the impact that these laws have on Free Software/Open Source software.

Patents are, from a free software point-of-view, currently the most dangerous tool from the "intellectual property" portfolio. They are used to keep technological advances from flowing to possible competitors, and allow a company to have complete control over a technology for twenty years. One example of patents impacting the use of technology has to do with the LZW compression format that is used to create GIFs, an image format that is popular in web development. "Unisys and IBM both applied for patents in 1983" and have had exclusive rights to this technology until July 2004. (Free Software Foundation GIF) They have used this advantage to generate income through a licensing scheme that allows for free use of this format for non-commercial usage, but requires a charge for any software that includes this technology and which is for sale. Therefore, many free software projects have had to use other image formats exclusively, in order to avoid the possible legal entanglement. Though GIFs are an important component of web development and the advances associated with it they have had limited success, and are now being replaced by other formats that are available under a true Free Software/Open Source license.

Trade secrets, though not used extensively in litigation for protection of "intellectual property" rights, could nonetheless become the most dangerous weapon against the free flow of technological information. As previously mentioned, there is no formal body of law that is directly related to trade secrets, and, therefore, there is no consistency with which trade secrets are protected or restricted. For instance, it is currently possible to hold a "trade secret" indefinitely, (much longer than even a copyright), if the person holding the "trade secret" can prove the importance of that secret to their business.

Therefore, if a company can prove this assumption, they could conceivably hold a monopoly on that technology forever. This has not happened yet, but just consider the implications of such an action over something as important as HTTP, the protocol of the world wide web. With this in mind, it is important to realize that trade secrets can be extremely dangerous to free and open software.

Copyright, though used as a hindrance to user rights in some cases, is also the single most useful element of "intellectual property" with regard to the spread and dissemination of technological ideas. Copyright can be used to protect any work created by an individual or a company, and gives them certain rights with respect to the management of those copyrights. Companies, if they so choose, may make the copyright of the product exclusive, by means of the wording of the license that is attached to the copyrighted work. This type of copyright does nothing to advance technology. But, some people, like the Free Software Foundation, have discovered a way to turn the copyright law around, so that it protects the rights of end-users. They are able to do this, because the copyright law gives the "exclusive rights to do and to authorize any of the following:

1. to reproduce the copyrighted work in copies or phonorecords;

2. to prepare derivative works based upon the copyrighted work;

3. to distribute copies or phonorecords of the copyrighted work to the public by sale or other transfer of ownership..." (U. S. Copyright Office 16)

Therefore, these people, such as the Free Software Foundation, have created licenses under which you may license your copyrighted work in such a way that no end-user will have less rights than you do. Effectively stopping any hindrance of access to technological innovation.

Finally...

Free Software/Open Source has chosen to use the copyright laws to protect their rights, as well as, the rights of all end-users. By creating licenses that are both liberal, in rights that are passed to the end-user for use, and restrictive, in program usage and rights that the end-user may take away, the Free Software/Open Source movement has allowed itself to perpetuate in a safe and legal manner.

The best example of this type of license is the GNU General Public License, which is designed to "guarantee your freedom to share and change free software--to make sure the software is free for all its users". (Free Software Foundation Preamble) This license was designed in response to companies that were taking code created by the GNU Project, integrating them into their own products, and then asking the Free Software Foundation to stop distributing the free version of the software. (Li-Cheng) In a stroke of genius, the Free Software Foundation began to study copyright law and found a way in which they could use the existing laws to protect the rights of the end-users and remove any possibility of this techno-leveraging from happening again. Hence, the GNU General Public License, also known as "copyleft", was born.

Another license that is available to the Free Software/Open Source community is the BSD License. This license was created by the University of California, Berkeley, and is a much more liberal license than the GNU General Public

License. It allows BSD Licensed products to be integrated into non-free software, and sold. (Wikipedia) It also allows the BSD Licensed software to be bundled with multiple licenses. For example, the BSD License and a Microsoft license. The fear that many free software advocates have, is that the BSD License does not protect a product from ever being removed from the free soft ware community. It, therefore, is not considered to be as protective as the GNU General Public License.

In Conclusion

As Free Software/Open Source becomes "main stream", it is important for its developers to understand the laws that are used to protect software development and distribution. They do this by first, understanding the umbrella term "intellectual property", and the laws that are held under its canopy. Second, developers must understand the impact that these laws have on Free Software/Open Source software, and finally, they must understand the copyright laws, and licenses, under which they are able protect the software that they have developed.

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"...and 847 e-mails asking me to support anti-spam legislation!"

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