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Trends in Instructional Technology & Theory • SPSS Text Analysis for Surveys • Meetingmaker: NYU’s Calendaring Tool
Welcome to the Spring/Summer 2005 Connect!

This year marks the 10th anniversary of Connect: Information Technology at NYU. Over the years, through Connect and its predecessor magazines, we’ve had the pleasure of sharing a broad array of innovations with our readership. Technology seems to be evolving more rapidly than ever these days. This issue is a perfect illustration, with articles featuring recent advances in digital archiving, instructional technology, the NYURoam wireless network, webcasting, the NYUHome web portal, statistics resources, and interactive technologies. It also offers the latest information on how to make the most of your NYU e-mail account and manage your NYU calendar, and details about two exciting IT events this spring: Computer & Network Security Awareness Month and the Technology Open House. The common thread uniting all of these projects and events is that they have been designed to meet and anticipate the technology needs of you, the NYU community. If you know of other exciting IT projects that we can help share with NYU, I encourage you to contact us at its.connect@nyu.edu. I hope you enjoy this issue of Connect!

- Kate Monahan

About Connect

Connect: Information Technology at NYU is edited and published by Information Technology Services (ITS). Its scope includes information about computing, networking, and telecommunications across NYU’s various schools, departments, and administrative units, as well as developments in information technology outside the University.

Print copies of Connect are available at the ITS Faculty Technology Center, the ITS computer labs, the ITS Client Services Center, the NYU Information Center, and most graduate school offices. Copies are mailed to full-time University faculty, staff, administrators, and researchers, based on mailing lists administered by the Human Resources Division. Current and past issues of Connect are also available on the Web at http://www.nyu.edu/its/pubs/connect/.

If you are a full-time faculty member and do not receive a copy, please notify your dean’s office; full-time staff should notify their human resources representative. If you are not among these groups but would like a free subscription, please send e-mail to its.connect@nyu.edu.

We welcome your comments about the articles in this issue, as well as suggestions for future issues. Contributions are invited for consideration by the editor.

Opinions expressed in the articles in this publication are those of the authors and not necessarily those of Information Technology Services or of New York University.

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### Computing in the Arts
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NYU Home version 5.0 is scheduled for release in spring 2005, sporting new capabilities and a fresh look in response to suggestions from the NYU community. The NYUHome team has received a great deal of input via the “Contact NYUHome” channel and, particularly influential for this release, from the Student Services Committee of the University Senate in March 2004. These suggestions included a variety of good ideas for design improvements, enhanced usability and accessibility of information, increased use of graphics, and better navigation tools.

Some of these suggestions were implemented in versions 4.5 and 4.6 of NYUHome—for example, single-sign-on to Albert and the option of having up to 20 channels available in the HOME tab. NYUHome version 5.0 goes even further, thanks to invaluable design work from the NYU department of Web Communications and the programming efforts of ITS eServices staff. For purposes of comparison, figure 1 shows version 4.6 and figure 2 provides a glimpse of version 5.0, as presently envisioned.

The basic structure of NYUHome remains the same, with groups of related channels organized into tabs, e.g., HOME, ACADEMICS, RESEARCH, and so on. But there are many differences, both above and below the surface. Immediately noticeable are design changes intended to make NYUHome more attractive, more modern, more compatible with different browsers and types of devices such as PDAs, and easier to use: new colors, button styles, repositioning of elements, and more. In addition, a new tab, NYU LIFE, has been created to hold channels (such as Ticket Central, Student Government, and Residence Guest Registration) that didn't fit well into existing tabs.

Improved site navigation and search capabilities are major goals of this release. The new Channels
option at the top of the page shows at a glance what channels are available, whether or not they are currently visible, and in which tab they can be found. The search capability, located for immediate use in the top bar of each page, makes it easier to find information within NYUHome, about NYUHome, and out on the Internet.

Behind the scenes, a major restructuring of the NYUHome software has occurred to support these and future enhancements. Most fundamentally, the multi-frame scheme used to format NYUHome pages has been replaced with a style sheet-based approach. This change has three major benefits: more responsive page updates, greater compatibility across web browsers, and the future potential for one-click access to customized design “themes,” allowing for even greater individual choice as to the “look and feel” of NYUHome. Selecting a different NYUHome style sheet will result in markedly different fonts, font sizes, images, and colors.

Keep an eye on NYUHome (http://home.nyu.edu) for version 5.0, coming soon, and be sure to let us know what you think!

Gary Chapman is Senior IT Architect and Co-Lead for ITS eServices.

Did You Know?

> Each month, more than 55,000 different people log into NYUHome. The total number of logins in December 2000 (version 1) was 308,416, about 10,000 per day; in December 2004 (version 4), four years later, there were 2,737,707 logins, nearly 90,000 per day!

> NYUHome offers more than 60 different channels to members of the NYU community, with their availability customized according to each individual’s role(s) at the University.

> NYUHome runs on two very powerful computer systems, storing information in parallel on two separate sets of disks located in two different buildings. This system was created to maximize service availability to the community.

> If you don’t see a channel, it may simply not be activated! You can turn channels on and off, and set a variety of e-mail features via the Preferences option at the top of the screen. In NYUHome version 5.0, the Channels option will provide even quicker access to channel activation.

Figure 2. The current vision for NYUHome v. 5.0, featuring a colorful new design, improved site navigation, and greater web browser compatibility.
Modern performers and scholars have long recognized that medieval plays were meant to be played and lyric poems were intended to be sung. Yet minstrels and various entertainers likewise sang medieval epics using instrumental accompaniment, recited and acted out verse romances, and performed fabliaux and other tales.

Public reading of stories to assembled audiences also became an important performance mode; private, silent reading, which is the norm today, was the exception in the Middle Ages. In short, medieval narratives were created to be performed. Their performability was, and remains, part of their fundamental character, affecting audience response in significant ways.

In order to illustrate these points, we have produced Performing Medieval Narrative Today: A Video Showcase (henceforth PMNT). PMNT is an online research database that provides scholars, teachers, students, and performers with digital videos of modern performances of medieval narratives. Evelyn Birge Vitz and Marilyn Lawrence, both of NYU Faculty of Arts and Science’s (FAS) Department of French, direct the site, which is managed by Jennifer Vinopal, Services Manager of NYU’s Studio for Digital Projects and Research. The Studio initially created and now hosts PMNT thanks to a gift by an anonymous donor, and continues to develop the site with support from NYU’s FAS Comparative Literature, English, and French Departments, and the Medieval and Renaissance Center. The idea for PMNT grew out of another project, a book of essays entitled Performing Medieval Narrative, edited by Vitz, Lawrence, and Nancy Freeman Regalado (also of the FAS French Department). The book demonstrates that medieval narratives were stories intended for performance, and shows how understanding their performance is essential for appreciating the narratives fully.

Figure 1. On the PMNT home page, visitors search for video clips using drop-down boxes. The boxes list descriptors for performances and for the medieval narratives performed.

1. For information on NYU’s Studio for Digital Projects and Research, a joint project of ITS and the NYU Libraries, see http://www.nyu.edu/studio/.

We initially considered creating a CD-ROM to accompany the book, but soon realized the vast potential of a website. Unlike a CD-ROM, a website can be altered, updated, and expanded as technology evolves and as the needs of its developers and visitors change. Moreover, a website reaches a global audience—infinitely broader than that of a CD-ROM—and supports real-time interaction with its growing online content.

While numerous relevant textual and audio resources exist online, as well as visual resources in the form of illustrative stills, there is currently no other website devoted to videos of performance of medieval narrative. Many recordings and websites concentrate on medieval music and drama, but scholars are only beginning to appreciate the importance of performances of medieval narrative. A unique online resource in a budding area of research, PMNT focuses exclusively on digital videos of the performance of narrative. Such videos are difficult to obtain: few are sold commercially and rare is the library collection that holds them.

PMNT uses the latest developments in online technology to enable scholars and performers from around the world to view clips of these videos. The clips feature a variety of actors, storytellers, singers, musicians, mimes, dancers, and puppeteers, among them professionals, teachers, and students—including many NYU undergraduates from Vitz’s course on “Acting Medieval Literature” and from her own independent studies. They perform scenes drawn from a range of medieval narrative genres, including epics, romances, lais, tales, fabliaux, and others. PMNT also represents some performances of narratives from analogous traditions (such as the Egyptian Hilali epic).

We have constructed PMNT as a pedagogical and scholarly database. Its purpose is to demonstrate how medieval stories can be brought to life in performance for modern audiences, and how teachers of medieval literature can use performance in the classroom. We aim as well to promote a better understanding of ways in which medieval narratives may have been performed for their original audiences. To assist students of varying levels (including middle- and high-school students, as well as undergraduates and graduate students) and scholars from other fields of specialty, essential metadata—information regarding the performance and the work performed—accompanies each clip. Visitors can also search for clips using individual metadata fields (such as Performance Setting, Author of Work, and Subject Keywords).

PMNT includes a bibliography pointing to relevant scholarship, a videography of commercially available videos, and tips for use of the website and performance in teaching. In the future we plan to add more video clips and other resources to the site, including further information on pedagogical uses of performance, and video interviews with performers, faculty, and students who work with performance.

**TECHNICAL CONSIDERATIONS**

Two primary goals drove technical decisions in creating the website: making online video available to viewers worldwide (potentially via slow Internet connections), and protecting the intellectual property of the performers and other content owners. Since each performer who appears on the PMNT site is a copyright holder, we did not want to risk having material downloaded and used in ways that might violate holders’ rights. We therefore encoded the video to use streaming technology (rather than download). Streaming presents the viewer with an ephemeral stream of bits of audio-visual data that disappear once played by the media player, thus preventing capture to the viewer’s computer.
Digital video files can be extremely large: in its raw form, a five-minute digital video file can take up one gigabyte or more of hard drive space. Because streaming relies on the continuous flow of video data through the viewer's Internet connection, streaming raw digital video files is impossible: even the fastest Internet connection cannot continuously deliver that amount of data. Thus, in addition to being encoded for streaming, the files had to be compressed in order to travel smoothly to the viewer's computer.

Visitors to PMNT access the Internet using a variety of connection speeds, from low-speed dial-up modems to high-speed Internet connections such as DSL or LANs. To accommodate this variety of connection speeds, we created one high- and one low-bandwidth version for each video clip: high-quality files to stream via cable modem/DSL or faster, and low-quality files for visitors with dial-up modems.

In addition, it was important for us to choose a video format that is easily streamed, compressed, and played on a media player that is simple to download, free of charge, and readily available for PC and Mac. There were several popular video formats that met our criteria: Windows Media, Real, and QuickTime. How to choose among them?

One consideration was that although the website is currently being realized and housed at NYU's Studio, from the start we planned for PMNT's interoperability and possible integration with other digital resources and services produced by NYU Libraries' Digital Library Team. We wanted PMNT's technical design, metadata, and video encoding to be commensurate with the Digital Library Team's standards in order to assure the ingest, maintenance, and migration of PMNT data over time.

Following the Digital Library Team's lead, we encode PMNT's video using the MPEG-4 standard—a non-proprietary, international standard that provides for relatively high-quality, low-bit rate encoding, and can be optimized for streaming. During the academic year 2003-04, while we were testing the video encoding and streaming for the project, QuickTime was the only widely-available player fully supporting the MPEG-4 format and the streaming protocol used (Real Time Streaming Protocol, or RTSP, via Darwin Streaming Server).

At the time, Real had discontinued its support of the MPEG-4 format and, while Windows Media Player could play our MPEG-4 files, it would not stream them. We thus decided to present the video files to the viewer embedded in a web page (instead of appearing in a pop-up media player window) that forces the viewer's system to use QuickTime rather than Real or Windows Media Player.

Recently, Real has re-introduced its support for the MPEG-4 standard, and we are considering allowing viewers to stream the files using Real in addition to QuickTime. As the project continues, we are closely watching the development of MPEG-4 as a standard and will follow its adoption and implementation by the three major media players.

As we develop both PMNT's scholarly content and our means of bringing that content to viewers, we continue to explore how ever-advancing technologies can serve humanities scholarship. A virtual and global stage, PMNT seeks to provide a worldwide audience with performances of medieval tales using the latest in modern technology.

To explore the Performing Medieval Narrative Today website, visit http://euterpe.bobst.nyu.edu/mednar/. We welcome your feedback; please send comments to: perf-med-narr@forums.nyu.edu.

Marilyn Lawrence is a Visiting Scholar in NYU's FAS Department of French, where she received her Ph.D. in 2001. Jennifer Vinopal is the Services Manager of the Studio for Digital Projects and Research, an NYU Digital Library Team Project Manager, and Bobst Library's Librarian for French and Italian Language and Literature.
All Roads Lead to NYURoam

By Carlo Cernivani
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Wireless: there are still plenty of them around, but the increasing popularity of wireless Internet access is starting to reduce some of the clutter, while making it easier than ever to connect. NYU introduced its wireless access network, NYURoam, during the Fall 2003 term. At the time, the service was truly in its infancy, in terms of both its availability and utilization. Luckily, things grow up quickly on Internet time. Since its inception, the service has expanded greatly, and now provides convenient access to NYU-NET (NYU's network) and Internet resources for thousands of NYU community members.

MORE! MORE! MORE!

NYURoam service is no longer viewed as simply a convenience. Wireless is fast becoming the preferred way to connect to the Internet, and NYURoam is rapidly approaching “utility” status; it is expected to be available and reliable all the time. And enthusiastic users of NYURoam want more! As the desire increases to freely roam the campus while staying connected, the need to expand coverage follows suit. Over the past 18 months, ITS has moved forward to address this growing demand.

The key component of the NYURoam network is the hardware that operates at the “edge” of the network. These devices, known as access points, provide coverage and connectivity to people who use NYURoam and serve as the bridge between wireless client data traffic and the campus’ wired network. In the early stages of the wireless network’s deployment, several dozen access points were installed in select locations. As of February 2005, there were approximately 400 access points, with more being activated on a regular basis as requests for service are received (see http://www.nyu.edu/its/wireless/locations.html for a current list of locations).

The increasing popularity of NYURoam is easy to see in two key areas: NetID logins to the network, and network traffic rates. The number of unique NetID logins per month grew steadily throughout the Fall 2004 semester, beginning with 2,207 in August and growing steadily to 3,418 in September, 3,889 in October, 4,146 in November and 4,381 in December. In total, some 6,116 people logged on via NYURoam wireless connections one or more times during the Fall term.

The expansion in usage can also be gauged by measuring bandwidth consumption (the amount of data being moved onto and off of the wireless infrastructure). Early in the Fall 2004 term, as NYURoam coverage continued to expand, utilization was at approximately 700-800 gigabytes worth of bandwidth per month and rising at a steady rate. In February 2005, by comparison, approximately 2.5 terabytes of data moved through the NYURoam router. For those of you who like numbers, that translates into approximately 2.75 trillion bytes of data!

The graph on the next page shows a bandwidth sampling of one access point deployed at the NYU School of Law. The data, graphed over a week’s time, show the daily peaks and valleys in demand. The darker line represents data transmitted from the access point, and the lighter line represents data received from wireless devices that were connected to that access point. You can see that, on several occasions in just this one week, the combined inbound and outbound traffic exceeded two megabits per second (Mbps).

A STUDENT-FOCUSED SERVICE

When planning the geographic locations of NYURoam’s many access points, students have been and will continue to be ITS’ primary consideration. All of the initial locations for coverage focused on areas where students tend to congregate in numbers and where they would most likely find wireless access useful. The Kimmel Center for University Life, for instance, was provided with wireless coverage from top to bottom; there are 52 access points distributed throughout the facility (more than any other building on campus)
provide coverage whether a client is in the food court, a meeting room, or any one of the many lounges located throughout the building.

The Bobst Library also boasts a significant NYURoam presence, with the majority of the building covered. Some of the University’s general purpose classrooms are also supported by NYURoam, including the 2nd and 3rd floor classrooms at 194 Mercer Street; the basement classrooms at 25 West 4th Street; and the new ground floor classroom at 19 West 4th Street. Service continues to expand, and coverage will soon be available in even more classroom settings. As faculty members begin to embrace wireless technology and find new ways to integrate network or Internet resources into course curricula, we will surely see more requests to deliver NYURoam services into the classroom.

**WHAT’S COMING**

The lynchpins enabling wireless software clients and hardware devices to interoperate properly are the IEEE standards. The technical specifications outlined by standards ensure that manufacturers produce products that will work properly in a “standards compliant” environment. When most of the access points that comprise the NYURoam service were deployed, they used what is known as the 802.11b standard. This radio interface is capable of providing 11 Mbps of bandwidth per access point. Since wireless networking is a shared medium, this means each access point would deliver 11 Mbps for all of the wireless clients associated with that particular access point. The subsequent ratification and availability of the 802.11g radio standard raised the available radio bandwidth provided by an access point to 54 Mbps. NYURoam is committed to providing the fastest, most reliable connections available, so we are actively upgrading over 250 installed access points to handle 802.11g wireless connections.

As part of the 802.11b standard, which was ratified years ago, a Wired Equivalent Protection (WEP) key was introduced as the encryption mechanism to be used by wireless clients. It was thought to be the answer to all security concerns until it was demonstrated that, under certain conditions, the WEP key could be “cracked.” NYU has implemented a variety of additional security features for NYURoam and does not rely on the basic 802.11b security standard to protect the data transmitted on the NYURoam network. Nonetheless, the flaws in 802.11b have led us to begin planning for the adoption of the new security standard: 802.11i. The 802.11i standard, originally called WiFi Protected Access (WPA) in its pre-standard form, is something NYURoam clients will be hearing more about in coming months. It will eventually become the preferred authentication and access method for NYURoam clients. The 802.11i standard introduces several new methodologies that increase the security of radio transmitted data.

Once all of NYURoam’s access points are upgraded to use 802.11g, we will introduce a new network that will join the current three-part network: “NYU-ROAM1,” “NYU-ROAM2,” and “NYU-ROAM3,” each of which currently supports different client/connection type combinations. The new network will simplify the process of configuring your computer to connect to NYURoam, and support the 802.11i standard, using the Advanced Encryption Standard (AES). AES is the next-generation cryptography algorithm designated for use by the U.S. government, which will replace the long-standing methods: Data Encryption Standard (DES) and Triple-DES (3DES).

As wireless technologies and speed requirements evolve, and vulnerabilities emerge, new communications standards are continually developed in the effort to maintain stability and reliability of wireless communication. Each new standard creates opportunities to enhance and diversify the services offered by NYURoam, and ITS will continue to test and evaluate these new possibilities as we strive to deliver to NYU the most secure, robust, and flexible wireless network possible.

Carlo Cernivani manages NYURoam and is Senior Project Manager for ITS Communications & Computing Services’ Communications Services.
It's that time of year again! This April, the ITS Technology Security Services Group and Computer Advocacy @ NYU are hosting the 5th annual Computer & Network Security Awareness Month. As new threats to the security of your computer and personal information continue to emerge, it's important to keep informed. This month of events is organized to showcase the latest computer security developments and provide the NYU community with the tools they need to help protect themselves.

Each Wednesday in April, a free security seminar will be held at the Kimmel Center from 1:00–2:00 pm (with the exception of the talk by Ed Skoudis, which will end at 2:30 pm). We will also host two special seminars by Apple Computer and Microsoft on Monday, April 11th and Monday, April 25th, respectively.

Check out the seminar descriptions below, and visit the Security Awareness Month website (http://www.nyu.edu/its/securityawareness/) for copies of our helpful security publications, links to useful security websites, and a full calendar of events—now featuring daily security tips and suggestions! Refreshments will be served at all of our seminars.

SEMINAR DESCRIPTIONS
To register for any of these seminars, please send your full name and the title(s) of the seminar(s) you wish to attend to: security-rsvp@nyu.edu. If some seminars have passed by the time you see this, you can still register for any remaining events.

Phishing: Don’t Let Them Reel You In!  
April 6th, Kimmel Center, Room 802  
1:00–2:00 pm  
Presented by Tracey Losco, ITS Technology Security Services  
This talk will focus on the phenomenon of “phishing” scams: how to avoid them, and what to do if you fall prey to one. We will discuss how rampant these exploits are, where they come from, what phishing sites look like and who hosts them, who is usually targeted for these attacks, why people fall prey to them, what can happen to you if you become a victim, and where to find more information.

Tips On How to Secure the Mac OS X Environment  
April 11th, Kimmel Center, Room 900  
1:00–2:00 pm  
Presented by Steve Hayman, National Consulting Engineer, Apple Computer  
Security considerations have never been more important when selecting a computer platform. Whether you are a home user with a broadband Internet connection, a professional with a mobile computer, or an IT manager with thousands of networked systems, you need to safeguard the confidentiality of your information and the integrity of your computer(s). With Mac OS X, Apple has implemented a security strategy that is central to the design of the operating system, ensuring that your Mac is safe and secure.

Topics of discussion will include:
- FileVault: How to secure your local home directory with AES 128 bit encryption
- KeyChains: Manage collections of passwords and certificates with a single password
- Non-privileged vs. privileged users: Understanding the difference, when to use each, and how to configure them
- The OS X firewall: How to set it up and open ports (and determine which ports to open)
- Software Update: How it works and how to use it
- Encrypted image disks: How to create them
- Single Sign On, Smart Cards, PAMs, and Offline Authentication

Why Me? Viruses, Worms, Script-Kiddies and More  
April 13th, Kimmel Center, Room 909  
1:00–2:00 pm  
Presented by Brian Smith-Sweeney, ITS Technology Security Services  
One of the questions most frequently asked of security professionals is “Why would anyone want to break

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1. http://www.nyu.edu/its/security/
into my computer?" This class will examine that question from the often-overlooked human perspective. What are viruses and worms, and how do they spread? Who are the people that write them? Why do crackers, script-kiddies, and other Internet criminals do what they do? Armed with this knowledge, we will explore some methods for avoiding common attacks.

The Evolution of Malware
April 20th, Kimmel Center, Room 900
1:00–2:30 pm
Presented by Ed Skoudis, founder and Senior Security Consultant with Intelguardians.

This presentation will discuss recent evolutionary trends in malicious code. In the past two years, we've seen a deluge of really nasty developments, letting the bad guys compromise our computers in very fundamental ways. Increasingly, they are using their evil creations to make money, with a wide range of business models to foist upon unwitting web surfers. To help you get a handle on the problem, this talk will analyze the different levels and most powerful capabilities of malware, with a special emphasis on defensive strategies and tools for thwarting the bad guys. We'll look at the latest user-mode and kernel-mode rootkits, as well as bots, worms, and other beasts.

Desktop Security for Students
April 25th, Kimmel Center, Room 900
1:00–2:00 pm
Presented by Joseph Craparotta, Account Technology Specialist, Microsoft Corporation

In this talk, we will discuss the state of the industry today: what threats are rampant; viruses, worms, and spyware in relation to Microsoft's operating system; and how to protect yourself in this environment.

Defending Against Spyware
April 27th, Kimmel Center, Room 400
1:00–2:00 pm
Presented by Phil Rodrigues, ITS Technology Security Services

This session will discuss spyware, which the Federal Trade Commission (FTC) defines as “software that aids in gathering information about a person or organization without their knowledge, and which may send such information to another entity without the consumer’s consent.” The session will provide answers to common questions, such as: What is spyware? Why is it bad? How can you tell if your computer has spyware installed on it? What can you do to protect your computer against spyware?

NOTE FOR ATTENDEES
The Kimmel Center is located at 60 Washington Square South; you will need to pre-register for each seminar (security-rsvp@nyu.edu) and bring your NYUCard when you attend. If you have any questions, please send e-mail to security@nyu.edu.

Tracey Losco is a Network Security Analyst in ITS Communications & Computing Services’ Technology Security Services.
An interesting question I faced when reviewing SPSS Text Analysis for Surveys was whether I was looking at the emergence of a hot new technology or at something everyone else had already seen. Language pattern recognition software has, after all, been around for a while.

This software processes text and enables the use of powerful computers and large databases to categorize textual data. Researchers in the Social Sciences often need this capacity when asking open-ended questions (rather than, for instance, multiple-choice questions) of large numbers of people. The use of open-ended questions is important to many studies, and researchers often want to include the answers to these questions in their findings in more than an anecdotal fashion. Categorizing textual responses with tools like SPSS Text Analysis allows researchers to include this data in their quantitative analyses.

Imagine a scenario in which a dot-com company asks me to conduct a client satisfaction survey. I distribute a survey to 12,000 of the company’s clients, asking multiple-choice questions such as “How long have you been a customer?” The clients answer by filling in the appropriate bubble: “Less than one year,” “Two to four years,” etc. In addition, my survey has several open-ended questions such as “What do you like or not like about our service?” that the clients respond to with a few sentences.

When the time comes to analyze the results of my survey, I can use my scanner software1 to read the multiple-choice answers into a dataset for quantitative analysis. I can then easily organize this data into tables, showing, for example, that most of the dot-com’s clients have used the company for less than a year.

But what do I do with the text I collected in response to the open-ended questions? By simply reading the written answers, I could probably get a general idea of what the clients are happy and unhappy with, but what I really want to know is if there are common themes to their answers. If I can find common themes, I can create tables using these themes as categorical variables and then include these answers in my report. The problem, then, is how to extract the themes in the first place.

The History of Text Analysis

In the old days, researchers had to manually evaluate surveys for themes, then quantify each response based on those themes. For example, in our sample scenario, if I established “friendly customer service” as a theme, I would have looked at each of the 12,000 responses, assigning “true” if the theme was discussed in some manner and “false” if it was not. I’d then repeat this laborious process for each theme I could identify.

For years, this was how text was converted to categorical variables for analysis, which explains why open-ended questions were not popular in large surveys. Even during the first two decades of university computing, the situation did not improve because memory was scarce and expensive, and computational linguistics had to use punched cards for input. As faster, more powerful computers and more versatile external media (e.g., floppy disks) developed, character data became easier to input, store, and manipulate. The text analysis programs that emerged were, however, still limited by small hard drives. They could merely parse single words and index

or categorize text by whether it contained a single word and synonyms to that word.

About ten years ago, as computer memory constraints were reduced, software was developed that could parse characters into words, count them, locate specific words and their synonyms and, with somewhat limited success, the opposite of a word. There were, however, obvious challenges that still had to be faced, such as how to deal with misspellings and verb conjugations. If only computers could think!

As gigabytes have lead to terabytes and massive amounts of text have been stored digitally (consider the Internet), language analysis has taken giant steps. Statistical, fuzzy analysis of language has evolved into software that does seem to be thinking, addressing issues like “more important” versus “less important” words, “negative” versus “positive” usage, constructs across languages, idioms, phrases, and complex patterns.

At Princeton University, WordNet® was developed by the Cognitive Science Laboratory under the direction of Professor George A. Miller (Principal Investigator). To quote their website, “WordNet is an online lexical reference system whose design is inspired by current psycholinguistic theories of human lexical memory. English nouns, verbs, adjectives, and adverbs are organized into synonym sets, each representing one underlying lexical concept. Different relations link the synonym sets.”

You'll be tested on that later, but essentially, linguists have been busy developing software that allows computers to look at terabyte collections of text and address previously mentioned challenges, such as misspellings. Large dictionaries, self-learning programs that extract concepts and link them into synonymous sets, and open source archives that index word relationships, such as WordNet, have been created. Norman Nie, co-founder of SPSS and a professor at Stanford and the University of Chicago, built upon research such as this to create SPSS Text Analysis, a product that calls upon a MySQL database, WordNet, LibTextCat3 (a classification library used for language guessing), and other software.

**SPSS Text Analysis in Action**

Now, let's walk through the text analysis of our fictitious scenario discussed earlier. First, I create a file with two variables: the ID of the respondent and the respondent's text answer to the question “What do you like or not like about our service?” I import this file (which can be in Excel, SPSS, or ODBC format) into SPSS Text Analysis and run an EXTRACT.

To quote the SPSS help, “...text responses must be run through an extractor engine before categorization can begin. Using powerful linguistic resources, the engine identifies relevant concepts in your data and extracts them. The result of this extraction is a set of terms, types, and patterns that you can then categorize manually or automatically using built-in classification techniques.”

The software's extractor uses its libraries on the responses to the question and, within a few minutes, determines three sets (lists) of words and concepts, which it calls “terms,” “types,” and “patterns.” The software creates the following list of types: “Positive,” “Negative,” “Locations,” “Names,” “Company Clients,” and “Products.” The software makes examination of the text very easy; I can open any type to see the phrases it includes. If I click on a type, all the responses with that type are separated out of the total responses and the suspected “Negative” text is highlighted. I am impressed, for example, to see that “so so slow” is typed as “Negative.”

The next step is to review the extracted sets and clean them up. For example, looking at the “Names” type, I see the names of staff but also “Victoria’s Secret.” Ha, ha... our dot-com had Victoria's Secret as a web client. So, I clean up the list by moving Victoria’s Secret to “Company Clients.” I also specify that any instances of “Victoria’s” + something should be considered synonyms. That way, if one usage of “Victoria’s” points to the type “Company Clients” and all usages of “Victoria’s” are synonyms, when I run EXTRACT again, all references to “Victoria’s” are correctly classified. As I clean, I periodically rerun EXTRACT.

SPSS Text Analysis relies on a set of dictionaries created and manipulated by WordNet and LibTextCat, but any refinements I make as I clean the data are saved in a project dictionary that takes precedence over the other dictionaries. If I wish, I can use this custom dictionary and the categories I've established on other survey sets, making future analyses run much faster.

When I am satisfied with the sets of extracted terms, types, and patterns, I move on to the last step of building categorical variables for these responses. I can build categories from any combination of the extracted terms, types, and patterns. For example, if I display the set of terms by frequency, “E-mail” and its synonyms are at the top of the list with 5,700 hits. Since I certainly want to use it as a categorical variable, I do so by dragging it to the “Create Categories” window. The dataset I am building now has a variable called “E-mail” with 5,700 “true” values associated to the 5,700 people who discussed e-mail in their responses. If I drag and drop “Negative” into a second category, I have a second variable pointing at negative text.

When I export this session, I have an SPSS dataset with three variables:

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WHAT EXACTLY IS INSTRUCTIONAL TECHNOLOGY?
Before I begin my examination of past, present, and future trends in instructional technology, we should clarify exactly what we’re talking about when we refer to instructional technology. Does it mean computers, the Internet, and software used for instruction and education? Does it include TV and documentaries, for example? Or are we focused on the human element, the resources deployed, the learner or instructor? Or is it all of the above?

Robert Reiser, professor of Instructional Systems at Florida State University, draws helpful distinctions in his 2001 article on the history of instructional design and technology: “Instructional Technology is the problem analysis, solution design, development, implementation, management, and evaluation of instructional processes and resources to improve learning and performance in education and at work.”¹ The distinction between the technological processes and the actual physical media is important. For Reiser, the “soft” technologies of analysis, design, development, and management are what make instructional technology interesting, much more so than the ephemeral, ever-evolving hardware and software tools that instructional technologists use in their craft.

INSTRUCTIONAL TECHNOLOGIES TIMELINE: 1900-2004
With this clarified definition, we can begin to survey the past, present, and future of instructional technology. The timeline in figure 1 (p. 14) shows key events, theoretical advances, media-technological innovations, and core issues in the growth of instructional technology since the beginning of the 1900’s.

Clearly visible during the 20th century is the growth in complexity from the early stereographs, through to radio, film, and TV, to personal computers, CAI (computer-aided instruction), and the Internet. Spurts in progress can be seen around the time of war, when military funding led to the testing of new instructional systems. Also evident is the shift between theoretical paradigms that accounts for the use of technologies in instruction as technological, cultural, and social needs evolve.

BROKEN PROMISES
The bottom row on the timeline reveals an interesting fact about the ongoing emergence of new media and technologies. In each case, theorists found themselves asking if this technology would change learning and classroom practice, and many over-optimistic claims were made about the efficacy of the technology. The promise of educational TV—which prompted the FCC to allocate extensive bands of the spectrum for use by schools in the 1960’s, and the Ford Foundation to finance the development of a closed circuit TV network for education and training—is but one example. Many would agree that educational TV failed to deliver on its early promise and occupies only a peripheral, underused role in most classrooms.

Similarly, in the early 1980’s Seymour Papert (a renowned pioneer in the field of educational technology), like many others, saw PCs as a catalyst for “deep radical change” in the classroom, and predicted that by 1990 there would be one PC per child.² These over-optimistic forecasts were not borne out due to the realities of budget limitations and ongoing concerns and uncertainties about the effects of computers on learning. Moreover, software tools and hardware performance that could make computers useful and user-friendly in the classroom did not begin to emerge until more recently. Similar experiences can be recounted with other technologies earlier in the century, where an

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initial enthusiasm about a particular form of media proved to be premature once attempts were made to incorporate the technology into the unforgiving realities of the classroom. Having looked back, we can now ask: is the World Wide Web, which seems to hold so much promise for educators and learners, destined for the same disappointment and obsolescence as the Magic Lantern, educational radio, and the standalone PC?

20TH CENTURY LEARNING THEORIES 101

Before considering this question, we can find another perspective on the past, present, and future trends in instructional technology by reviewing the most influential learning theories that helped form instructional technology over the last 100 years.

There are three principal families of theories about learning: behaviorism, cognitivism, and constructivism. Behaviorism emphasizes observable behavior, rather than inner mental experiences. From our environment, we learn certain behaviors while learning not to do others. Behaviorism is also thought of in terms of association building, and the “drill and practice” software often used in skill-building is an example of behavioristic instructional technology design. Behaviorism is sometimes critiqued as being too passive and mechanistic.

Cognitivism, on the other hand, emphasizes the importance of perception, learning, and thought as bases for understanding human behavior and learning. Rooted in information processing theory pioneered in the 1960s, cognitivism draws from the analogy between computers and minds, allowing for the possibility of computer programs that “think” alongside their human users. Cognitivistic instructional design is characterized by analytic breakdown of a topic or subject matter, and the transformation of the subject matter into a set of structured cognitive tasks. Cognitivistic frameworks can include discovery tasks, problem diagnosis, and troubleshooting; Papert’s LOGO-based learning tools are considered cognitivistic. In these frameworks, knowledge acquisition is seen as an active, learner-driven outcome, much more so than with behaviorism.

An even more active view of learning can be found in the theory of constructivism. In this philosophy, first described over 100 years ago, learning is seen as a process of knowledge construction where the learner is in charge of his or her own learning experience. Experience, combined with reflection and social interaction, allows the learner to build on prior knowledge and create their own understanding of ideas and concepts. An example of a constructivist learning environment online is a WebQuest, an inquiry-based activity where the information used by learners is drawn from the Web. WebQuests use information to solve problems or gain deeper insights, and to support learners’ thinking in terms of analysis, synthesis, and evaluation. In this way, meaningful mental models can be formed, and learners can select and integrate their own schemas in order to make sense of the world.

While behaviorism is characterized by a linear, stimulus-response approach to learning, cognitivism likens the mind of the learner to an elaborate information processing system. Constructivism, by contrast, puts the learner in charge of their own search for meaning.

The main point here is that when we survey the history of instructional media, we can see a mapping between these theories of learning.

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3. Timeline graphic created by the author, drawing from the Reiser article referenced in footnote 1.
and the use of different types of media. For example, behaviorism, which was at its height in the first half of the last century, was complemented by linear media such as radio, film, and TV. Cognitivism, which was at its height in the 1960’s to 1980’s, was complemented by a new generation of desktop and personal computing, which found its ultimate expression in artificial intelligence (AI) and AI tutoring systems research.

Although behavioristic in many ways, these cognitivist systems still represented a different paradigm from both behaviorism and constructivism. Constructivism in its current incarnation is complemented by media and technologies that offer learners multiple perspectives, formats, and options for sharing and expressing their ideas. Thus, the Web, having emerged in the mid-90’s, with its networked, interactive environments, accessible through portable and handheld devices, offers functionality that goes beyond behavioristic or cognitivistic worldviews, and recasts learning as a ubiquitous, experiential, self-driven activity.

**THE EUROPEAN VIEWPOINT**

Unique economic, geographic, social, technological, and intellectual structures in the US have consistently helped give rise to revolutions in the way media is used in learning. However, across the Atlantic, European Union (EU) research and technological development in instruction—often referred to as “E-learning”—have been following a blueprint that both draws from the US experience and integrates European culture and ambitions. The focus is on cultivating improved efficiency in learning and cost-effectiveness, while deploying instructional technologies that better address the needs of individuals, groups, and organizations.

The European effort is helpful for understanding the current status and future direction of instructional technology because it leaves less to chance than the entrepreneurially driven American environment, and follows instead a more programmatic approach.

Core concepts in the vision of the future of E-learning in Europe are:
1. Universal access to open, ubiquitous, experiential, and contextualized learning materials;
2. The combination of advanced cognitive science and knowledge-based approaches with new media, including virtual and augmented reality, virtual presence technologies, and simulations;
3. The ability to learn and seek training, independent of time, place, and pace as a fundamental affordance of instructional technology that needs to be further cultivated, especially from the EU’s social policy perspective.

With this sense of the theoretical background of instructional technology, and this broad vision of its future, let’s focus now on the present, and on some key trends in infrastructure, content development, and research in the field.

**A VISION OF THE FUTURE**

As more and more learning takes place online or with the support of Internet-based resources and tools, the “E” in E-learning is likely to be presumed and taken for granted. Fewer students are getting the traditional on-campus degree because of the increasing popularity of flexible online degrees. Therefore, those who want to experience “traditional” educational methods may increasingly be forced to pay a higher price.

There are also signs of increased diversification in the resources available to students. In the future, learners will likely be able to obtain degrees made up of courses and experiences from numerous providers. Moreover, mergers and partnerships of learning institutions, publishers, technology companies, and service providers and consultancies will lead to shake-ups in the ways educational institutions plan and deliver their courses. Private colleges will have to offer broader vocational options with major online components or go out of business. Many colleges, including NYU, already run successful partnerships with corporations to manage their training and education programs.

Likewise, I see the role of the professor and instructor continuing to diversify with the technology. The expectations placed on instructors regarding their digital skills have become more exacting and demanding, and the time required to respond to the steady flow of e-mail and the creation of new digital content has grown exponentially, placing increased performance pressure on faculty.
CURRENT TRENDS IN INFRASTRUCTURE

Trends in the growth of technology for instruction can be summarized as embedding, ubiquity, specialization, miniaturization, and mobility. In this context, embedding describes how the network is becoming increasingly integrated into our urban environment. For example, web-enabled devices will continue to drop in cost, while being built into existing conventional devices. Imagine an instructor accessing her Blackboard courses via the touch screen on her broadband-connected refrigerator over morning coffee, or answering e-mail from a public web kiosk on the street while attending a conference in Amsterdam.

Another trend is the increasing ubiquity and mobility offered by wirelessly connected devices. Personal devices like smartphones and PDAs, even iPods and personal media devices, offer non-stop access to digital content and, in many cases, real-time communication and media sharing. The already ubiquitous iPod may, in the near future, come with a wireless Internet connection that would allow for potentially vast sharing of content and greatly simplified podcasting (personal radio-like broadcasting).

Furthermore, continued miniaturization, specialization, and improvements in manufacturing processes will offer consumers lower costs with greater efficiency. The so-called “m-Learning paradigm”—mobile learning—will bring with it new types of content, smarter devices, and an ever-lower cost.

With the realization of these trends will come new “vertical” organizations of social and academic interests. The Scholar search tools in Google are an early example of this trend. Likewise, metropolitan regions, institutions, organizations, and schools will see a rise in “sub-networks,” that is, shared “synthetic” spaces that revolve around the ideas and communities of interest represented by, say, podcasting biology instructors, art-teaching videographers, and media-ethnographic historians.

These trends in infrastructure will require further advances in interoperability, that is, the ability of different digital platforms to communicate and exchange content. Emerging standards for accessing incommensurate digital resources include SOAP, UDDI, and XSLT. DLORN is one example of an open source, modular content repository currently being explored at NYU.

Related to this are concerns about metadata (information about digital resources that, among other things, helps search engines locate them). Metadata standards are notoriously technical and demanding, in a way that often discourages content producers from using them, rendering their content harder to find and archive. Tools for a more flexible ontology of metadata are beginning to emerge.

These types of new technologies will allow educational institutions to go beyond comparatively static learning management systems such as Blackboard. These emerging infrastructures are, however, useless without content, and trends in content development are characterized by the most interesting innovations.

CURRENT TRENDS IN INSTRUCTIONAL CONTENT

A stumbling block to the increasing diversification and ubiquity of instructional technologies has been the relative difficulty of content creation for people unaccustomed to working in a software interface. Content creation software has traditionally been the dominion of highly paid professionals working with complex, expensive software.

To date, the emphasis in web-based instructional technology has been on discoverability and use of content (e.g., Google), rather than on creation and collaborative discourse, despite many efforts to redress this imbalance. One emerging trend emphasizes bridging the “design gap” between the learner and the instructional system, so that non-experts can also create and share their resources within collaborative communities of interest. A new breed of rapid development E-learning software tools has been on the rise in the last year. These tools allow for faster, more exact, and lower cost prototyping of learning materials and content. Such tools include Macromedia Breeze, Articulate, Lersus, SNAP! Studio, Content Point, WebEx, and Mindflash.

Bridging the gap is not merely a question of designing user-friendly software, however. Increasingly,

cognitive science has been informing the design process, and techniques are being sought for incorporating constructivist, meaningful, experiential learning into instructional content in a more systematic way. A related trend, therefore, is the emergence of basic “pattern languages” for instructional content design, which draw from content-rich and engaging experiences such as those found in simulations or games. In this vein, we can expect to see new forms of “learning browser” software that are purpose-built for the learner according to their patterns in media usage, learning cognition, and behavior.

Another trend in content development is the shift away from large, centralized instructional material projects run by media conglomerates (although these will always exist in some form) towards more grassroots, community-driven instructional content development. Technologies such as rapid development environments, as well as blogs, wikis, and revamped “push” technologies based on RSS (technically “Rich Site Summary” but sometimes colloquially called “Really Simple Syndication”) put the individual and small collaborative group in a position of new power to develop compelling instructional materials without the overhead and complications that large media companies face.

EMERGING TRENDS IN RESEARCH

Behind the scenes, instructional technologists are exploring new lines of research, building the future infrastructures, content development tools, and theoretical frameworks which will define the field in the decades to come.

As previously mentioned, an increasing role is being played by the cognitive sciences in helping to build a foundation for web-based learning. As knowledge about learning processes and cognition evolves, so will its application to the field of instructional technology. Knowledge construction, the formation of mental models and conceptual structures, and their relationship to navigation and interface design will continue to be researched. Methodologies and techniques for evaluating the effectiveness of web-based learning will become essential as educational institutions need to justify and rationalize their expenditures.

Web-specific learning activities such as collaboration, communication, and gaming will be researched alongside new types of interaction that lead to more authentic tasks, an improved sense of social presence, metacognitive mapping, and insights into how learners manage complexity. Individual differences among learners (e.g., visual versus spatial; linear versus holistic) can now be accommodated very well by modern computers; however, we still lack the tools for determining and catering to individual differences in instructional content. New dimensions of individual differences will be researched with their specific interaction sets, leading to improved, more effective personalization for learners. Issues in policy, and social, economic, and philosophy will also be explored in an attempt to make sense of the broader cultural consequences of instructional technologies.

CONCLUSIONS

After a series of fits and starts in the 20th century, the current trends in instructional technology can be characterized by continued uptake of the technologies, increasingly ubiquitous access, diversification in content creation, infrastructure, and communities of use, and mobility in learning. The creation and sharing of learning experiences will become easier for non-experts, while large education-dependent organizations and institutions will experience almost constant shake-up as a result of the pressure to adapt to new technology. The role of cognitive science in informing design and research, as it applies to individuals as well as to collaborative groups, will grow in importance.

Our review of these trends brings us back to the concern about the lifespan of new technologies. With the historical perspective gained from previous technologies such as radio, film, and TV, we can see that the promise of new media can fade out as people realize its limitations. The question to ask, then, is: won’t the same disappointment occur with the web-based technologies reviewed in this article?

While it is true that this could happen, there are no signs thus far. Instructional technology survived the bursting of the Internet bubble intact, for example, and continues to grow. When we consider the learning theories discussed above—behaviorism, cognitivism, and constructivism—it’s evident that the Web offers a new set of affordances that are no longer one-way, passive transmissions of content, but rather, two-way, interactive environments that allow for learners to explore multiple perspectives, in multiple formats, in a way that suits them and puts them in charge of constructing their own learning experiences. Only time will tell if the Web can offer a truly effective constructivist learning environment, but at least for now, the future looks bright.

LINKS

- Instructional Technology Theory Database: [http://tip.psychology.org/](http://tip.psychology.org/)
- EDUCAUSE: [http://www.educause.edu/](http://www.educause.edu/)
- Podcasting: iPod Therefore iPodcast: [http://www.nyu.edu/its/ftc/ls/podcast.html](http://www.nyu.edu/its/ftc/ls/podcast.html)

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A Case Study in Webcasting

NYU TV & Media Services Support the Third Annual Clinton Foundation Forum

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Media support is now an integral part of planning a successful event at NYU. Since the opening of the Kimmel Center for University Life and the Skirball Center for the Performing Arts, NYU’s Department of TV & Media Services has provided turnkey, high-end media solutions for a number of live events in these spaces. This past year alone, NYU hosted such high profile speakers as John Kerry and Al Gore, and the end of the year saw the return of the annual William Jefferson Clinton Foundation Forum.

Events such as these engage a synergy of NYU Libraries resources: The NYU Television Center (TVC), Campus Media Special Events, Campus Cable, and NYU-TV. Together, under the umbrella of the Department of TV & Media Services, these operational units provide services in the form of video production and distribution of the event both on-campus and to the news media, as well as coordination of backstage media support for television and webcast viewing. The area that has seen the most growth in popularity is webcasting. In many instances, it has become a given that clients will wish to have their events seen not only by the NYU community, but by as many people as possible.

In recent years, the NYU Television Center served as the field video production group and would transmit the analog video/audio signal to NYU’s Information Technology Services (ITS), who supported the encoding and back-end server process.¹ Now, a recently installed infrastructure gives non-ITS entities, such as the TVC, the option to have local production control over the encoding stage. This alternative gives us the autonomy to create and issue media-streaming URLs ahead of time, thereby facilitating customer service support and affording our clients additional time to publicize their webcasts. The advanced issuance of URLs also improves testing, event web page creation, and cataloguing.

GETTING STARTED: THE HARDWARE AND SOFTWARE

The Clinton Foundation event marked the debut of the dedicated single-mode fiber optic infrastructure in place between the Kimmel Center and the Television Center. The traditional way of getting a signal over to the encoder was by modulation of the signal over the analog coaxial broadband cable network, and then demodulating the signal with a low-end RF tuner like a VCR. With the construction of the Kimmel Center, bi-directional fiber optic lines were installed from Kimmel’s master control to the TVC’s master control, located in the Pless Building. This connectivity allows for broadcast quality audio and video signal transmission that can be routed for distribution to any number of digital or analog networks.

¹ Information about streaming media services available through ITS is available at: http://www.nyu.edu/its/ftc/about/streaming_services_about.html.
Encouraged by these developments, the TVC set out to collaborate on a new workflow with ITS Academic Computing Services. Knowing the success of this venture would entail an investment in the latest equipment, we developed our ideas with help and support from ITS, particularly Ethan Ehrenberg, an Instructional Technology Specialist at the ITS Faculty Technology Center, and Jeff Bary, an ITS Senior Arts Technologist.

Based on our production experience, we knew that we needed a machine that could comfortably process and cache an eight hour, 256 Kbps streaming file, FTP to an archive server, and support the storage of large files locally. For these purposes, we acquired a current version of the Precision 670 workstation with dual RAID 400 GB SATA drives, a Xeon 3.20 GHz processor, and 4 GB of SDRAM memory, operating on the Windows XP platform. A webcast encoding machine is only as good as its audio and video capture cards, so we decided to forgo the multimedia PCI cards that came with the system, replacing them with higher quality processing devices. In the audio slot, we placed an Orban Optimod PC-1100 PCI card to handle the gamut of commercial codecs currently available that can otherwise result in a cacophony of sound ranges. The multi-band process of this card levels and re-equalizes the input signal and, with more than 30 presets and 50 parameters, a web producer has the ability to sculpt “web sound” to any variety of textures.

With a sound card that versatile, we would have been remiss if our video capture device was of a different standard. Based on its reputation with other broadcasters and cable networks, and its unique technical features, the Osprey 560 from Viewcast was the obvious choice. It offered us the opportunity for Advanced DMA at a full 30 frames per second, closed-caption extraction, and AVI capture for use with the most popular third party editing and streaming software applications. It was this ability to support multi-platform streaming that made the device so attractive to us.

NYU remains, for the majority of its applications, a RealNetworks client and possesses a robust Real server and license. Nonetheless, the Television Center periodically receives requests to stream content on other major commercial platforms, and we wanted to be able to accommodate those requests. Using a bundled software plug-in, Simulstream, the Osprey 560 card is enabled to simulcast multiple bit rate streams in several platforms, including QuickTime, Windows Media, and of course, Real.

The Clinton Forum lasted all day and was edited into four parts for the archived streams, corresponding to the day’s events: the plenary introduction, individual sessions, keynote, and closing remarks. For this post-production requirement, it was not necessary to cut the event using a non-linear editing system. Instead, we used the Real Media Editor that is bundled with the RealProducer Plus encoding software (see figure 2, p. 20).

While a basic, no bells-and-whistles editor, the Real Media Editor offered us several important advantages: it maintains the native resolution of the original stream, issues URLs using the same cataloguing structure as the parent file, and provides XML fields to input essential metadata clip information. The practical benefit was that we were able to provide the client with condensed, sound byte-rich segments suitable for the news media in a span...
of minutes, rather than archiving an all day conference on complex environmental policy issues in one large file.

PRODUCING A WEBCAST: ORGANIZING THE WEBCAST AND GETTING AN AUDIENCE

The process involved in making a webcast happen is two-fold. The first requirement, of course, is having the technical infrastructure to support the webcast. The second is coordinating all the players. As with all video production projects, communication, foresight, and organization are key components. When working with external clients, we have discovered that either they have their own webmaster for their site or, if they are a large entity like the Clinton Foundation, they outsource their site to another commercial vendor that manages the technology related issues. When working with external clients, we have discovered that either they have their own webmaster for their site or, if they are a large entity like the Clinton Foundation, they outsource their site to another commercial vendor that manages the technology related issues. When working with external clients, we have discovered that either they have their own webmaster for their site or, if they are a large entity like the Clinton Foundation, they outsource their site to another commercial vendor that manages the technology related issues. When working with external clients, we have discovered that either they have their own webmaster for their site or, if they are a large entity like the Clinton Foundation, they outsource their site to another commercial vendor that manages the technology related issues. When working with external clients, we have discovered that either they have their own webmaster for their site or, if they are a large entity like the Clinton Foundation, they outsource their site to another commercial vendor that manages the technology related issues.

While NYU and the Television Center provide the network access and licensing for a webcast, we also work with the client, who must provide support for the webcast to run efficiently. For starters, the client should have a website or page where the webcast will be advertised. The goal is to make the web viewing experience as user-friendly as possible.

To do so, we recommend to our clients that their main web page clearly explain the basics; in most cases, this includes who, what, when, and how viewers can access the stream. Since we use Real, we always recommend that a prominent disclaimer about downloading the RealPlayer be included with any advertising of the event, along with a link to Real.com. This way, viewers can prepare their computers in advance. We often supply clients with sample text that they can easily adapt for their sites.

Support from our clients is also needed in terms of updating their web page. A client’s webmaster is the most appropriate person to update the pages with all the relevant information and links to the webcast. We strongly recommend that this person also be available for the duration of the webcast, in case there are any technical glitches that require immediate communication with the web audience.

One method of measuring the success of a live webcast is through the number of hits and simultaneous streams from viewers. That’s why publicity is the most important factor in getting an audience for a webcast. There are a couple of concerns to address before putting the publicity machine in motion. Clients should always weigh the power of their marketing efforts and the need for a live virtual audience against whether the content is better put to use after the live event.

Questions to consider are: Who is the audience for this event? In the best-case scenario, what is the anticipated number of viewers? Whom does the client wish to attract via publicity for this live webcast? Once a publicity strategy is determined, the numbers of potential streams need to be evaluated along with the date and time of the live webcast to see how this event could potentially impact routine traffic on the NYU network.

In the case of the Clinton Foundation, there were many variables, including possible world events making for a busy news day. The reasoning for having a live webcast was dictated by the nature of the Forum itself—a daylong series of panels and a keynote address by President Clinton on the topic of energy. As a result, the event had the potential to garner significant publicity from both the print and television press. The goal was not only to reach out to people who could not attend, but also to provide a stream for the University of Arkansas to use for educational purposes.

Moreover, the Forum took place shortly after the Clinton Presidential Library opening, and organizers hoped to capitalize on the “bounce” from that event to draw attention to the Clinton Foundation and send traffic to their website. Lastly, the presence of world leaders at the Forum would bring international viewers via the webcast.
Ultimately, based on the need to accommodate a non-broadband audience both domestically and internationally, we decided to clip our bit streams at 150 Kbps. For an event of this type, a lecture in which there is little movement and the camera is framed on a tight shot of each speaker, this bit rate proved more than adequate. It also facilitated the compression rate of an eight hour event that at any other rate would have taxed our drive storage capacity as well as the network. After successfully webcasting the event, our technology and communication skills were put to one more test. At the end of the day, the Clinton Foundation requested that the archived streams of President Clinton’s opening remarks and keynote address be placed up on the Web as soon as possible. A reporter from the Washington Post had been unable to see the live event, but guaranteed an article in the next day’s paper if he could watch it online immediately. A responsive staff, quick editing, and user-friendly software allowed us to get the archived streams up in a short amount of time. As a result, the Clinton Foundation was the focus of a lengthy article in the Washington Post the following day, which also mentioned New York University. This would not have been possible without the coordinated efforts of all staff involved. In the end, with the total number of live viewing streams coming in at 238 and hits from viewers as far away as China and Paraguay, this webcast was very successful, both from a production standpoint and from the Clinton Foundation’s perspective. More information about the New Thinking on Energy Policy Forum, including archived streams of the event, can be found at http://www.clintonfoundation.org/feature-energy-120604.htm.

For details about the services available through the NYU Television Center, visit http://www.nyu.edu/tvcenter/. You can also learn about NYU-TV at http://www.nyu.edu/nyutv/.

Toni Urbano is the NYU-TV Programming Manager; José Calero is the Manager of the NYU Television Center.

Figure 3. This webcast was very successful, with many live viewers participating on the day of the event, and many more watching the archived stream on the Clinton Foundation website.

"ID," “E-mail,” and “Negative.” I also have the full dataset from the original survey with all the demographic and other easily coded data such as “ID,” “Age,” and “Internet Connection Type.” I merge these two datasets using the common variable, “ID,” resulting in a dataset with feedback about the dot-com’s e-mail culled from the textual responses, merged with information that will allow me to analyze the demographics of those who are not happy with the service.

All told, SPSS Text Analysis for Surveys is an impressive tool, greatly facilitating the process of including textual data in quantitative analysis. ITS has a copy available for researchers at the ITS Stats/Mapping Lab (at 12th St. and Third Ave.); contact frank.lopresti@nyu.edu for more information. SPSS also offers a free 30-day demo at http://www.spss.com/downloads/.

Many NYU staff and administrators have extremely busy schedules with a multitude of meetings on different topics in various locations—some of which they need to arrange themselves. In addition, they typically have a complicated list of tasks to accomplish each day or to assign to others. If this sounds familiar (or even if your schedule is a bit less hectic), you should try Meetingmaker, a calendaring software program available to most NYU staff and administrators through an ITS-obtained site license.

Meetingmaker is a user-friendly program for Windows, Macintosh, or Solaris that helps you manage the kind of scheduling and task-management information that you might currently keep in a paper calendar or electronic device. Meetingmaker, though, has many advantages over a paper calendar: you can access your schedule from any computer connected to NYU’s network; receive reminders of upcoming meetings; coordinate or (optionally) share your calendar with other people; delegate the management of your calendar to an assistant; easily find an available time, room, and equipment for a meeting, and then propose it to colleagues (or respond to proposals from others); disseminate information about a meeting’s agenda; and maintain todo lists for yourself (see figure 1).

Figure 1. The four main Meetingmaker windows (left to right): Daily calendar; Monthly calendar; Proposals; and To-Do List.
MEETINGMAKER FEATURES
Meetingmaker works by storing the schedule of each person who uses it on a shared server, allowing you to:

> Plan and schedule meetings
Send meeting invitations, automatically reserve meeting rooms and equipment (projectors, VCRs, etc.) or schedule recurring meetings. Meetingmaker allows you to check the availability of individual attendees (so long as they also use Meetingmaker), or you can use the Auto-Pick feature to quickly find the earliest time that all required guests can attend. With your invitation, you can also include an agenda or notes. With Meetingmaker, you can accept or decline meeting proposals from your colleagues; the software will automatically notify them of your response and, if you can attend, add the event to your calendar.

> Organize your personal calendar
Easily organize all aspects of your personal calendar and let other Meetingmaker users know about your availability for meetings. You can also keep track of personal appointments, while hiding the details from others, as desired.

> Share calendars
View the details of another person’s calendar through a feature called “proxy.” Your colleagues may give you proxy rights to view, or view and edit, their calendars. Similarly, you can give others proxy access to your calendar and control whether they can read or update your calendar. Meetingmaker can also control whether or not that person sees descriptions of your activities or to-do items.

> Maintain a list of tasks
Use the To-Do List feature to organize and prioritize your important tasks. You can also assign tasks to other people who use Meetingmaker.

> Set meeting reminders
Specify when and how you want Meetingmaker to remind you of upcoming events: play a sound, blink an icon, send an e-mail notification, or open a reminder window on your computer’s desktop (see figure 2).

> View a master schedule
Use the Master Schedule feature to see and select a meeting time when an entire Meetingmaker group—including guests, locations, and resources—is available. Your department’s Meetingmaker administrator can create public Meetingmaker groups, and you can create your own personal groups.

> Synchronize your calendar
Synchronize your Meetingmaker calendar with Palm OS platform handheld devices, such as those made by Palm and Handspring (do-it-yourself instructions are available in the NYUHome Meetingmaker channel described below).

> Access your calendar from home or on the road
Connect to or update your Meetingmaker calendar from work, your home computer or, when traveling, from any Internet-connected computer. Since your calendar is stored on a server (rather than your work computer), any changes you make to your schedule will be available no matter where you access it.

GET STARTED & LEARN MORE
To begin using the Meetingmaker calendaring tool, request an account by sending an e-mail message with your full name and NYU NetID to: meetingmaker.request@nyu.edu. Once your account has been activated, you should then download the Meetingmaker client and detailed instructions about how to use it through the NYUHome Meetingmaker channel (located within the WORK tab).

If you have an active Meetingmaker account but do not see the Meetingmaker channel when you log into NYUHome, you may need to make it visible. To do so:
1. Select the PREFERENCES link at the top of the NYUHome screen.
2. Click the “See List” link in the YOUR CHANNELS section.
3. Select the checkbox next to the Meetingmaker option within the WORK subsection.

ITS currently offers version 7.5 of Meetingmaker, used by more than 1,000 NYU staff and administrators. We are now in the process of evaluating a new version of the software with enhanced web features. If you have questions about accessing or using Meetingmaker at NYU, please send e-mail to: meetingmaker.help@nyu.edu.

Christian Grewell and Sehna Rostom are User Support Specialists at the ITS Client Services Center.

Figure 2. Meetingmaker can remind you of upcoming meetings.
One of the primary responsibilities of an archivist is to hold on to “stuff” (papers, photos, tapes, statues, etc.) and be able to find it when asked. Most archivists deal with quite a bit of “stuff” that is arranged into collections, and the ability to find items in those collections relies on two things: organization and description.

For the uninitiated, archival collections are assemblages of materials of historic or evidential value that have some unifying characteristic, and can range in size from a single folder to hundreds of linear feet. These materials most often comprise individuals’ personal papers or an organization’s records. A collection’s description enables the researcher to determine if what he or she is looking for is in that collection. Organization orders the descriptions in a way that makes the material retrievable. The more material, the more time an archivist must devote to organizing and describing; finding better, more efficient means of doing so has been an ongoing challenge.

Until the 1980s, archives, along with libraries and museums, kept track of their materials on paper. Records of how something was received at an archive (known in the field as an accession) and descriptive inventories (known as finding aids) were typed up and stored in filing cabinets. Complex, handmade indexing systems were implemented to help an archivist find material relating to a given subject or person.

And then, technology intervened. Libraries, and then museums, benefited from computers first, primarily because they already had established guidelines for description. In addition, they were usually dealing with a more uniform set of materials than archives: books, paintings, objects, etc. The cataloguing guidelines that had been developed over hundreds of years were transferred to online catalogs relatively easily. A basic database framework was inherent in their manual systems. Unfortunately for archives, there were few established guidelines for description and, where they did exist, there was little adherence to them.

Though archives have existed throughout known history, the profession of archivist is fairly recent and professional training has only been available since the end of World War II. NYU has one of only a few archival certification programs in the country. In general, archival collections were not organized or described uniformly enough to enable a one-stop software fix for all their problems. Archivists were fairly quick to recognize the problem and, by the early 1990s, organized groups such as the SAA (Society of American Archivists) that began to develop and apply standardization in description and organization. The main vehicle used by archivists for description and organization is the finding aid, so standardization of its format was imperative.

One of these standards was EAD (Encoded Archival Description). Despite the catchy acronym, its practicality and necessity took some time to become widely recognized. NYU, however, was an early implementer of EAD and currently has over 300 collection inventories accessible online with EAD finding aids. EAD enables an archivist to index elements that previously existed statically in typed or word-processed finding aids. EAD requires adherence to a standard form with a Document Type Definition (DTD, soon to become a schema).

In most cases, researchers find an archival collection by way of an online catalog record that gives the implication of [the Archivists’ Toolkit] is that any archive, regardless of size or resources, will have a significantly greater ability to share its collections with the research community.
researcher a general idea of what a collection contains. This catalog record can then link to a finding aid. The finding aid is intended to be a more comprehensive description of a collection than what can be found or listed in the online catalog record. The finding aid will typically present the researcher with an inventory of the collection’s contents that can point the researcher to a specific item or folder that contains the item for which they are searching.

When EAD is implemented, finding aids may also be loaded into databases to be searched directly by researchers. Direct searching provides the researcher with additional and more robust search opportunities, well beyond those available through the catalog record.

If two separate repositories have finding aids in EAD, they may also be collected into a larger “union” database because they all speak the same language. This is immensely important for smaller repositories that may not have a significant IT infrastructure or profile in the research community but hold important collections. If they can include catalog records that point to finding aids in a consortial catalog, their collections are also more likely to be found by the research community.

One hurdle in achieving buy-in for EAD is the fact that it looks like XML (because it is) until it is run through an XSL style sheet (see figures 1 and 2). XML and XSL were, and to some degree continue to be, outside the average archivist’s skill set. It therefore requires a significant investment to learn or have someone on your staff learn EAD. In addition, EAD does not hold all the answers. Among its limitations, EAD will only handle description of materials that have been organized; it doesn’t address other types of administrative information such as accession location and condition data. An ancillary tool is also needed to search across finding aids in either one’s own institution or in a larger consortial setting.

That is where the Archivists’ Toolkit enters the picture. In June 2004, New York University Libraries and the University of California, San Diego (UCSD) Libraries, working together with the Five Colleges Libraries, were awarded a grant from The Andrew W. Mellon Foundation to develop a suite of open source software tools for processing and managing archival information beyond what is offered by EAD, while providing EAD as an output.

At present, there is no successful computer-based collection management system tailored to the needs of archival repositories. The Toolkit will address this need by enabling archivists to enter their data into a simple interface and output an EAD finding aid without having to concern themselves with any XML encoding. It will also allow them to manage other parts of their operation, such as keeping track of the location of materials and who donated them, how many researchers are using what materials, what requires pres-

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1. Extensible Markup Language (XML) is a programming language for the Web that allows for customized tags, enabling richer definition and easier transmission of data. Extensible Style Language, or XSL, is a specification that, similar to the concept of templates, allows programmers to dynamically apply a single style to multiple XML (or HTML) documents.
reservation attention, and even whether an acknowledgement has been sent to the donor of a collection. All these functions are normally handled by separate software tools that have little or no integration, which results in a highly segmented and redundant workflow that is inefficient and costly.

To ensure the development of a truly comprehensive software tool, the Archivists’ Toolkit will be created with the input of seventeen archival repositories that represent a broad range of workflows, sizes, materials, staffing, and resources. The repositories participating in the project are:

- **In New York City** – The American Museum of Natural History, The Brooklyn Museum of Art, Carnegie Hall Archive, The Center for Jewish History, Manhattan College, NYU’s Fales Library & Special Collections, University Archives, and Tamiment Library & Wagner Labor Archive
- **In western Massachusetts** – Amherst College Archives and Special Collections, Hampshire College Archives, Mount Holyoke College Archives and Special Collections, Smith College Archives, Sophia Smith Collection, and the University of Massachusetts Amherst Special Collections and Archives
- **In southern California** – UCSD’s Mandeville Special Collections Library and Scripps Institution of Oceanography Archives

The project has received funding through June 2006, and its management is based at the UCSD Libraries. The programming team is located at the NYU Libraries, with specifications being developed at UCSD, the Five Colleges, and NYU. The specific features of the application will be vetted and tested with the staff at the above fifteen archival repositories in the San Diego, New York City, and Amherst areas.

Because the Archivists’ Toolkit will be free and open source, anyone will be able to obtain the software and programmers will be able to tailor the software to the needs of individual repositories. If the Toolkit is successful, it will decrease the time and costs associated with archival processing and promote the standardization of archival information. This will benefit researchers by increasing the amount of material processed, making it possible for more of a repository’s budget to be shifted from archival description to collection development or public service. In addition, it will facilitate the development of more sophisticated and granular union catalogs of archival information. The implication of this is that any archive, regardless of size or resources, will have a significantly greater ability to share its collections with the research community.

For more information about the Archivists’ Toolkit, please visit [http://clio.bobst.nyu.edu/toolkit/](http://clio.bobst.nyu.edu/toolkit/).

Nancy Cricco is University Archivist at the New York University Archives; Brian Stevens specializes in Encoded Archival Description at the NYU Archives and is the Project Archivist and Designer for the Archivists’ Toolkit.
As libraries, museums, and archives offer more and more research materials online, scholars are being forced to respond. Rather than seeing themselves as merely using the Web to access materials that only a year ago were hard to obtain, some scholars here at NYU are reconsidering their entire relationship with digital content. In doing so, they are finding a need not only to use the Web, but also to take part in the development of web applications.

The Modiya project, a collaboration of the ITS Faculty Technology Center (FTC), the ITS Academic Computer Services (ACS) Humanities Computing Group, ITS eServices, the NYU Digital Library Team, and NYU’s Center for Religion and Media (funded by the Pew Charitable Trusts), is a case in point. The project is an experiment in customizing freely available digital library software for a community of scholars. The project began with a series of meetings among some 40 scholars—including graduate students from NYU and other universities—interested in mapping ways to study and teach a wide range of topics at the convergence of Jewish Studies, Media, and Religion.

Given the group’s broad and open-ended mandate, they dedicated their initial meetings to reconnaissance, that is, to a collaborative investigation of emergent cultural phenomena—from the popularization of the Kabbalah and Internet Jewish matchmaking services to the Talmud on CD-ROM, Hasidic reggae, and Schindler’s List tours. As a result of these meetings, the group’s spokespersons, Professor Barbara Kirshenblatt-Gimblett (Department of Performance Studies, Tisch School of the Arts) and Professor Jeffrey Shandler (Department of Jewish Studies, Rutgers University), invited the ITS FTC and Humanities Computing Group to join the project.¹

In the months that followed, a series of conversations about using the Web to promote new research, teaching, and scholarly exchange led to the development of the Modiya (“messenger,” in Hebrew) online curriculum pilot, available at http://modiya.nyu.edu. This pilot transforms DSpace—a freely available software package developed by MIT Libraries and Hewlett-Packard (HP) for storing, indexing, preserving, and redistributing digital content—into a tool for collaborative authoring and teaching.²

Figure 1. Sample Modiya Metadata

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1. Special thanks also to Nicola Monat-Jacobs (ITS eServices) and Joe Lee (ITS student employee).
In doing so, the pilot curriculum advocates a new way of thinking about producing content for the classroom. As the scholars involved with the project describe it, it's a way of working “inductively.” Modiya members begin with the content and work up and out to construct the larger theoretical and methodological frameworks for research and instruction.

Sounds great, right? But how does Modiya work? First, scholars are granted membership in the Modiya community, which allows them to contribute digital content (anything from a video clip to a web page to an essay or collection of links). They are then asked to describe this content using a metadata protocol the Modiya community has developed in conversation with ITS and NYU Libraries staff. This metadata, which is particularly concerned with layers of remediation, helps guarantee the long-term preservation of the content produced, while also allowing this content to be displayed in a digital environment. Information about plug-ins needed to view a particular file format is included, along with more traditional bibliographic information such as the author of a work or the title of an image as well as information about each remediation (see figure 1, p. 27).

Of course, even the process of establishing proper metadata has not been without its challenges. Who is the author of a website that combines multiple elements and changes over time? Does a website have a publisher? A publication date? How best to capture the idea that the digital image taken from an auction website for its content is also an artifact in its own right? How will capturing this data benefit not only archivists but also media scholars? As more and more content is submitted to the project, these questions fuel further discussions about how best to document media artifacts and how to make this documentation useful to present Modiya community members as well as future scholars and technologists.

Regardless of the challenges of describing digital content, Modiya ensures that once content is submitted to the project it becomes readily available to the Modiya community at large and can be used by any member to author new content. To do so, community members can create units (for example, on textual practices, religious travel, mediating ritual, film festivals, or Haredi media) and specific topics within them (see figure 2). Topics, which generally take the form of case studies, can range from a discussion of a website, such as the Lower East Side Tenement Museum’s web presence, to mediations of a single work, such as Anne Frank: Diary of a Young Girl.

These units and topics can then evolve as members of the community contribute new content to the Modiya project. For example, the topic of Anne Frank has now grown to include Broadway musicals and films, including Japanese anime, based on the Diary, the Anne Frank House, and artists’ projects that explore the sacralization of Anne Frank. Once a topic is developed, it can be featured in a unit. Each unit includes an introduction, a curated section of scholarly resources, suggestions regarding how to teach the unit, possible research projects, and how the material might relate to other topics and units in the Modiya project.

Drawing on the project’s content, any member of the Modiya community can create units and topics by using a series of interfaces designed by the FTC and ACS Humanities staff and accessible via the Web. In addition to these interfaces, ACS staff also developed a commenting system for the Modiya project that allows members to comment directly on a given topic or unit (comments can be read by anyone, but only Modiya members and subscribers may post them).

The result is a curated online space of ideas and resources—part archive, part classroom, part exhibition—that invites visitors to make their own connections among various topics and to contribute to them. Modiya project members call their initiative an example of “research-centered pedagogy” and feel that their efforts will not only inform how they teach but also what they teach and, more specifically, how they formulate their object of study.

An open source, collaborative approach not only to software development but also to scholarship and

teaching presents certain challenges. While software developers have long debated the pros and cons of open source or free software, questioning everything from the quality of code produced to the long-term commitment of individuals to any one community, researchers and instructors are just beginning to consider the issues at stake.

Often, when ideas about work processes are adapted from one context into another, new challenges arise, which force all those involved to reconsider their initial goals and objectives. As scholars see an ever greater need to develop their own institutional resources will be required to create sustainable solutions? How will decisions get made? And who will be involved in the process? What impact will the process have on expectations surrounding scholarship as well as instruction? Who will guarantee the long-term upkeep of materials?

No doubt, customizing freely available digital library software such as DSpace encourages both scholars and technologists to think broadly about these questions, but no open source software has as yet provided a definitive solution. As evidenced from the experience of the Modiya project’s participants, customizing nonproprietary software can, at best, serve as a point of departure for tackling the challenges facing research and teaching in an increasingly digital and networked university.

**DISCUSSION**

During the course of the Modiya Project, the author conducted a series of conversations with Professor Barbara Kirshenblatt-Gimblett and Professor Jeffrey Shandler about some of the less tangible aspects of developing the Modiya/DSpace online curriculum. We have provided excerpts from our conversations here in the hope that these reflections will prove of interest to anyone considering the development of an online curriculum.

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**Q:** The term “open source” has come up numerous times during the course of this project, both when we discussed software solutions and when we searched for ways to characterize the group’s desire to cultivate a new approach to scholarship and teaching. While I have a good sense of what the term “open source” means in the context of software development, I was wondering if you could speak to what “open source” means in the context of the Modiya project?

**A:** “Open source” means collective creation and openness to all who choose to participate. In the case of the Working Group on Jews, Media, and Religion, this approach governs everything we do. It means sharing resources and working collaboratively. We place a premium on process as a mode of collective discovery. The group is diverse and the style is egalitarian, inclusive, and collegial. One of our members commented that our group “is a very nurturing place to think creatively.” What better model for teaching and scholarship?

In an increasingly proprietary world, the open source ethos is all the more important. That ethos is relevant not only to technology, but to our entire way of working, which is why we have adopted the term “open source.” The immediate benefits include access to unlimited and varied expertise and fostering of creative synergies to produce an accessible collective good. Short term, the open source model is a highly productive way of working. Long term, the open source model allows for the continued collective and incremental development of a project.

As for drawbacks, much depends on the self-organizing nature of the collective endeavor, which in our case starts with a lively face-to-face group that meets regularly, but which will, when Modiya is launched, open out to a wider network. Can we replicate in the online environment the kind of excitement we generate in our face-to-face meetings? As the network widens, issues of focus, identity and individual authorship. First, several of our members were wary about putting so much effort into a digital project, which they consider intangible and ephemeral compared to a print publication. Second, those who are coming up for tenure or looking for academic positions were worried that this kind of project—digital and curricular—would not count towards tenure and that they should focus their energies on peer-reviewed print publications. Third, we felt it was important to acknowledge individual contributions to Modiya and for users to have confidence in the expertise that goes into particular units.

We are therefore asking the group to designate an editor for each unit so as to establish a point person. This will make it easier to coordinate the work as the project expands and more people are involved. It will also let users refer
their queries to one person, who can coordinate responses. We also hope that the editor designation will motivate members, particularly those concerned about tenure or getting hired, since they will be able to claim authorship. We are also stressing that the Modiya project is a strength in the case they make for their teaching.

Regarding digital authorship in relation to our experience in teaching and scholarship, several of us have co-authored publications and worked collaboratively on exhibitions, films, conferences, and other projects. What is different here is the open, incremental nature of Modiya, with the potential for a longer term and much larger collaborative network than anything we have done in the past.

Q: What types of community or scholarly networks do you see the DSpace module promoting? What types of exchanges do you foresee happening online and off as a result of the Modiya/DSpace curriculum?

A: We are hoping with Modiya to make an intervention within Jewish Studies, a field whose strengths are in the areas of text, Jewish thought, and history, by showing what Jews, Media, and Religion might offer as a subject for teaching and research and by providing curated resources to support those efforts. We are also hoping to contribute to other fields of study. Working inductively from particular case studies, our theoretical and methodological contributions arise from the cultural specificity of the Jewish phenomena we study, but our way of working is more widely applicable, and we encourage comparative approaches.

Q: Do you feel the Modiya/DSpace curriculum promotes new approaches to translating different language materials?

A: We would like to explore this topic. First, we want Modiya to be international and multilingual. Although the interface is currently only in English, we hope to be able to accommodate submissions in other languages. A particular challenge is managing languages in other alphabets, notably Hebrew and Yiddish, especially when these languages appear on the same pages as English.

Q: Has developing the Modiya project caused you to think differently about how you get feedback, what feedback you want to encourage, and the relationship between feedback and your teaching and scholarship?

A: We are still trying to think this through, as is evident from the ongoing process of developing an effective commenting system. We have several goals with respect to feedback:

1. We want users to contribute to the site and help to build it. This process might start with comments and feedback and evolve into a more active role in creating part of the site.
2. Discussion among users, whether about the content or about teaching the content, would enrich the project and help to build networks and community.
3. We are hoping for feedback that would let us improve the site in relation to how it is actually being used by scholars, teachers, and students.
4. We are thinking about ways of managing feedback, comments, and discussion so that we can more easily convert some comments into elements of the site, monitor comments for relevance, and find a way of structuring the commenting area for effective retrieval.

Q: How has the Modiya/DSpace project allowed you to reconsider your role in preserving digital content? What new questions has it raised for you regarding the preservation of media materials and who should be involved in this process? Also, what are some of the issues concerning access and data loss that have arisen during the course of the project?

A: The ephemeral factor is a major concern, and not only for the duration of Modiya. How long will it continue to be developed? What will be its post-development phase? Will it become a record of itself? And, if so, how long can it stay up and continue functioning without constant maintenance? This is the downside of an incremental networked project in a digital environment. There would seem to be a need for two levels of maintenance: active, for as long as the site continues to develop; and routine, for as long as the site continues to be accessed.

These questions are further complicated by the transitory nature of digital material we include on Modiya, the limited access of proprietary material, issues of intellectual property and fair use, and the status of electronic publication of original content. Not only do URLs change, requiring regular updating of the site, but also many online readings are accessible only through libraries that subscribe to particular journals or proprietary databases in which they are included. An issue for us is our role in creating a digital archive of websites we consider to be important cultural artifacts—either capturing them at a particular moment in their development or preserving them, knowing that they won’t be there forever in any form. Books go out of print. Where do digital projects go?

Q: In your own description of the larger objectives of your working group on Jews, Media, and Religion, you indicated an interest in focusing not only on media artifacts, but also on the history of these artifacts’ reception and exchange. How has the Modiya/DSpace project allowed you to do this?

A: To take but one example, which arose in our work on museums, we considered how museums extend beyond their buildings through websites that allow them not only to communicate with their audiences, but also to provide online access to collections and exhibitions. In some cases, a museum may only exist online, such as The Jewish Museum.

Continued on p. 33 >>
How to Download Your E-mail Using IMAP

By Eduardo De León
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This article is part of an ongoing series of tips and training from ITS on various aspects of using e-mail at NYU.

E-mail programs use one of two methods to check your account for messages: IMAP or POP. The POP protocol downloads new messages to your computer, meaning that you can no longer access those messages from a different computer. The IMAP protocol (which ITS recommends instead of POP) leaves messages on a centralized e-mail server until you move or delete them. One of the main advantages of the IMAP protocol is that messages remain available to you at all times, regardless of which computer or mail program you use to access them.

One of the challenges of using IMAP, though, is that the server that stores the messages has limited disk space, which is why most e-mail accounts have storage quotas (NYUHome provides a generous 100MB quota). What can you do, then, if you have so much saved mail that your account is nearing or over the quota, preventing you from receiving new messages? Fortunately, there is a simple procedure, described here, that allows you to download selected mail messages (removing them from the mail server) and save them on your computer or external media such as a CD.

The first step you should take is to sort your messages into different mailboxes, according to whether you want to keep them on the e-mail server, or download and delete them from the server. Next, configure your favorite mail program to access your e-mail using the IMAP protocol. This article will show you how to configure Outlook 2003 on Windows XP or Apple Mail on Mac OS X to use IMAP to access your NYU e-mail, and then instruct you on how to download you mail. Note that this process is similar in all e-mail programs.

CONFIGURING OUTLOOK FOR IMAP ACCESS TO YOUR NYU E-MAIL

Open Outlook by selecting Programs from the Start menu, then selecting Microsoft Outlook from the Microsoft Office suite. In the window that opens, select E-mail Accounts… from the Tools menu. Select the option to Add a new e-mail account and click Next. On the following screen, select the IMAP server type and click Next.

Enter the following information about your account, as shown in figure 1: In the User Information section, within the Your Name textbox, enter your name as you would like it to appear on outgoing e-mail; in the E-mail Address...
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taxbox, enter your NYU e-mail address; in the Server Information section, enter mail.nyu.edu as the incoming mail server, and smtp.nyu.edu as the outgoing mail server.1 In the Logon Information section, enter your NYU NetID as the Username and leave the Password field blank. (ITS recommends that you never save passwords on your computer.) Click Next, then Finish. Outlook will prompt you to enter your NYUHome password when connecting to the mail server.

**CONFIGURING APPLE MAIL FOR IMAP ACCESS TO YOUR NYU E-MAIL**

Open Apple Mail, then select Preferences from the Mail menu and click Accounts. Click the plus (+) sign to add a new account, and enter a description (such as “My NYUHome E-mail”) in the Description textbox. For the Account Type, select IMAP (see figure 2). Enter your e-mail address and your name as you would like it to appear in outgoing e-mail. Enter mail.nyu.edu for the incoming mail server, your NYU NetID for the Username, and leave the Password field blank. (ITS recommends that you never save passwords on your computer.) Enter smtp.nyu.edu for the outgoing mail server (see footnote on p. 31). Close the Accounts window, and save your changes when prompted. Mail will prompt you for your NYUHome password when connecting to the mail server.

**SYNCHRONIZE & DOWNLOAD**

Once you have configured your mail program, you should synchronize the mailboxes in your account by checking for new messages (enter your NYUHome password when prompted). Synchronizing makes your mail program aware of how many mailboxes you have on the server, and how many messages there are in those mailboxes. In Outlook, select Send/Receive Mail from the Tools menu. In Mail, select Get New Mail from the Mailbox menu.

Next, create new folders on your computer to store the messages you want to download. You must create the new folders in your computer’s local folders area, not on the e-mail server. In Outlook, the local folders are listed under Personal Folders. In Mail, your local folders are under On My Mac. To simplify the process, give these new folders the same names as the folders or mailboxes on the e-mail server. For example, if you want to download a mailbox/folder on the server called “December2004,” then you should create a new mailbox/folder in your computer’s local folders named “December2004.” To create a new folder in Outlook, open the File menu and select New, then Folder (see figure 3). To create a new mailbox in Mail, open the Mailbox menu and select New (see figure 4).

**Figure 2. The Apple Mail IMAP account settings.**

**Figure 3. To create a new local folder in Outlook, open the File menu and select New then Folder.”**

Repeat this process for each mailbox that contains messages you want to download.

The next step is to download the messages you choose from the server to your computer. Unfortunately, it is not possible to download an entire mailbox/folder from the server at once, so you will have to select the messages you want to download, and then copy them to the local mailbox. To do so, open the mailbox on the server containing the messages you want to download, then either select the specific messages you wish to download, or select all of the messages by choosing Select All from the Edit menu (in both Outlook and Mail) when the mailbox is open. Once selected, copy the messages to the corresponding local mailbox/folder by dragging and dropping them; or you can right-click (or Control-click when using a Macintosh) the selected messages, choose Move To, then select the local folder to which you wish to move the messages. If necessary, repeat this process until all the messages you wish to download are moved to your local folders. Once finished, you may then choose to copy these messages to a CD or other external media for storage, or leave them on your computer.

Note that, by default, when you move your messages in this way, they will be copied to the mailboxes on your computer and deleted from the mailboxes on the mail server. This means that these messages will only be accessible to you when you are using the computer to which you downloaded them and the mail program you used to transfer them. The benefit, however, is that these messages are now deleted from the server and will not count towards your mail quota.

If you need assistance with this process, you may contact the ITS Client Services Center at 1-212-998-3333 or its.clientservices@nyu.edu. Eduardo De León is a User Support Specialist at the ITS Client Services Center.

Figure 4. To create a new local folder in Apple Mail, open the Mailbox menu and select New, then name the folder in the window that opens.

in Cyberspace (http://www.amuseum.org/), the Canadian Jewish Virtual Museum and Archives (http://www.cjvma.org/), and Project Mosaica (http://www.mosaica.ca/). Virtual museums throw into question the role of physical objects in defining not only the museum as an institution that collects and exhibits things, but also what is expected of a “museum experience.”

Thinking pedagogically about these issues, we were inspired by the work of Emily Katz, one of our members. She assembled a Judaica collection based entirely on eBay purchases and, on that basis, curated an exhibition that reflected on the transactions through which objects are valued and circulate. Using this model, students could create their own exhibitions based on images of items sold on eBay or other auction sites. While they would not be expected to purchase objects, they could track the bidding to the final sale and reflect on eBay as a marketplace for objects that sellers and/or buyers consider “Jewish” and on the question of their value. Their exhibitions, whether in the form of a website or physical installation of images, would require a process of conceptualization, selection, arrangement, and interpretation, as well as an account of the rationale for their choices.

This approach is consistent with our interest in media practices, including our own. For example, we have been adapting the DSpace metadata protocols, which are based on Dublin Core (http://dublincore.org), to reflect each layer of mediation in an item (e.g., a digital image from an online auction site of a postcard that reproduces a painting). Working with DSpace has made us more acute observers of the very objects we are studying.

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Few events capture the public imagination like the Tisch School of the Arts’ Interactive Telecommunications Program Winter and Spring Shows. They are always an enjoyable and impressive display of emerging and innovative technologies, and the Winter Show 2004 was no exception. The work by ITP’s talented students showcased at this event (which is free and open to the public) is consistently fun, inspirational, and fascinating.

The Winter Show 2004, held on December 19th and 20th, was a hands-on playground of sights, sounds, and sensations, representing nearly 100 projects from more than 25 ITP classes. Since it is, unfortunately, impossible to do them all justice, a small sampling of the projects is described below. Details about all of the Winter Show projects are available at http://itp.nyu.edu/show/.

“Out of the Closet” by Sonali Sridhar and Michal Bril broadens the horizons of fashion by introducing the idea of networked clothing. The apparel features tri-color Light Emitting Diodes (LEDs) that wearers can adjust to their mood or preference. Once a wearer goes out in public, wireless sensors on the clothing cause the lights to pulse and change color when he or she walks past another person sporting the same brand (see figure 1). The designers’ idea is to facilitate random social interaction through a visual cue of common interests, similar to the way that strangers walking dogs or using the same brand of technology are more likely to strike up a conversation.

“Sonictrroller” by Spencer Kiser and David Hindman offers a new take on music instruction, providing the opportunity to play a video game using only a keyboard and the player’s voice to control the action. The team use Max/MSP software to process the audio data signal from the players into an adapted Nintendo-64 game controller, with the resulting game (in this case, Mortal Kombat) displayed on a video screen. Although no musical expertise is required to enjoy this game, it is a fun and useful tool for encouraging aspiring musicians to practice.

“Bicycle Wheel” by Michael Kertesz uses a programmable strip of LEDs mounted on the spokes of a bike to demonstrate how the “Persistence of Vision” phenomenon can be used to increase cyclists’ safety...
and pedestrians’ entertainment. As described by the designer, “Persistence of Vision” is the ability of the human eye to perceive a series of rapid still images as a single moving image by retaining each impression on the retina for about one-tenth of a second.” The lights, which can be programmed to display a message or image, effectively increase the bike’s visibility to drivers, while creating an ephemeral social interaction between the biker and the public as they speed by (see figure 2).

“on beauty” by Joan Soler Adillon is a politically-inspired product of Daniel Rozin’s course, “The World—Pixel by Pixel.” As a participant approaches a blank plasma screen, he or she is handed a brush and asked to “paint” the air in front of the screen. As he or she moves the brush, a beautiful, stylized photograph is slowly revealed on the screen, juxtaposed with a live projection of the participant on the periphery of the screen. Eventually, the participant will uncover enough of the image to recognize that it actually depicts a victim of war or social injustice. The designer’s goal is to provoke the participant into a realization that the beauty and technology that surrounds us in the western world is a privilege that sometimes comes at a cost to others (see figure 3).

John Geraci describes his project, “Grafedia” as “hyperlinked text in the physical world.” He has developed a platform for participants to create street art by writing a message in a public space that—playing on the traditional hyperlink—indicates a keyword in underlined blue lettering. The writer then uploads a media file to the Grafedia site to be associated with the linked word. Passersby who notice the Grafedia message can “click” on the link by using their cell phones to send a text message to the keyword followed by @grafedia.net, and soon after receive the writer’s media file in reply. The designer’s intention is to make every physical surface a potential web page, thereby facilitating communication and integrating the physical world more closely with the virtual (see figure 4).

“Solar Wallpaper” by Teresita Cochran, Marta Lwin, Ramakrishnan Subramanian, and Ty Whitfield, is an aesthetically pleasing exploration of sustainable energy sources. The wallpaper is embedded with electroluminescent technology that stores solar energy in a battery when a room is sunlit, then automatically increases luminosity (in this case with glowing flowers) to meet the lighting requirements of the room.
once the sunlight fades. The project is an elegant combination of creative energy conservation and beautiful lighting design (see figure 5).

“Through the Looking Glass...” is an interactive mirror display developed by Gabriela Richard and Thomas Ainslie as part of the “Developing Assistive Technology” class. It is intended for use by children with various kinds of disabilities. Developed from the designers’ research with NYU occupational therapy students Wan-Wen Chiu and Vanessa Khan, this versatile tool encases a large plasma screen within a colorful display featuring various tactile sensors that, when touched, produce digital effects on the screen. The goal is to encourage children to reach, push, pull, and turn the sensors to build upper body flexibility and strength, while increasing their comfort with touching a variety of textures that they might normally avoid (see figure 6).

“The Bureau of Doctor Goodman” by Jeffrey Galusha and Emily Conrad offers an interactive post-linear narrative of “love, deceit, and murder.” Inspired by pulp fiction, radio mysteries, and a desire to work outside the constraints of traditional literature, the creators embedded an antique bureau with Max/MSP-driven hardware. As participants randomly open doors and drawers in the bureau, they are treated to brief audio clips of a lurid story told from multiple perspectives, resulting in a unique interactive experience for each person.

“Ptooie” by Dedi Hubbard and Joseph Versoza consists of a networked flower that detects unencrypted (and therefore insecure) traffic on a wireless network (see figure 7). When “planted” on a given network, the flower’s software monitors network traffic to sniff out passwords that have been sent in the clear; when one is found, the flower’s health visibly decreases. The goal of the project is to raise security awareness by offering a visible indicator of the “health” of a given network.

“nyc wind portrait” by Marta Lwin and Noah Shibley is a digital art installation in which a photograph of the participant is displayed on a large plasma screen, and is then digitally manipulated by real-time dynamic wind data measured in Central Park (see figure 8). The result is mesmerizing, as the pixels of the photograph are “blown” off or around the screen in accordance with the current velocity and direction of the wind. A sample portrait in action is available at http://stage.itp.nyu.edu/~mjl359/cgi-bin/windFIN.pl.

“cell.SPACE” by Dana Karwas uses cell phone text messages as...
source material for instantly generated music videos that can then be displayed in a public forum. Once received, the message is displayed as text on a screen with customized graphics, and the words of the message are used as lyrics set to a hip hop beat, performed by a voice of the participant’s choosing (e.g., female, robot, etc.). cell.SPACe gives participants a unique opportunity to creatively convey a message while controlling the sights and sounds in any given public space (see figure 9).

“EM Shelter Booth” by Philip Hirshfeld (an NYU Gallatin School student enrolled in an ITP course) investigates the idea of Electromsmog, or electromagnetic (EM) radiation concentrations in urban areas. The designer conceptualizes EM shelters (similar to phone booths) and copper mesh wallpaper, tiles, and curtains, all of which could be used to protect the user from EM radiation, which some people believe to be detrimental to health and privacy. In our increasingly networked world, these concepts provide an interesting take on the idea of finding refuge in the urban landscape.

“ePaparazzi,” a game developed by Gregory Trefry, Andrew Cummins, Demi Pietchell, Zohar Rotblit, and Ron Shely, challenges players to photograph other players in specific situations (e.g., talking on the phone) over the course of a week, while avoiding being photographed themselves. The results are sent to and displayed on a website, which also tracks each player’s progress throughout the game. The team of creators “wanted to develop a large-scale game that would intermingle with players’ everyday lives [and] take advantage of the communal aspects of sharing photos...while also generating a bit of paranoia in players.”

“Pulse Lamp” by Greg Trefry and Matty Sallin is an ornamental lamp that detects and “echoes” a person’s heartbeat by pulsating in brightness (see figure 10). A participant places his or her hands on either side of the lamp base, where the pulse is detected. The resultant rhythm, soothing glow, and pleasing design of the light create a hypnotic biofeedback effect, which is thought to relax participants and slow their heart rates. The designers’ goal was to take an unconscious function of the human body and raise it to the public, conscious level, where it can be visible and useful to the participant and shared with others.

While this is only a small cross-section of the wonderfully diverse and innovative projects coming out of the Interactive Telecommunications Program, I hope it will inspire those of you who are not already fans to explore the entire Winter Show 2004 website at http://itp.nyu.edu/show/, and to attend the Spring 2005 show (May 10-11, 5:00-9:00 pm) to discover what these talented students will come up with next.

If you are interested in actually creating interactive technology projects like these, ITP welcomes non-majors from NYU and people from outside the University into their summer classes; see http://itp.nyu.edu/itp/object/ITP_master.html for more information.

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2005 Statistical Highlights
Four Exciting Developments

By Frank LoPresti
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This year has already produced four impressive developments in statistical tools: SPSS Output Management System; The University of California, Los Angeles (UCLA) Academic Technology Services’ website; MIT’s OpenCourseWare; and Minitab Version 14. These new tools are described below, with information on how to access them.

SPSS OUTPUT MANAGEMENT SYSTEM

SPSS Output Management System (OMS) provides an output control function very much like a series of “if” commands; they are turned on and off during the session. Using OMS, you would first create several output files, each with its own format: HTML; XML; SPSS Dataset; or delimited text. You can then choose what SPSS statistical commands will trigger the writing of output to the various files you created.

For example, you could open a file called “anova_out.sav” and, with OMS control, append the output to that file whenever an anova command is run. Since the file is formatted as an SPSS file, the statistics will be written as data, and the tables of Sums of Squares, F, etc., will all be saved as data. Say you have 20 years of weekly data and run similar anova commands on the 20 year groups; the file “anova_out.sav” would have 20 lines of data with the statistics from each of the anovas. The variables in this dataset would be statistics such as Sums of Squares or F—the various statistics created by the anovas.

Visit UCLA’s OMS website, http://www.ats.ucla.edu/stat/spss/faq/oms.htm, for a variety of command syntax examples and other useful information. OMS is included with SPSS version 12 and above; NYU has a site license for SPSS version 13 (and previous versions, if required). See http://www.nyu.edu/its/spss.html for information on acquiring SPSS from NYU Information Technology Services.

![Figure 1. UCLA’s Academic Technology Services’ website offers many useful resources, including this statistical analysis table.](image-url)
UCLA Academic Technology Services' Website

UCLA's Academic Technology Services website cited above (http://www.ats.ucla.edu/stat/) is a rich, public resource for SPSS, SAS, and Stata users, with helpful documentation and links.\(^1\) It also includes a wonderfully useful table entitled “What statistical analysis should I use?” (see figure 1). Using the number and type (categorical or not) of dependent and independent variables you have in your model, you can find the recommended statistical test, and links to examples of how to do the test with SPSS, SAS, or Stata. A discussion of the results and references for further study are also available.

Other resource pages, many of them cross-linked to the indices, include code fragments for advanced users, statistical papers and bibliographies, and organized sections of links dealing in great detail with statistical models. For example, in the “What statistical analysis should I use?” table mentioned above, you could click on the SPSS link for the Repeated Measures test. You could then download the sample data, follow the instructions for running the GLM (General Linear Model) command, then compare your results to those shown on the page. There is also a discussion of the results and links to other code and documentation. The site provides information on the prerequisite knowledge you would need, or, for more advanced statisticians, confirmatory details on the parameters calculated.

MIT's OpenCourseWare

OpenCourseWare (http://ocw.mit.edu/) is “a free and open educational resource for faculty, students, and self-learners around the world” that provides MIT lecture notes, assignments and tests for many courses. Courses useful to quantitative researchers range from introductory to advanced statistics. At the elementary end of the spectrum, for example, is Statistics for Applications, a “broad treatment of statistics.” At the more advanced end is Introduction to Modeling and Simulation, an “overview of modeling and simulation tools, as well as case studies in modeling and simulation.”

MIT President Susan Hockfield states that “through MIT OpenCourseWare (OCW), educators and students everywhere can benefit from the academic activities of our faculty and join a global learning community in which knowledge and ideas are shared openly and freely for the benefit of all.”\(^2\)

OCW, which is funded jointly by the William and Flora Hewlett Foundation, the Andrew W. Mellon Foundation, and MIT, was launched on April 4, 2001. Its mission is to expand access to information to students and teachers around the world, and to counter the trend towards the privatization of knowledge. The site currently offers more than 500 courses, and plans to include 1800 courses by 2008.

The MIT site, along with the UCLA statistics site discussed above, are good examples of the level of maturity the Internet has reached. These sites are not merely academic papers published on a university’s statistics website. They were not simply found by Googling a topic of interest and getting one treatment of a subject out of context. They are organized archives, rich with context, which allow you to step backwards or forwards in a question to learn impor-

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\(^1\) For example, the site points to very handy online SAS documentation at http://v8doc.sas.com/sashtml/.

\(^2\) http://ocw.mit.edu/
tant prerequisites or expert uses. Statistics scholars would be well served to visit these sites often.

**Minitab Release 14**

Minitab, a well-respected 30-year-old statistical package, has just released a new version. It was originally developed at Penn State with contributions from many talented statisticians. Minitab has a feel similar to SPSS or Stata and is used at NYU for several introductory statistics courses. To take a tour of the new release, which offers increased graphics and graphing capabilities and a customizable interface, visit the Minitab website at [http://www.minitab.com/products/minitab/14/](http://www.minitab.com/products/minitab/14/) (see figure 3).

One immediate advantage of Minitab over SPSS, Stata, and SAS is the cost. A semester rental of the student version is available on the Internet for only $30 and is sometimes included with textbooks. By comparison, NYU students can purchase:

- Stata for $130 ([http://www.nyu.edu/gsas/dept/politics/datalab/](http://www.nyu.edu/gsas/dept/politics/datalab/))
- SPSS student version for $200 ([http://www.bookstores.nyu.edu/computer/](http://www.bookstores.nyu.edu/computer/))
- SAS for $75 per year after an initial fee of $175 the first year ([http://www.nyu.edu/its/sas.html](http://www.nyu.edu/its/sas.html))

All of these packages are also available for use at the ITS Third Avenue North computer lab ([http://www.nyu.edu/its/labs/third.html](http://www.nyu.edu/its/labs/third.html)). NYU presently has a site license that allows Minitab to be installed at no cost on University-owned computers. Minitab does not allow for the easy transfer of datasets between statistical packages, so additional software that facilitates this process (such as StatTransfer) should be installed on the computer to complement Minitab.

Minitab does have certain limitations that prevent it from being as useful as SPSS, Stata, and SAS for packaging, managing and documenting data. Nonetheless, the fact that it is easy to learn Minitab and transfer that knowledge to other programs makes it a good choice for introductory courses.

*If you have questions about any of the resources described here, please send e-mail to: frank.lopresti@nyu.edu.*

**Did You Know?**

**ITS Statistics Forum**

ITS offers a free Statistics and GIS e-mail forum, which distributes occasional news and information of interest to the statistics community. To subscribe, simply send a blank e-mail message from your preferred e-mail address to: subscribe-statistics@forums.nyu.edu. Or, you can subscribe to this and other NYU Forums through NYUHome. To do so, simply log into NYUHome at [http://home.nyu.edu](http://home.nyu.edu), then in the Forums channel (within the Home Tab) click the “Subscribe to an NYU Forum” link. On the page that opens, click the checkbox next to “Statistics,” then click “Subscribe” at the bottom of the page.

**Statistics Classes & Clinics**

Each semester, ITS offers a variety of free statistics and mappings classes for the NYU community. The current listing of classes is available on the ITS website at [http://www.nyu.edu/its/classes/](http://www.nyu.edu/its/classes/).

In addition, the ITS Social Science, Statistics & Mapping Group regularly hosts Friday GIS Clinics, where GIS professionals come to the ITS Third Avenue North computer lab to share their knowledge with NYU attendees. For more information about these clinics and the upcoming schedule, subscribe to the Statistics forum described above, or send e-mail to frank.lopresti@nyu.edu.

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4. For example, the lack of labels for individual values of a variable (i.e., 0 = "Male", 1 = "Female").
ITS’ TOP TEN COMPUTER SECURITY GUIDELINES

As described in the article on p. 9, April is Computer & Network Security Awareness Month. NYU strives to keep our networks as safe as possible, but you still need to take action to help protect your computer and your information.

Take part in this series of events by attending the seminars, reading our security publications, and following the important security guidelines described below.

Detailed instructions for each of these tips is available on the ITS Computer & Network Security website at: http://www.nyu.edu/its/security/guidelines.html.

1. Set an administrator password
2. Download and install all security updates
3. Install and run anti-virus software
4. Consider using a firewall
5. Don’t share your password
6. Do not open unexpected e-mail attachments
7. Create back up copies of important files
8. Turn off your computer when you’re not using it
9. Review the ITS Policies
10. Supervisors and managers should make sure offices have plans for access to files and data for business continuity

If you have questions about computer or network security, please visit http://www.nyu.edu/its/security/, send e-mail to: security@nyu.edu, or call the ITS Client Services Center at 1-212-998-3333.
Join us for the

Technology Open House

April 22, 2005

Co-hosted by the ITS Faculty Technology Center & the NYU Libraries
At the ITS Faculty Technology Center, 35 West 4th Street, 2nd Floor

The Technology Open House will be an all-day conference event with guest speakers, presentations, and demonstrations. All NYU faculty and staff interested in using technology to enhance teaching and research are encouraged to attend!

For more information, including an updated schedule of presenters and registration instructions, visit http://www.nyu.edu/its/ftc/openhouse2005/.

Questions? Contact the ITS Faculty Technology Center at: its.ftc@nyu.edu or 1-212-998-3044.

Breakfast and lunch will be served compliments of ITS and the NYU Libraries!