

# INFORMATION RESOURCES TUTORIAL

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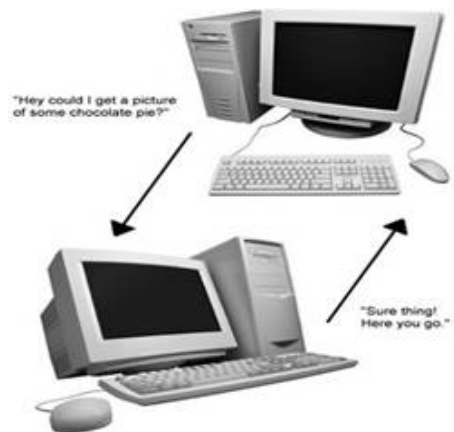
## How the Internet Came to Be

Science fiction writer William Gibson originated the term "Cyberspace" in the early 1980s. His novel *Neuromancer* popularized the term, which refers to a virtual world within a computer network. Picture the Matrix movies here. This term is often used as a synonym for the Internet, although it could refer to any technology that takes the user out of the "real world" for any time. As technology has become more pervasive in everyone's life and we are plugged in all the time, some question the need for a term to distinguish between being online and offline.

The Internet is a means to share information with other people around the world. Most of us think of the Internet as being the World Wide Web (WWW), but it is far more encompassing than that. The WWW is one aspect of the Internet, but it also includes email, newsgroups, Instant Messaging, FTP (File Transfer Protocol), etc. These Internet tools are used to digitally communicate with others using protocols, which tell the various connected devices how to communicate with each other. Protocols and other Open Standards are defined so that anyone developing software can be confident that their product will interoperate with all products that also follow the standards.

The current Internet is a descendant of the ARPANet, which was originally a project started by the Department of Defense in conjunction with UCLA, Stanford, UC Santa Barbara, and the University of Utah. It used a technology called packet-switching, where a message is broken up into many small pieces (or packets), sent through the network, and then reassembled. Many of the basic services we use today, like transferring files and sending messages, were available even back in the 1960s when ARPANet began. Since any kind of communications network is inherently unreliable, the network was designed to be completely redundant. No specific server was in charge, because that would open the network to a single point of failure. All computers on the network were able to communicate with every other computer on the network. More universities and government agencies were added, and it eventually grew to the network we know and use today. It's impossible to know how large the internet is, since there is no central authority that could measure it, besides the fact that it is growing too fast.

A server is set up to share information, and the computers that access data on the server are called clients. It is possible for clients to act as servers and vice versa. For example, think of the peer-to-peer (P2P) networks made famous by Napster and other file sharing programs. These programs allow you to download files from other users while you are letting others download files from your computer, so your computer is acting as both a client (while downloading) and a server (while others are downloading from you) at the same time. Servers can be accessed by many different types of computers from desktops to video recorders like TiVo to cell phones over a variety of networks.



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## Browsing the World Wide Web

The World Wide Web consists of web pages stored on servers and accessed by clients. Each web page is coded in a language called HTML (HyperText Mark-up Language), which tells the web browser how to display the content on the page. The client makes an HTTP (HyperText Transfer Protocol) request and the server returns the requested page. HTTP is the protocol, which is why you see it in the address bar. If you have a secure connection, it will show up as HTTPS, which is a different protocol that encrypts your data before sending it across the network. A secure connection simply means that people other than the receiver are not able to read your message if it is intercepted. As you will read in the following pages, you still need to make sure you are communicating with someone you trust.

Some common web browsers used today are Internet Explorer, Firefox, Netscape, and Safari. There are many others. Most browsers are quite similar, but they do have differences that should be considered when looking for one to use. Internet Explorer is the most common, as it comes preinstalled with Windows, but Firefox is a rapidly growing alternative due to its additional features and security. Safari is the most commonly used browser on Macs. In addition to full computer browsers, many PDAs and cell phones now have mini-browsers that allow them to view web pages. It is becoming more common for websites to provide content that is optimized for the small screens and slow internet connections of such devices.

In order to access content through the Internet, an Internet Service Provider (ISP) is required. Some common ISP connections are a dial-up modem, cable, DSL, and wireless. Dial-up used to be the most common way to get online, but it is being replaced very quickly by the high-speed options that are more available now. Cable and DSL allow users to connect through their cable or phone lines. There are several options available for wireless connections, with the most common being 802.11b/g or WiFi, which is often available at stores, restaurants, hotels, airports, and even some city parks, since the necessary hardware is built into almost all laptops.

## Downloading

Downloading a file means to save a file from another computer and store it on the one you are working on. These files can be documents, installers for other programs, plug-ins, etc. Uploading means to transfer a file from the client you are using to a server somewhere else. When downloading files from the Internet, follow the same rules as when opening an email attachment. Choose whether you want to open or save the file, and when you do save it, remember where you put it and what it is named, and the most important rule - only open something you obtained from a trusted source.

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## URLs

Another name for an Internet address is a URL (Uniform Resource Locator). The URL is typed into the address box of a web browser, and a system called DNS (Domain Name System) translates the domain name into an IP address. The IP address is a unique number (and part of the TCP/IP protocol upon which the Internet is based) that identifies a computer attached to the internet. A domain name such as [www.google.com](http://www.google.com) is easier to remember than 60.102.7.147.

To make the addresses easier to find, conventions are used. For the most part, URLs have an ending that describes the purpose of a site, called the Top Level Domain (TLD). These endings help us classify what a site's address should be. Organizations who design their URL with the appropriate ending help people who search for their page find their official site easier. If you are looking for a site, it is important to know what category the site falls under in order to go to the correct site, e.g. [fbi.gov](http://fbi.gov), not [fbi.com](http://fbi.com).

With this convention in place, when we try to guess a web address we have a better chance of finding the correct site. If we put in the conventional 'www.', followed by the name of the company and the appropriate ending, we should get pretty close. For example, USU's home page is [www.usu.edu](http://www.usu.edu), while the homepage for Yahoo is [www.yahoo.com](http://www.yahoo.com). Big companies will often buy the rights to various sites with similar names to help people find their way to the correct site. Disney did this; they own [www.disney.com](http://www.disney.com), [www.disney.org](http://www.disney.org), and [www.disneyland.com](http://www.disneyland.com). As you will see a little later on, this method of guessing a company's web address is not always the best way to find what you're looking for.

The following are TLDs that can be registered by anyone:

- .com – Commercial (Yahoo, Ebay)
- .net – Network or Communications (Comcast)
- .org – Non-Profit Organization (Dare, CAPSA, GreenPeace)

These TLDs are restricted to entities that can show their site fits in the category:

- .gov – U.S. Government (IRS, CIA, FBI)
- .mil – U.S. Military (Navy, Army)
- .edu – Higher Education (USU, BYU, Gonzaga)

There are several TLDs that have been approved or that are waiting to be approved to provide a new category or to extend a category with only a few good names available. These TLDs are newly approved, so they are not as common:

- .biz – Commercial
- .info – Informational
- .name – Personal
- .pro – Professional
- .aero – Restricted TLD for aerospace industry
- .museum – Restricted TLD for museums
- .coop – Restricted TLD for Cooperative Organizations

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URLs can also identify the country of origin if outside of the United States. These country TLDs are standard two letter codes, and every country has one. A few of these abbreviations are:

- .ar - Argentina
- .br - Brazil
- .it - Italy
- .ru - Russia
- .uk - The United Kingdom

There are several small countries that have been able to profit off selling the rights to use their country's TLD, since it is a commonly used acronym. The most well-known is probably Tuvalu (.tv), which is used by several TV stations. Others include Armenia (.am), Micronesia (.fm), Congo (.cd), and Djibouti (.dj) for music- or radio-related sites.

The .com TLD is designed to make money. They might sell products like amazon.com, or they might sell information for solicitors. This TLD is probably the most abused, since it is the most common. It is often the first TLD typed in, even if a site does not have a commercial purpose. Many times these sites are the opposite of what you are looking for since the creators know that people may type in their address, because they add the .com out of habit. A good example of this is whitehouse.com. The White House is controlled by the government so using the convention described previously, the correct site is whitehouse.gov. The URLs whitehouse.com, whitehouse.org and whitehouse.net have switched around several times. These domains may change hands and change content, so be careful. Always know who you are dealing with before submitting any personal information, no matter how legitimate a site appears to be.

The country radio station KIX 96, based in Logan, is a good example of registering a web address in a misclassified TLD. Since the domain www.kix96.com was already taken by another country music station in Georgia, they used www.kix96.org, even though they are not a non-profit organization. They later changed the address to www.kix96.fm, taking advantage of Micronesia's country code becoming available.

A safer way than simply guessing to search for a site is to use a search engine. By doing so, you will be given a list of sites to choose from. There may be quite a few, but you will at least know more about where you are going before you get there. Sort through the list and see which one matches what you are looking for and you can have a better chance of finding what you are looking for.

## Cache and Refresh

The web is very dynamic and web pages can change on a daily basis. When you look at a web page, the information on that page is stored on your computer in temporary Internet files called cache. When you look at a web page, the computer first looks in its cache to see if you have been to that page before. Since the cache is on your local machine, it is much faster to load the page from here than from the distant server. However, if the page has changed recently, you won't see the changes. To load the page from the server so you can see the latest version, click the Refresh button. Depending on your browser, you may need to hold down the Control key while you refresh to force it to load the page from the server instead of from cache.

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## Searching the Internet

Search engines are useful when trying to find information about specific subjects, but you don't know what URL to start with. For example, if you were looking for information about the cotton gin, you could go to a search engine and type in key words for your search. In our case "cotton gin" would be our key words. By typing in the specific key words, it is possible to find the information you want.

Search engines search existing web pages all over the Internet for the word or words you typed in. If it finds a match it will display a linked title of the web page, a brief description, and the web address on the screen. Read each short description to help you determine if that site may be useful to what you are trying to find.

Some of the most commonly used search engines are [www.google.com](http://www.google.com), [www.ask.com](http://www.ask.com), [www.yahoo.com](http://www.yahoo.com), and [www.dmoz.org](http://www.dmoz.org). Google and Ask use programs called spiders that follow links on the pages they visit and catalog content automatically. This gives more results, because the spider can catalog sites faster than humans can. This also leads to possible abuse if someone figures out how the spider works. For example, Google used to link to George W. Bush's biography as the top result for the search "miserable failure" because many people linked to that page using those words, but they have since altered the algorithm.

Yahoo! and DMOZ are directories compiled by humans. Yahoo! actually looks through its own content first; if it does not find anything, it returns results from Google. Both types of search engines have their strengths and weaknesses. You should be familiar with both so you can effectively use either, depending on what you are looking for.

Once you find a page that appears to be relevant to your search, you should always assess the reliability of that site. Who are the authors of the content? What is the overall purpose of the site? Were you referred by someone you trust to that site? It may be helpful to even use tools available on the internet, such as [dnsstuff.com](http://dnsstuff.com), to find who owns or controls a domain. As technology has advanced, it has become easier for anyone to publish information for others to see. Be careful as you click on links, as you may start on a site you know and trust and end up on another site with questionable content.

Google has the ability to limit a search to a certain site or group of sites. Enter the following terms in google, not including the quotes, and see the difference between the results you get: "ethics", "ethics site:edu", "ethics site:usu.edu", and "ethics site:cil.usu.edu".

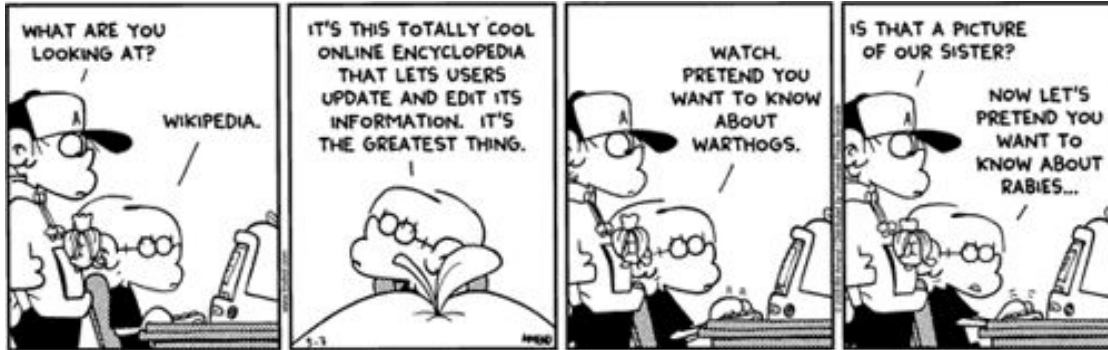
Two relatively new technologies that make it easy for anyone to publish information to the internet are Wikis and Blogs. A Blog (short for Web Log) is a type of journal, usually run by one author that allows them to post their own content or link to other interesting sites and often contains a section that allows visitors to post their own comments. A Wiki (Hawaiian for quick) is a community site (that may or may not require a username and password) that can be edited using a web browser. It is up to the community to watch for abuses and misinformation, with the idea that the site will become better with more contributors.

One of the most well-known wikis is [wikipedia.com](http://wikipedia.com), which has been talked about quite a bit because of some high profile situations that have magnified the inherent weaknesses in this type of community effort. Because anyone can edit the site, malicious information can be easily added with little fear of repercussion. Truthful information that reveals shady details about a political candidate's past may be removed by zealous volunteers around election

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time. When looking at information on wikipedia or other sites that anyone can post to, always check that the authors have backed up any claims they have made with links or references to their sources. If unsubstantiated claims are made, it is up to the reader to determine what to believe. Don't be the one that says, "I read it on the Internet, so it must be true."



## Email

If you are a USU student, you can acquire a USU email account. Go to the following page, <https://barney.usu.edu/compserv/newuser.html>, and fill out the application form. This will take about ten minutes.

### *How to log into USU WebMail*

To log into your WebMail account, go to the WebMail login screen for USU (<http://webmail.usu.edu>). Enter your Username and Password and then click the Login button. A screen will display a list of messages in your Inbox.

### *Sending an Email*

To send an email, click the Write Message button at the top of the screen. This will open the Create Message screen. There are four boxes at the top where information can be entered.

In the **To:** box, type the address of the person for whom the message is intended. An example of an email address could be [someone@cc.usu.edu](mailto:someone@cc.usu.edu) or [someone@yahoo.com](mailto:someone@yahoo.com). If the message needs to be sent to multiple people, multiple email addresses can be entered by separating them with a comma and a space. Depending on your email provider, you may have to separate addresses with semicolons.

**Cc:** stands for carbon copy. If an email address is entered into this box, a copy of the message will be sent to that address. The original recipient will be able to see the email addresses for everyone who received a carbon copy of the message. This feature is often used in the business world. For example, if someone wanted to send a message to a co-worker, and wanted the co-worker to know this same message was sent to the boss, then the boss's address would go in the Cc: box. The boss would see that he was only sent a carbon copy and know that he does not need to reply to the message.

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**Bcc:** stands for blind carbon copy. Bcc: is similar to Cc: except the recipients in the To: box do not see the email addresses of those in the Bcc: box. In the case above, if the employee used Bcc: instead of Cc:, the co-worker would not know the boss also received a copy.

The **Subject:** box is for a short description of the email to be used by the sender or receiver later to easily find the email. It is a good idea to set this to something descriptive but concise to help you find it later if you need.

The **Message:** box lets you enter the actual text you are sending to the recipient. Some email providers allow only text in the message box, but more and more include the option for graphics or pictures. This is generally a bad idea, as some recipients may not be able to open the content if their email provider can't handle the graphics. Check your message carefully for spelling and grammar. If you are in a feisty mood, save your email draft until the next day. If you think it still looks appropriate after you have cooled off, go ahead and send it. Very little communication via the internet or similar networks can be withdrawn after it has been sent. Also keep in mind as you are writing that the recipient does not have the benefit of body language and the tone of your voice to help understand your meaning. Although not always appropriate for professional communications, emoticons, text-based smiley or frowning faces, can help the reader interpret your message. The same sentence with and without a :) could have two totally different meanings.

## *Attachments*

Email is a simple way for people to communicate. Because the messages are usually limited to simple text, attachments may be used to send a data file along with the email. This could be a picture, a music file, a spreadsheet, a Powerpoint presentation, etc. In most email applications, the attachment symbol is a paperclip, but it could be something else like a little disk.

## *Opening an Attachment*

After receiving an email with an attachment you will see the name of the file at the bottom of your email (or the top if you use a different email provider). If you click on the name of the file, your computer will most likely ask you if you would like to open the file or save it to your computer. If you choose open, you will be able to see the file, but it will be gone if you close it. If you choose save, choose a location on your computer where you will be able to find the file later. The desktop is a common choice for saving the file temporarily, as it can be easily found and then moved later if you wish to save it permanently. After saving, you can open the file and work with it like any other file on your computer.

## *Sending an Attachment*

Attaching a file to an email requires only a little more effort than sending an email. To attach a file to an email message, click on the Attach button in the Create Message screen. You will have to browse to the location of the file you wish to attach and then double click the file or highlight it and click Open. More than one file may be attached to an email by repeating the procedure described above, although you should be careful to not load too many attachments to an email. A lot of small attachments or even one big one could cause your message to be returned to you for being too large.

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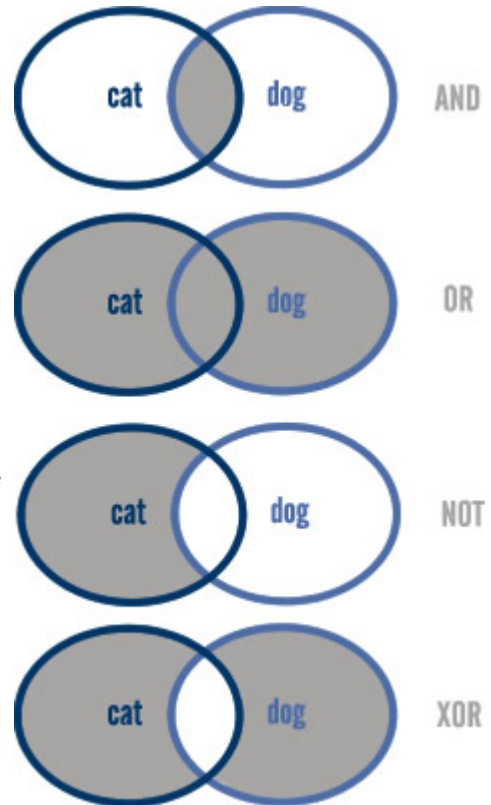
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## Library Search Methods

A Boolean Operator is used to refine a search. Computers generally don't do very well at guessing what you are asking for, so using the Boolean Operators AND, OR, NOT, and XOR will help you get just what you want in your search results.

cats AND dogs  
cats OR dogs  
cats NOT dogs  
cats XOR dogs

- AND means that both the words must be present in order for the record to be displayed.
- OR means that either one or the other word or both words must be present.
- NOT returns results that contain the first word, but drops any of those that contain the second word.
- XOR includes results that contain one word or the other, but excludes those results that contain both.



Most of the time **AND** and **OR** will get you what you need. **NOT** and **XOR** are less commonly used, but very helpful in the appropriate situation. When trying to decide between **AND** and **OR**, think about whether the search will work if you only had one of these words or if both are necessary. If you need both for the search to make sense, use **AND**. If either term by itself is sufficient, use **OR**.

For example, in order to narrow down our search for **music** we could search for **pop music**. Because we have more than one word we are searching for we must use a Boolean Connector. If we search for **pop or music** we might find books about **soda pop** or **classical music**. That is because only one of the words needs to be found. If we search for **pop and music**, we would only find matches that have both words somewhere. It still might not be exactly we want but it will narrow down the search considerably.

By enclosing the search terms in quotes, many search engines will treat the words as a phrase, so **"pop music"** would return only results where that exact phrase appears.

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## Library Resources

Although many people these days simply jump on the internet and use Google to research a topic, web sites are only one of many resources available to find information. Google and other search engines quickly find good, current, usable information, so students often rely on those websites they find rather than some of the resources available through the library, which can usually provide even better information. The web has its strengths, in quickly publishing information on a variety of topics; however, it is often difficult to determine the credentials or sometimes even the identity of an author. Information found on the web should be double checked with another resource.

The two main library tools you will use to find information are the library catalog and the journal databases. Anytime you are looking for a book on a given subject or by a given author or for a specific journal article for which you have a citation, use the library catalog. The journal databases like EBSCOhost or Academic Search Premier are useful for finding high quality articles on a given topic. The following is a list of resources you might find and how they would be useful:

- Books
  - General background or in-depth study of a topic
  - May be out of date, due to turnaround time in writing and publishing
- Scholarly Journals
  - High quality, in-depth research on a specific topic
  - Peer reviewed by experts in the field
- Popular Journals, Websites, Magazines and Newspapers
  - Current news, editorials and opinions
  - May be biased or based on incomplete information, not peer-reviewed
- Reference Books such as encyclopedias, dictionaries, almanacs
  - Provide good background to get familiarized with a topic
  - Does not provide in-depth, current coverage

## Citations

*The Ethics tutorial talks about why you should always cite your sources. For the Information Resources tutorial, we will focus on how to read a citation.*

The following are elements found in the various resources you may need to find:

- Books
  - Examples:
    - Trillin, Calvin. Family Man. New York : Farrar, Straus and Giroux, 1998.
    - Valenzuela-Zapata Ana Guadalupe, Gary Paul Nabhan. *Tequila! : a natural and cultural history*. Tucson : University of Arizona Press, 2003.
  - One title, either underlined or italicized
  - Name and location of the publisher
  - Author(s)
  - Copyright or publication year
  - May or may not include page numbers

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- Print Journal Article
  - Examples:
    - Gray, S.; Watts, S.; Debicki, D.; Hore, J. "Comparison of kinematics in skilled and unskilled arms of the same recreational baseball players." Journal of Sports Sciences 24. 11 (2006): 1183-1194.
    - Blau, Benjamin M., Bonnie F. Van Ness, Robert A. Van Ness. "An Analysis of Short Selling in NYSE-listed Securities." *The Journal of Trading* 1. 4 (2006).
  - Two titles
    - Article title, usually in quotation marks
    - Journal title, either underlined or italicized
  - Author(s)
  - Publication year
  - Volume and Issue numbers
  - May or may not include page numbers
  
- Online Journal Article
  - Examples
    - McCurry, Justin. Monitoring Japan's aid commitments. Lancet 368. 9547 (2006): 1561-1562. Academic Search Premier. EBSCOhost. Utah State University Library <<http://search.ebscohost.com>>.
    - Glazer, S. (2006). "Video games." *CQ Researcher*, 16, 937-960. Retrieved November 9, 2006, from CQ Researcher Online, <http://library.cqpress.com/cqresearcher/cqresrre2006111000>.
  - Two titles
    - Article title, usually in quotation marks
    - Journal title, either underlined or italicized
  - Author(s)
  - Publication year
  - Volume and Issue numbers
  - May or may not include page numbers
  - Name, URL, and access date of online database where the article was found
  
- Newspaper Article
  - Examples
    - Benson, Lee. Top lawyer sees need — not color. Deseret Morning News 10 Nov 2006.
    - Benson, Adam. "Blessings, blisters counted at end of 500-mile anti-war walk." *The Herald Journal* 97. 309 (5 Nov 2006): A1.
  - Two titles
    - Article title, usually in quotation marks
    - Newspaper title, either underlined or italicized
  - Author(s)
  - Publication year, month, and day
  - May or may not include page and section numbers

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- Web Page
  - Examples
    - Monument Honors World War I Aviation Hero. 2006. Utah State University, Utah State Today. 10 Nov 2006.  
<<http://www.usu.edu/ust/index.cfm?article=11440>>.
    - Schmid, Patrick and Bert Töpelt. "Game Over? Core 2 Duo Knocks Out Athlon 64." 2006. Tom's Hardware. 14 Jul 2006.  
<[http://www.tomshardware.com/2006/07/14/core2\\_duo\\_knocks\\_out\\_athlon\\_64/](http://www.tomshardware.com/2006/07/14/core2_duo_knocks_out_athlon_64/)>
  - Title and URL of web page
  - Date page was accessed
  - Date of copyright or last update
  - Publisher and author, if available

## Searching the Catalog

The Library catalog contains information on where books and journals are located in the library. Always use the catalog when you are looking for a book. If you know exactly what journal you are looking for, you will also want to use the catalog. Use the journal databases if you are looking for articles on a topic. [<http://library.usu.edu/main/inabs/index.php>]

If you are searching for a book and know the author or title, use the author or title search in the library catalog. Use the Basic keyword search if you are looking for books about a topic. This will search in any field for the keywords you enter. The Subject Heading search looks only in the Subject Heading field. The Availability tab lists if multiple copies of a book are available and where they are located.

If you are searching for a journal article, and know the name and year or volume it is located in, search in the library catalog using a Journal Title search. Go to the Availability tab, and you can find and request any volume of the journal that the library owns. Next to the volume number, the dates that are included in that volume are listed.

### [Information systems journal.](#)

<a href="#">Subscription Summary</a>	<a href="#">Availability</a>	<a href="#">Title Info</a>	<a href="#">Links</a>
Automated Storage, Journals	In 2nd floor BARN: 1. Click "Items Available" tab, then 2. Click "Request Item" icon.	Q 350 .J682	Checked In v. 4, 1994  Request Item
Automated Storage, Journals	In 2nd floor BARN: 1. Click "Items Available" tab, then 2. Click "Request Item" icon.	Q 350 .J682	Checked In v. 5, 1995  Request Item
Automated Storage, Journals	In 2nd floor BARN: 1. Click "Items Available" tab, then 2. Click "Request Item" icon.	Q 350 .J682	Checked In v. 6, 1996  Request Item
Automated Storage, Journals	In 2nd floor BARN: 1. Click "Items Available" tab, then 2. Click "Request Item" icon.	Q 350 .J682	Checked In v. 7, 1997  Request Item