Akron-Summit County Public Library
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Electronic Services Division
60 South High Street, Akron, OH 44326

Basic Home Computer Maintenance Tips

The Importance of Computer Maintenance

Why?

Automobiles need oil changes and lawns need mowed. We perform maintenance on lots of things everyday – why should your computer be any different? To get the maximum performance from your computer you should perform regular maintenance tasks.

How?

The following pages will outline the steps necessary to perform tasks such as Disk Defragmenter, Disk Cleanup, Backup, and more.

When?

Each task can be performed on as needed basis or on a fixed schedule. Most tasks need to be completed every 2-4 weeks for optimal computer performance.

Scandisk	Internet Cookies
Disk Defragmenter	Temporary Internet Files
Backup	Recycle Bin
Disk Cleanup	Physical Maintenance

Scandisk

ScanDisk is a disk analysis and repair tool that checks a hard disk drive for errors and corrects any problems that it finds.

Definition: The hard drive is what stores all your data. It houses the hard disk, where all your files and folders are physically located. A typical hard drive is only slightly larger than your hand, yet can hold over 100 GB of data. The data is stored on a stack of disks that are mounted inside a solid encasement. These disks spin extremely fast (typically at either 5400 or 7200 RPM) so that data can be accessed immediately from anywhere on the drive. The data is stored on the hard drive magnetically, so it stays on the drive even after the power supply is turned off.

The term "hard drive" is actually short for "hard disk drive." The term "hard disk" refers to the actual disks inside the drive. However, all three of these terms are usually seen as referring to the same thing -- the place where your data is stored.

Why use it?

If the power goes off, a program crashes, or you simply turn the computer off without going through the proper shut down procedure, the drive information tables may be damaged. When this happens, it is essential that the computer be allowed to repair the files before they are accessed during normal use.

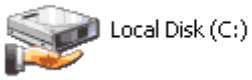
Normally the next time you restart your computer after any of the events above the computer will automatically start ScanDisk.

To check for errors *manually* on your hard drive with **Scandisk**:

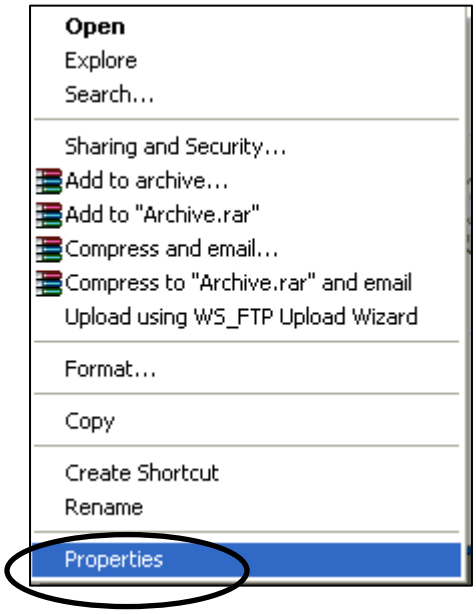
- Open **My Computer** by double-clicking the **My Computer** icon on your desktop. **My Computer** window will open and then right-click on your **C: drive**.

OR

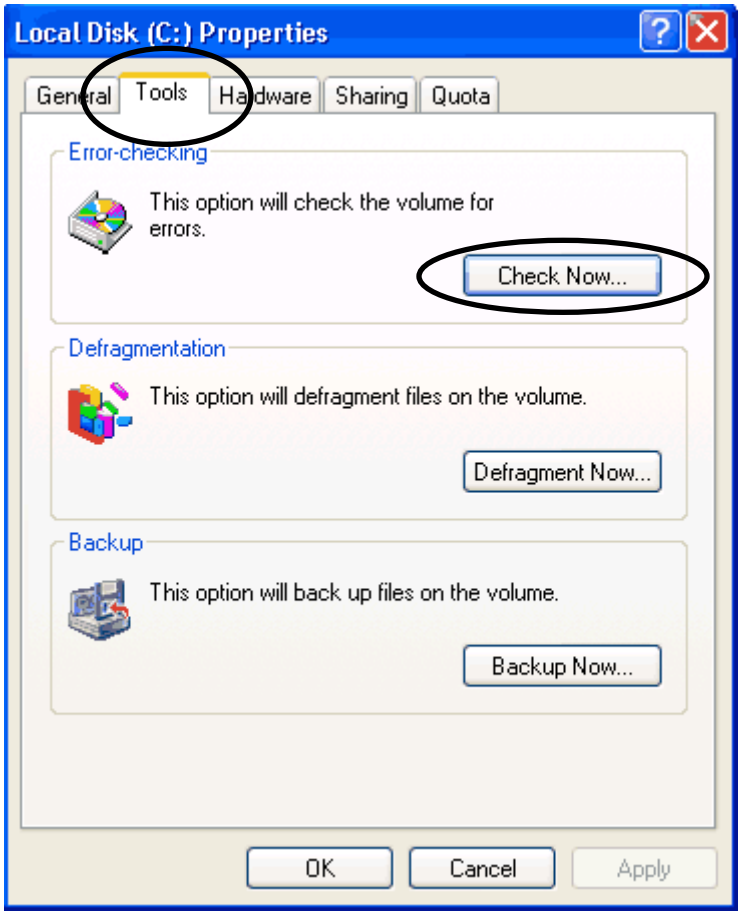
- Click on **Start** and click on **My Computer** in your **Start** menu. **My Computer** window will open and then right-click on your **C**: **drive**.



- Select the **Properties** option.



- Choose the **Tools** tab.



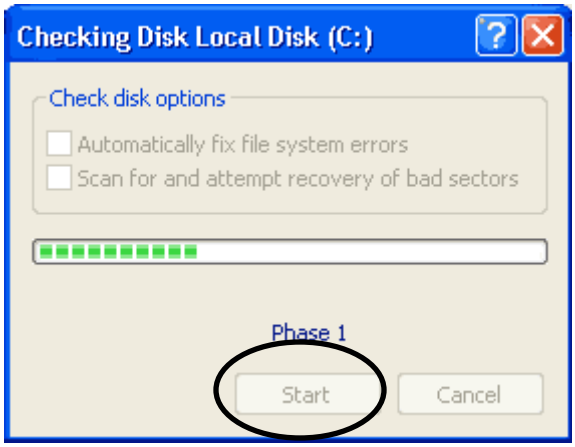
You will see three options:

1. Scandisk (Error-Checking)
2. Defragmentation
3. Backup

The best thing to do first is to check for errors. This is because if you try to defragment your drive and it hasn't been checked for errors, you'll have to do that anyway. Checking for errors is a quick process that will scan the surface of your disk looking for inaccuracies.

- Click the **Check Now** button under the Error-checking section of the Properties window. The Checking Disk window will open.

- Clicking **Start** will start the ScanDisk.



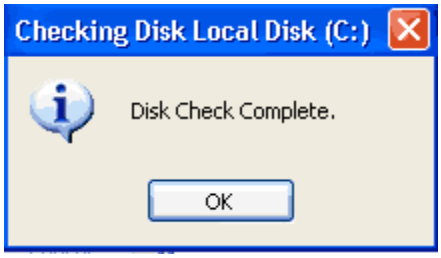
Options:

- *Automatically Fix File System Errors* – Windows XP will attempt to repair file system errors found during disk checking.
- *Scan For and Attempt Recovery of Bad Sectors* – Windows XP will attempt to repair file system errors found during disk checking, locate bad sectors, and recover any readable information located in those bad sectors.

Note: Both options are intensive and require that all running programs be closed (including disabling anti-virus and screen savers) and will cause ScanDisk to run on start-up only. As a result this message box will open:

Click **Yes** if you would like to choose these options and **Restart** your computer.

If you do not select any options you can run ScanDisk immediately. Once this process is completed you may have fixed some errors or simply had some sections of your disk marked off so information won't be stored in a corrupt section. You will receive a message when the ScanDisk has been completed.



If errors are found ScanDisk may offer to correct them. Choose **Yes** and then you can close the program.

It is recommended that you choose the extra options if a program crashes or your data has become corrupt. Otherwise you can skip the extra options and run ScanDisk immediately for improper shutdown or power failures.

Disk Defragmenter

Defragmenting your hard drive is a long process but it is also a very important one since it can speed up your computer and gain disk space by reorganizing the files on your drive.

Why use it?

When you save files or add programs to your disk, the file system finds the first available space that is large enough to hold the files. When you delete programs or files they are taken out of wherever they may be on the drive. So what happens is that as time passes and files are created, saved, and installed - as well as erased - deleted gaps of various sizes appear on your disk. Defragging will compact the files on your disk to fit better at the front of the drive. When the disk defragmenter is done, it's easier and quicker for the computer to access the files, and you save all of that space that was in little tiny bits here and there on your disk. In other words, your computer will run faster!

How often?

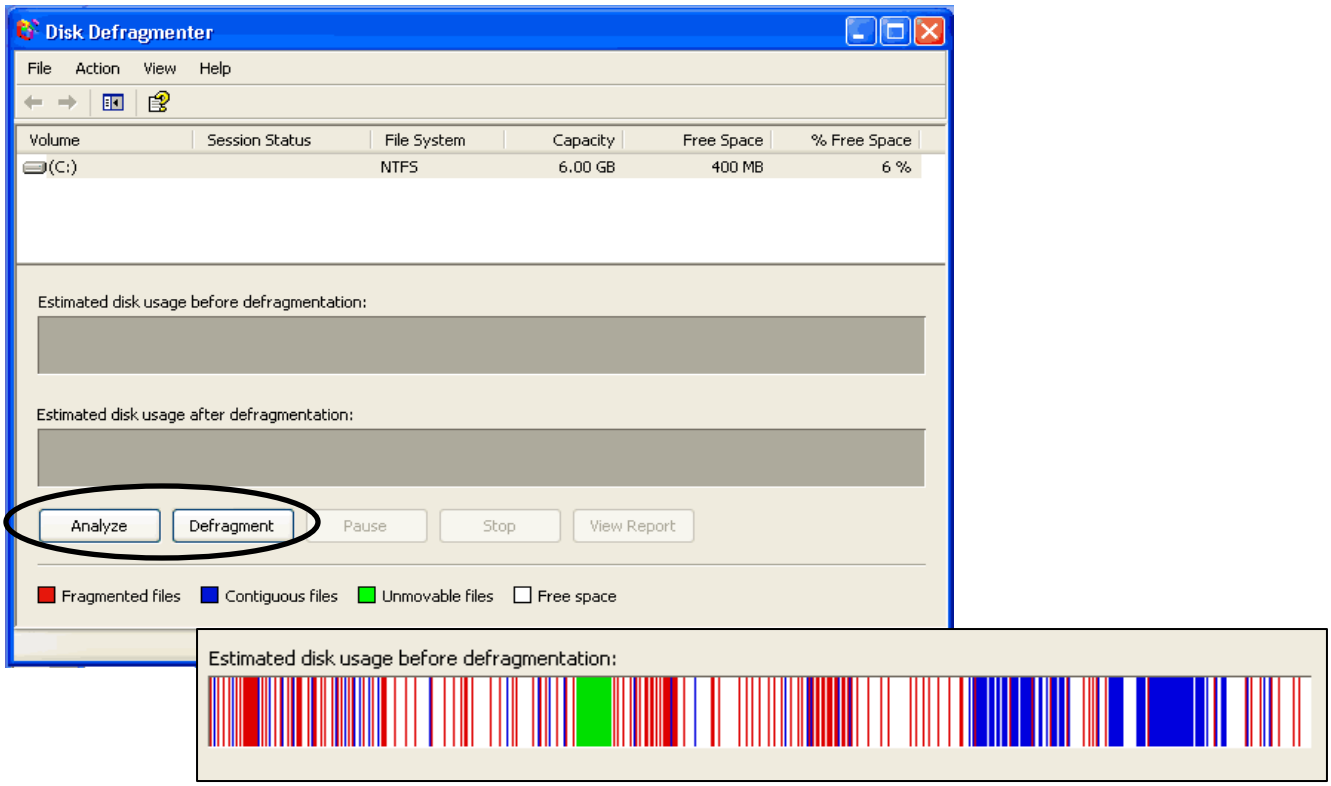
It is recommended that you run this program once a month. If the drive does not need to be defragmented the system will inform you that the task does not need to be run at that time.

To defragment:

- Stop all programs that are running. By having programs running (including disabling anti-virus and screen savers) while you try to defragment your disk will cause the defragmenter to restart over and over again.
- Open **My Computer** by double-clicking the **My Computer icon** on your desktop. **My Computer** window will open and then right-click on your **C**: **drive**.

OR

- Click on **Start** and click on **My Computer** in your **Start menu**. My Computer window will open and then right-click on your **C: drive**.
- Select the **Properties** option.
- Choose the **Tools** tab.
- Click on **Defragment Now…**
- Click the **Analyze** button. The system will analyze the drive and recommend whether or not you need to defragment.
- If Yes, start running the program by clicking on **Defragment**.



When the defragmentation has started you will see a graphical interpretation of you disk in the area labeled ‘Estimated disk usage before defragmentation’.

Note: Defragging is a good thing to do overnight or when you know you won’t be using your computer for an hour or two. The first time you defragment will be the one that takes the longest, if you do it every month thereafter it will take a much shorter amount of time.

Backup

This program allows you to backup the data on your computer to a removable storage device.

Why us this?

The Backup utility helps you protect your data if your hard disk fails or files are accidentally erased due to hardware or storage media failure. By using Backup, you can create a duplicate copy of the data on your hard disk and then archive it on another storage device, such as a CD or floppy disk. If the original data on your hard disk is accidentally erased or overwritten, or becomes inaccessible because of a hard-disk malfunction, you can easily restore it from the disk or archived copy.

How often?

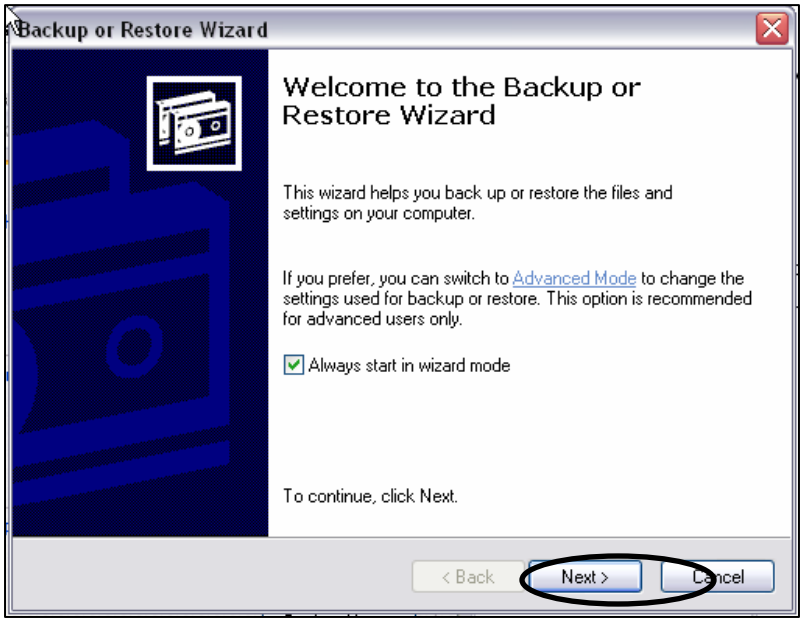
This process can be repeated as needed. For example, if you have completed an important project you may decide to backup your data to preserve your data.

To start the back up process:

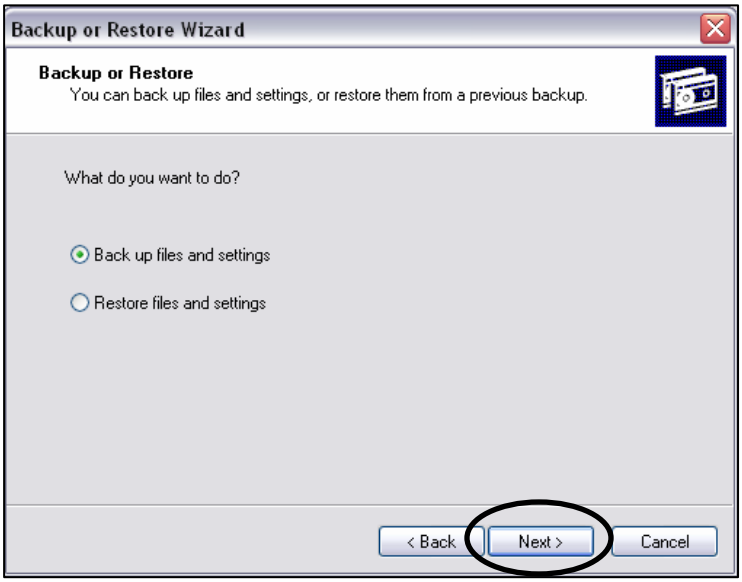
- Open **My Computer** by double-clicking the **My Computer** icon on your desktop. **My Computer** window will open and then right-click on your **C: drive**.

OR

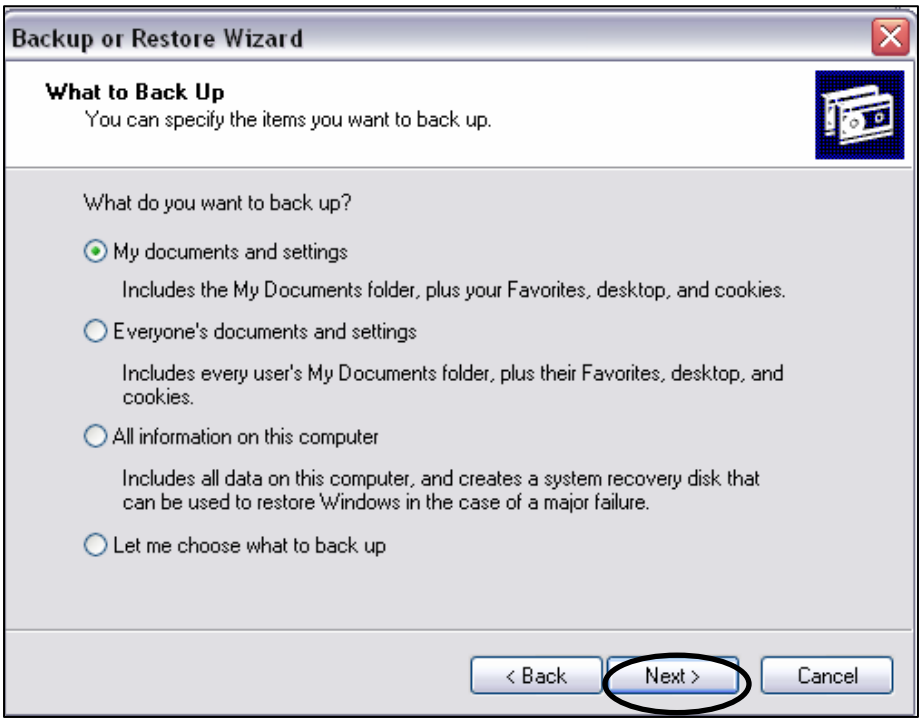
- Click on **Start** and click on **My Computer** in your **Start** menu. **My Computer** window will open and then right-click on your **C**: **drive**.
- Select the **Properties** option.
- Click on **Backup Now**. The Backup or Restore Wizard window will open.



- Click **Next** to continue. The first option allows you to backup files and settings. Click **Next** to continue.

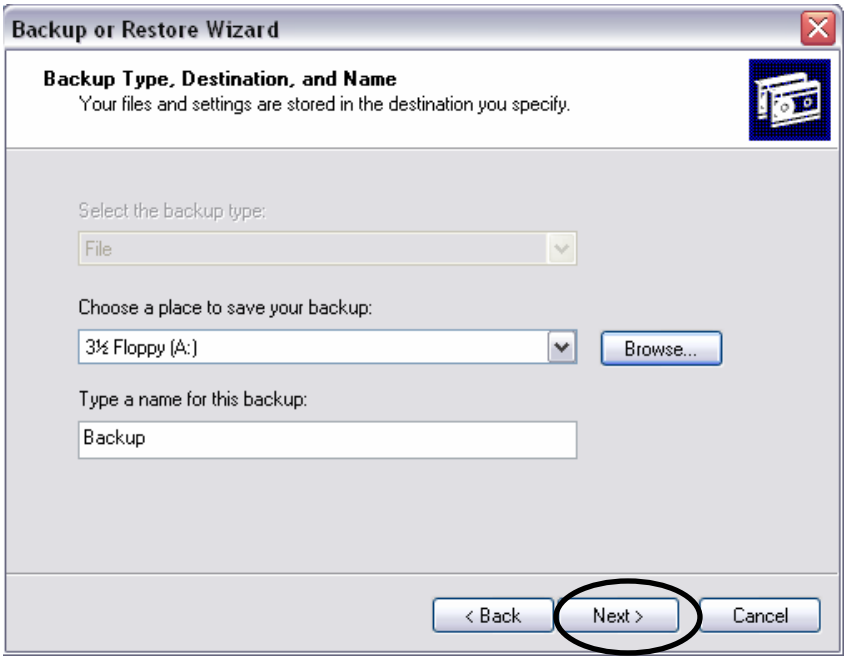


- You now have to choose what you want to back up. Click **Next** to continue.
    - **My documents and settings** – backs up a copy of your My Documents folder, Internet Favorites, desktop settings, and current Internet cookies.
    - **Everyone's documents and settings** – backs up the same items listed above except for all of the computer's user accounts.
    - **All information on this computer** – backs up a copy of all data (documents & settings) for all users as well as the Windows operating system files to be used if your system should crash at a later date. It will not help if your hard drive dies.
    - **Let me choose what to back up** - allows you to choose which files you back up.



- Choose a location to save your backup to (i.e. floppy disk in A: drive, D: CD ROM). Once you have designated where you want to save your backup click **Next** to continue.

Note: When choosing storage media for your backups keep in mind that a floppy disk (1.44MB) will hold approximately 600 pages of text. It is recommended that you if backing up large amounts of data (i.e. pictures, movies, all data on computer) to use a CD (700MB). There are two types of CD, a CD-R allows you to save data to it one time whereas a CD-RW allows you to add, change, or delete data as needed.



- The final screen will display the settings and storage media choice you made. Click **Finish** to execute the backup.
- Once the process is completed place your backup storage media in a safe place. You will want to label your media so that you will be able to identify it's contents later (i.e. expense reports 2006).

Restoring Backup Files

To restore your files navigate to the Backup Wizard:

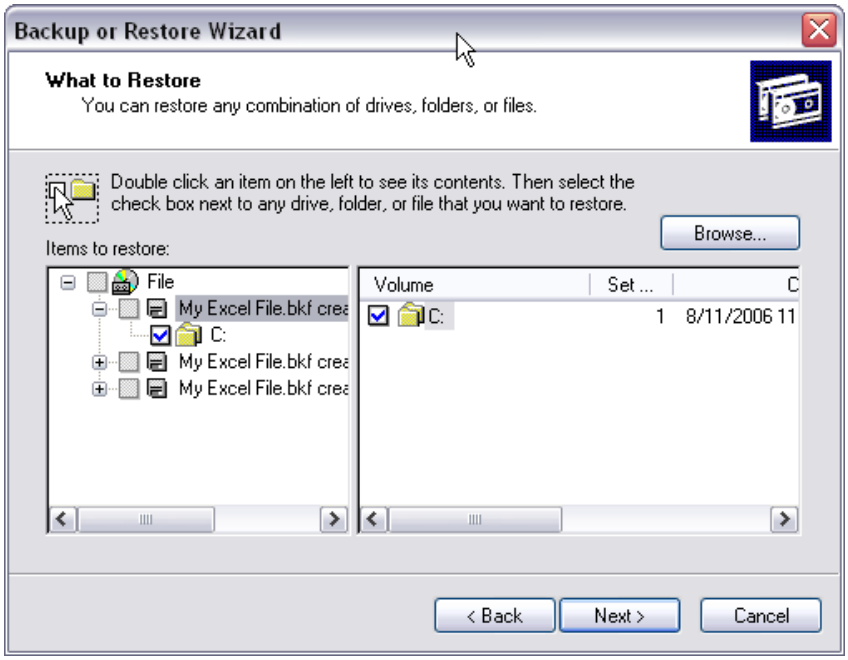
- Open **My Computer** by double-clicking the **My Computer** icon on your desktop. **My Computer** window will open and then right-click on your **C: drive**.

OR

- Click on **Start** and click on **My Computer** in your **Start** menu. **My Computer** window will open and then right-click on your **C**: **drive**.
- Select the **Properties** option.
- Click on **Backup Now**. The Backup or Restore Wizard window will open.

Click **Next** on the welcome wizard screen. You will then see the screen with the option to **Restore files and settings**. Click this option and click **Next**.

The **What to Restore** screen appears allowing you to choose the files to restore. Place a check mark next to your selections and select **Next**.



The results screen for your settings will appear. Verify settings and click **Finish**.

Note: For more information on how to access advanced restore methods, go to the Microsoft website URL:

http://support.microsoft.com/?scid=kb;en-us;309340&spid=1173&sid=1213

Disk Cleanup

Disk Cleanup scans your computer for files that can be deleted from your system.

Why use this?

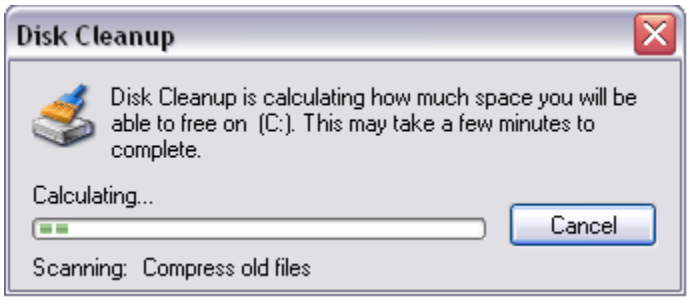
This program allows you to delete your garbage and old internet files. Garbage can consist of items such as temporary installation files or leftover files from uninstalled programs. As these files accumulate on your computer it will eventually cause your computer's performance to slow.

How often?

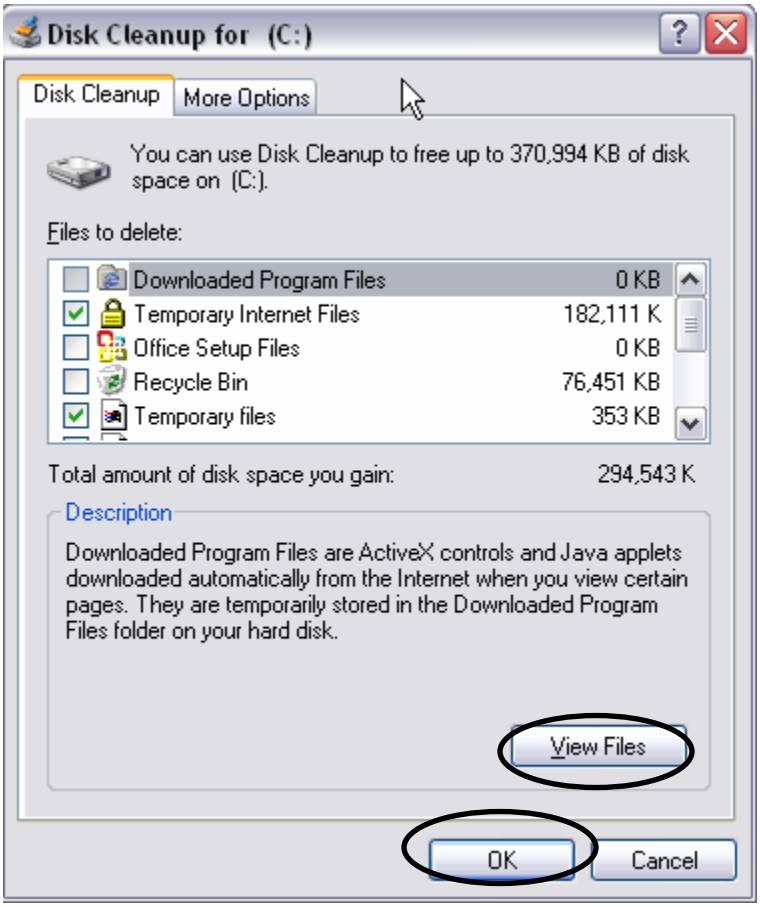
Disk Cleanup should be run every 1 to 2 weeks to erase those files that clog your system.

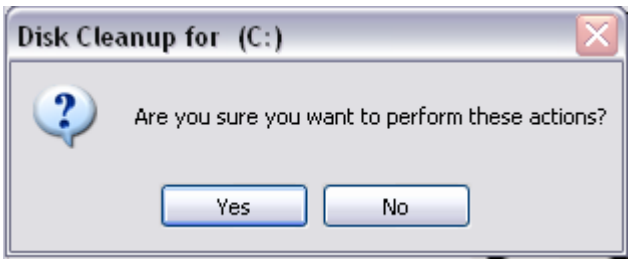
To run Disk Cleanup:

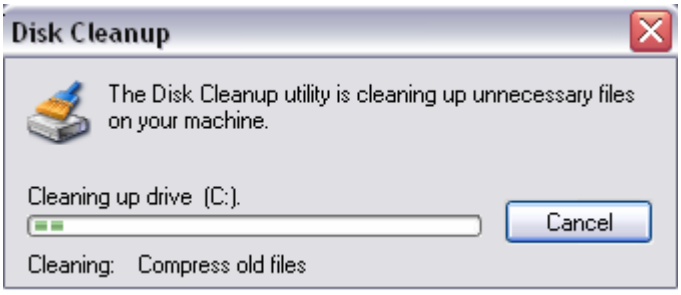
- Click on the **Start menu**
- Click on **Programs**
- Click on **Accessories**
- Click on **System Tools**
- Click on **Disk Cleanup**. The Disk Cleanup dialog box will appear and will immediately start scanning your computer files.



- Once all files are scanned the Disk Cleanup for (C:) dialog box will appear. Select the checkboxes next to the items you wish to delete. You may choose to view your files prior to erasing them. Click **OK** to continue.







Internet Cookies

Cookies are just a way for Web sites to track basic information about your visit to their site by placing small text files on your computer. Most make Web browsing easier by storing site preferences or log-in information. However some sites use them to track your every move on the Internet.

Why delete them?

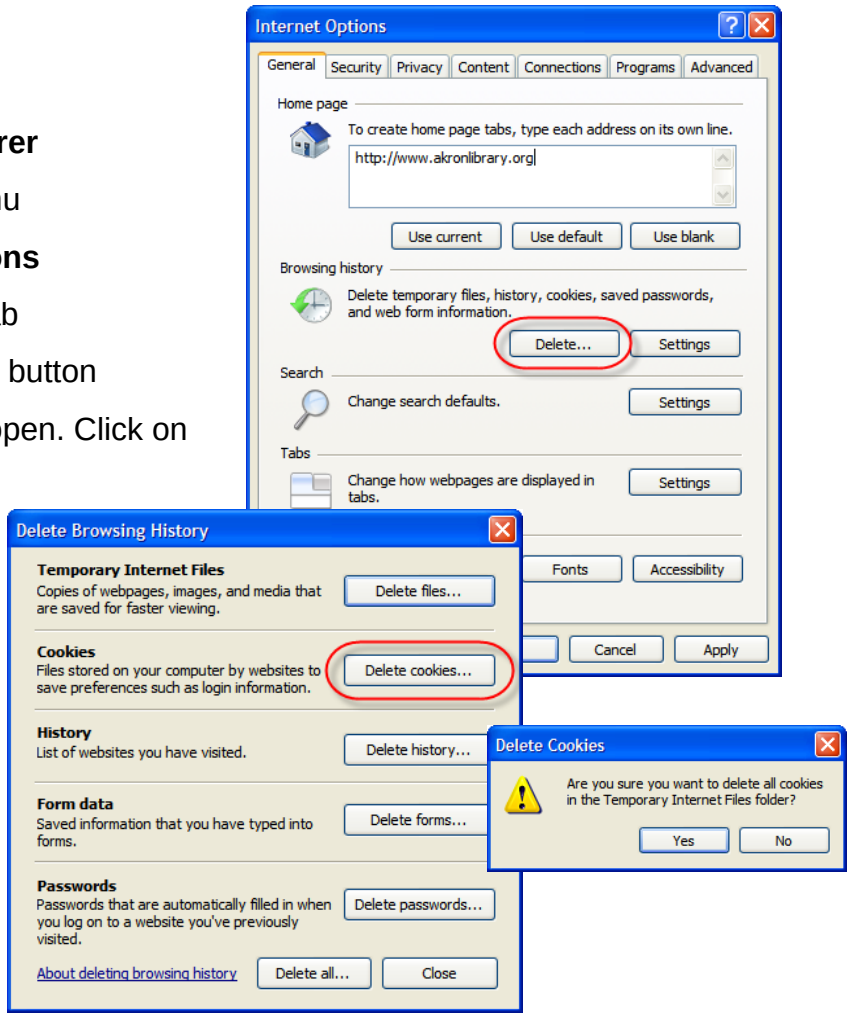
Just as with the Disk Cleanup task previously mentioned, Internet cookies can accumulate quickly and slow down your computer. Deletion can improve your computer speed and can also increase your privacy as you surf the net.

How often?

It is recommended that you delete cookies every 2-4 weeks or more often depending on how much time you spend on the Internet.

To delete Internet Cookies:

- Open **Internet Explorer**
- Select the **Tools** menu
- Select **Internet Options**
- Select the **General** tab
- Click on the **Delete…** button
- Another window will open. Click on **Delete Cookies…**
- It will ask for confirmation. Click **Yes.**
- Click **Close** to close the first dialog box
- Click **OK** to close Internet Options



Temporary Internet Files

Microsoft Windows stores all visited pages on our hard drives including the images. Even after you delete Internet cookies these additional files are still present.

Why delete them?

Temporary Internet files are files that may slow down your computer because they are potentially running on your computer at all times.

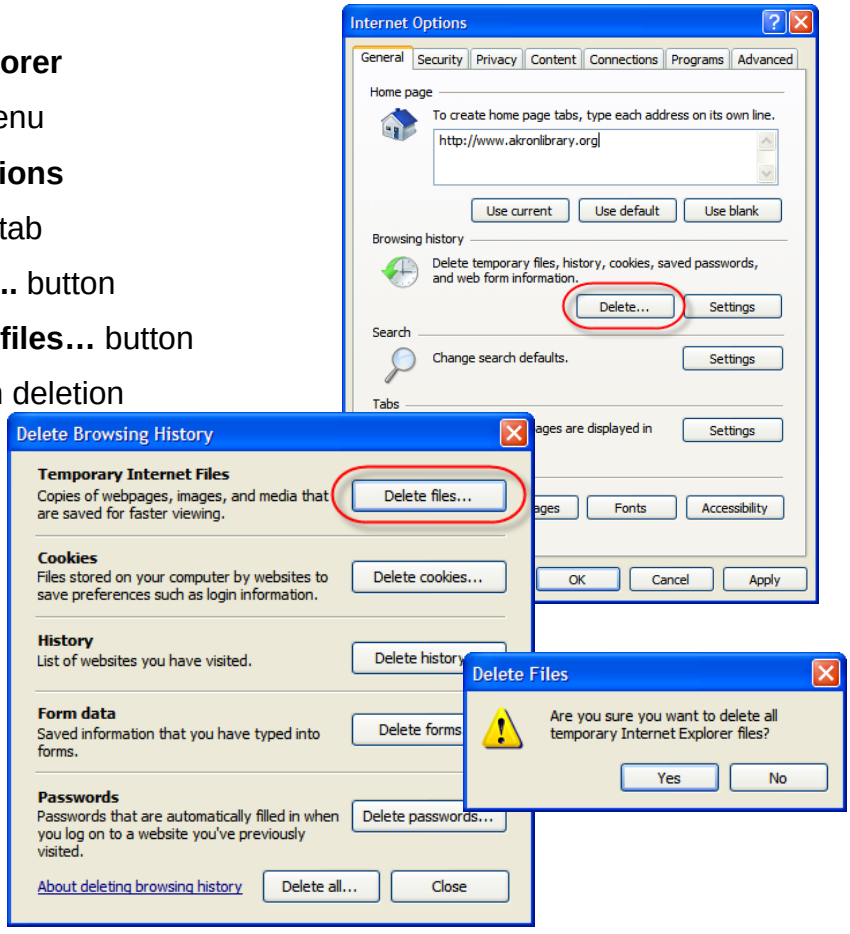
How often?

It is recommended that you delete temporary files every 2-4 weeks or more often depending on how much time you spend on the Internet.

To delete temporary files:

Note: *Make sure that all applications are closed before starting this section*

- Open **Internet Explorer**
- Select the **Tools** menu
- Select **Internet Options**
- Select the **General** tab
- Click on the **Delete...** button
- Click on the **Delete files…** button
- Click **Yes** to confirm deletion
- Click **Close** to close the window
- Click **OK** on **Internet Options** dialog box



Recycle Bin

The Recycle bin is a directory where deleted files are temporarily stored. This enables you to retrieve files that you may have accidentally deleted. From time to time, you'll want to *purge* the recycle bin to free up space on your hard disk.

Why purge it?

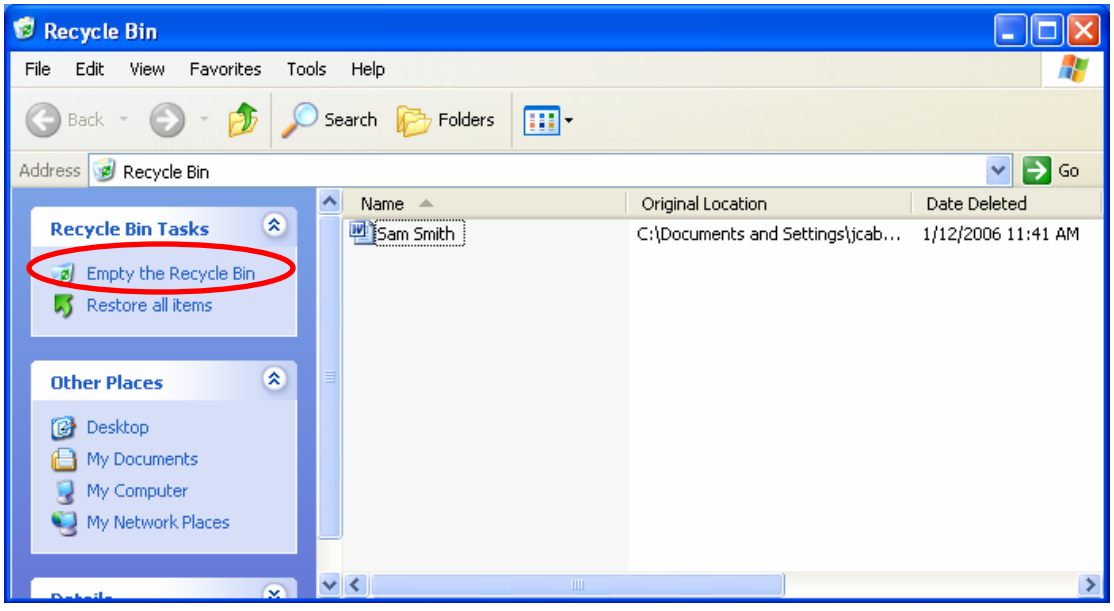
The recycle bin holds most of the items that you delete from your machine. They are not *permanently* deleted until you empty your recycle bin. This can take up valuable hard disk space and slow down your computer.

How often?

You should empty your recycle bin every 2-4 weeks or more often depending on how many items you delete.

To empty the recycle bin:

- Double-click on the **Recycle Bin** icon on your desktop.
- To delete files permanently, select **Empty the Recycle Bin**.
- Press **Yes** to confirm deletion.



Physical Maintenance

There are several tips that can help you to maintain the life of your computer hardware.

Don’t touch the screen.

The oils from your fingers will leave fingerprints that are hard to remove. Avoid touching the screen if you can. To clean a CRT screen, spray some glass cleaner, or a mixture of 50% water and 50% rubbing alcohol, on a lint-free rag, then wipe the screen. Don’t spray anything directly on the screen. To clean an LCD screen use LCD cleaner or cleaning cloths sold at most computer and electronics stores.

Keep drinks and food away from the computer.

This is tough, but one cup of coffee or can of pop can ruin your keyboard. Also crumbs can be a problem. To clean a keyboard, use compressed air, or a small clean paint brush to brush out lint and other debris.

Keep magnets away from your hard drive.

This isn’t housekeeping, but a magnet can ruin your hard drive, so don’t put any around the computer.

Clean the CPU.

Dust and clean your case, paying particular attention to any air intake slots and the power supply fan located at the back of the computer. A soft lint-free towel will do the job or you can use used dryer sheets, "Swipe It" type dusting products, or other cleaning wipes.

Make sure the CPU has room to breathe.

The greatest enemy to your computer is heat. It causes the internal components and chips to wear out. Heat also lowers the performance of your system.

The first thing to check is the ventilation around your system. Many of the standard computer desks force you to place your computer in an enclosed cabinet. If your system is in an enclosed space, cut a hole in the back of the cabinet behind your cooling fan. This will allow it to draw cool air into the system. Your system should have at least 4in of space to the rear, with no clutter, loose paper, etc., to block the flow of air into the computer.

Make sure the top and rear of your monitor are also kept clean and clear of debris. Do not put paper, books, boxes, etc. on top of your monitor. You will notice ventilation slots in the top of the monitor case. This allows the excess heat to escape. If that heat is not released, you can cause excess wear to your monitor's internal electronics. This can create color shifting, screen flicker, and failure.

Resources

Books

A+ certification for dummies. Ron Glister. 2001. Hungry Minds. Call number: 004.16 G561ap

Degunking Your PC. Joli Ballew & Jeff Duntemann. 2005. Paraglyph Press. Call number: 005.446 B191dpc.

Degunking Windows. Joli Ballew. 2004. Paraglyph Press. Call number: 005.446 B191d

PC hardware annoyances : how to fix the most annoying things about your computer hardware. Stephen J. Bigelow. 2005. O'Reilly Media. Call number: 621.3984 B592p

Rescued by Upgrading Your PC. Kris Jamsa, Ph.D. 1996. Jamsa Press. Call number: 004.165J32re

Web Sites

http://www.capsupport.ca/tutorials/main1.shtml

http://www.computerhope.com/tips/internet.htm

http://www.computerhope.com/tips/internet.htm

http://www.uwrf.edu/ccs/training/maintain.htm

http://techruler.com/troubleshooting.html

http://www.ckls.org/~crippel/computerlab/tutorials/

http://www.fatherryan.org/frhsonline/techtips/workstation/main.htm

http://www.internet4classrooms.com/on-line_ibm.htm

http://ww2.nscc.edu/pulliam_g/Useful%20Items/Computer%20Maintenance.htm