

CHAPTER 14

SECURITY, COPYRIGHT AND LAW

Security

Learning Module Objectives

When you have completed this learning module you will have:

- Knew why do you need to back up your computer
- Understood how to organize your computer for more efficient backups
- Understood complete vs. incremental backups
- Understood why you should use 'off-site' storage
- Understood Passwords
- Understood the importance of shutting down your computer
- Understood the importance of UPS
- Knew things computers like
- Knew things to avoid
- Knew what to do if the computer breaks down

Know About the Purpose and Value of Backing Store of Computer Files

- The most important thing that you store on your computer is information.
- Often the contents of a hard disk can represent years of work.
- If the hard disk stops working one day you could lose all those years of work.
- For this reason it is VITAL that you take regular backups of the information that is stored on the computer.



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Know About the Purpose and Value of Backing Store of Computer Files

Why do you need to back up your computer?

The most important thing that you store on your computer is information. Often the contents of a hard disk can represent years of work. If the hard disk stops working one day you could lose all those years of work. For this reason it is VITAL that you take regular backups of the information that is stored on the computer. In large organizations this backup procedure is normally performed automatically by your computer support team, where the data is normally held on a centralized, networked computer.



In smaller organizations, it is often up to the individual to organize some sort of data backup. If nothing else is available, copy your files to a floppy disk and make sure that these backup disks are stored away from the computer, ideally off-site. If there is a fire and your office burns down, if your backup disks are stored next to the computer they too will be incinerated!

Organizing your computer for more efficient backups

When you think about it you have a computer containing many programs and also a large amount of data that you have created, then it is only the data that really needs to be backed up. If you create a folder structure that contains only data then only this directory (plus any sub-directories of this directory) needs to be backed up.

Complete vs. incremental backups

A complete backup means that you backup all the data on your computer. This has the advantage that the entire hard disk can be backed up, but suffers from the disadvantage that this process can take a long time if your computer contains a lot of data. An incremental backup means that once a week you can perform a complete backup, but every night for the rest of the week, you only backup files that have been newly created or modified since the last backup, saving time. With the right backup software, this process is automatic, and normally you only have to select full or incremental.

Know About the Purpose and Value of Backing Store of Computer Files

- **Organize your computer for more efficient backups**
- **Complete vs. incremental backups**
- **Use 'off-site' storage**
- **Beware of 'open files'**



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Why you should use 'off-site' storage?

It is no good backing up your data, only to leave the item that you backed up to next to the computer. If someone steals your computer, it is likely that they will also steal your backups if you have leave them next to the computer! If you have a fire, then again you will lose your backups if the backups are stored next to the computer. Ideally, backups should be stored off-site at a safe location. At the very least, consider storing your backups in a fireproof safe, which will give some protection against fire damage.

Beware of 'open files'

You should perform backups at night. If you backup your computer during the day (when you are using programs on the computer) then any program or data files that are in use at the time of the backup will not be backed up. The backup program will skip these 'open' files.

Know About the Purpose and Value of Backing Store of Computer Files

- Use passwords
- Understand the Importance of shutting down your computer properly
- Use a UPS (Un-interruptible Power Supply)
- Use electrical surge protection



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Passwords	If your computer has a password that prevents other users from accessing it then do NOT give this password to anybody else. Do not write the password on a card and prop this up next to the monitor and above all do not attempt to hide your access passwords on the underside of your desk (this is the first place most criminals would look if trying to break into your system). Make sure you do not forget your passwords; in many cases, data cannot be recovered once the password is lost.
The Importance of shutting down your computer	<p>When you are using a Windows based system it is important to remember that just switching off the computer or losing power due to a power cut (power outage) can cause loss of data. To protect against this you should save your work regularly. Many programs have a facility that automatically saves your work, say every 10 minutes (or any time interval that you specify).</p> <p>Some operating systems, such as the later versions of Windows 95 and also Windows NT have a facility that will automatically detect that the computer was not properly shut down the last time it was used. If this situation is detected, then a special recovery program will be run that will attempt to fix any damage caused by the power cut. When using Windows 95 or Windows NT and up, you MUST always use the shutdown command (located on the Start menu) to close down the operating system, before switching off the power.</p>
What is a UPS?	A UPS (Un-interruptible Power Supply) is a device that you can attach to your computer that will guard against power cuts (or indeed someone tripping over your power cable and pulling the plug out!). It contains batteries that will keep your computer alive long enough for you to use the shutdown command and turn off the computer in the proper way. This is especially important for PCs on a network that might provide data for many users on the network.
Electrical surge protection	The voltage that is supplied to your computer via the power cable can vary from time to time, and there are occasional power surges. Power surge protection devices are readily available and offer low cost protection again these occasional power surges. In the example illustrated the power surge protection is built into a power adaptor allowing a number of plugs to be plugged into the adaptor.

Know About the Purpose and Value of Backing Store of Computer Files

- **Things computer like:**
 - **Good ventilation**
 - **Clean environment**
 - **Stable, vibration free surface**
- **Things computer don't like:**
 - **Dust**
 - **Drinking and eating over the keyboard**
 - **Heat, Cold or Moisture**
 - **Don't place objects on top of monitors.**
 - **Don't place floppy disks near monitors.**



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Things computers like

- Good ventilation and Clean environment
- Stable, vibration free surface

Things to avoid

- Dust, Drinking and eating over the keyboard
- Heat, Cold, Moisture
- Do not move the system while its switched on, doing so could damage the hard disk inside the machine.
- Do not just switch the computer off at the mains! Follow the correct shutdown procedure or data could be lost.
- Do not place objects on top of monitors. This could block the ventilation holes and cause it to overheat.
- Do not place floppy disks near monitors. Monitors produce a strong electromagnetic field, which can damage floppy disks

What to do if the computer breaks down

If you are working within a large organization, you should be aware of the company's policy if the computer suddenly breaks down. Many large companies has a special computer support department and you should make sure that you know how to contact them in case of emergency.

In many smaller organizations, the situation is much less formalized. If you are not qualified to make repairs on the computer, do NOT attempt to open the computer case and investigate. This is especially true of the computer monitor, inside which, are many components operating at VERY HIGH VOLTAGES, which can kill! If in doubt, get a qualified technician to fix the problem.

Prior to contacting your computer support staff you may (if authorized by your organization) check that the various external components, such as the mouse, keyboard, monitor and network connections are in fact properly connected to the back of the computer. A very common complaint to support groups is that the screen is not working. You may wish to check that someone has not inadvertently switched off the screen, prior to ringing the support group! One of the more common reasons for a network not working is that someone (maybe an overnight cleaner) has accidentally pulled the network cable out of the back of a computer.

Computer Viruses

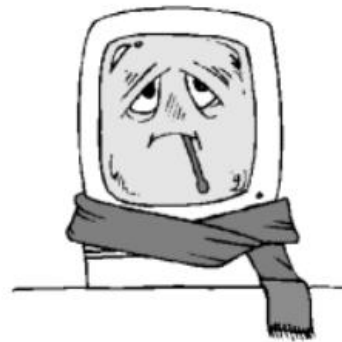
Learning Module Objectives

When you have completed this learning module you will have:

- Knew what are computer viruses
- Knew how do viruses infect PCs
- Knew how to prevent virus damage
- Knew how to make a diskette read-only
- Knew how to password protect your computer

Understand the Term Computer Virus

- What are computer viruses?
 - Viruses are small programs that hide themselves on your disks (both diskettes and your hard disk).
 - Unless you use virus detection software the first time that you know that you have a virus is when it activates.
 - Different viruses are activated in different ways.



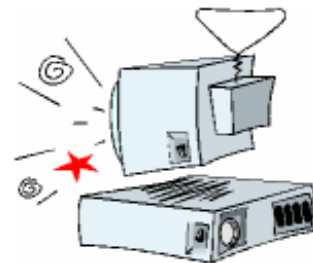
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Understand the Term Computer Virus

What are computer viruses?

Viruses are small programs that hide themselves on your disks (both diskettes and your hard disk). Unless you use virus detection software the first time that you know that you have a virus is when it activates. Different viruses are activated in different ways. For instance, the famous Friday the 13th virus will activate only when it is both a Friday and the 13th of the month. **BEWARE:** Viruses can destroy all your data.



Understand the Term Computer Virus

- **How do viruses infect PCs?**
 - **Viruses hide on a disk and when you access the disk (either a diskette or another hard disk over a network) the virus program will start and infect your computer.**
 - **The worst thing about a computer virus is that they can spread from one computer to another, either via use of infected floppy disk, or over a computer network, including the Internet.**



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How do viruses infect PCs?

Viruses hide on a disk and when you access the disk (either a diskette or another hard disk over a network) the virus program will start and infect your computer. The worst thing about a computer virus is that they can spread from one computer to another, either via use of infected floppy disk, or over a computer network.

The Internet allows you to access files from all over the world and you should never connect to the Internet unless you have a virus-checking program installed on your computer.

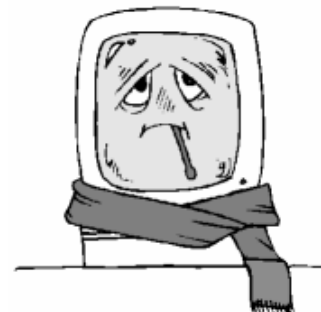
It is vital to keep your virus monitoring software up to date. Many such as Norton Anti Virus allow you to update the program so that the program can check for recently discovered viruses.

More Information:

Macfee anti virus software <http://www.mcafee.com>

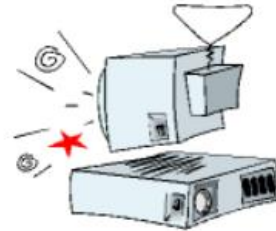
Norton Anti-virus software <http://www.symantec.com/avcenter>

DR Solomon anti-virus software <http://www.drsolomon.com>



Understand the Term Computer Virus

- **How to prevent virus damage**
 - **There are a number of third party anti-virus products available.**
 - **Most of these are better than the rather rudimentary products available within DOS and Windows, but of course you do have to pay for them!**
 - **The main thing about your virus checker is that it should be kept up to date.**
 - **Many companies supply updated disks on a regular basis or allow you to receive updates through an electronic, on-line bulletin board.**



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How to prevent virus damage

There are a number of third party anti-virus products available. Most of these are better than the rather rudimentary products available within DOS and Windows, but of course, you do have to pay for them! The main thing about your virus checker is that it should be kept up to date. Many companies supply updated disks on a regular basis or allow you to receive updates through an electronic, on-line bulletin board.

To make a diskette read-only

If you are using 3 1/2" diskette, there is a notch that can be opened or closed which may be used to protect the disk. To protect the contents of the disk move the notch to the open position (you should be able to see through the hole).

To password protect your computer

You can set a power-on password on your computer. The mechanism for setting this will vary from one computer to another, and is determined by the makers of the computer, rather than by DOS. The advantage of a power-on password is that the computer will not boot to DOS until you supply the correct password. This means that no one else can play around with your computer and in the process accidentally infect it with a virus.

Copyright

Learning Module Objectives

When you have completed this learning module you will have:

- Knew software copyright issues
- Knew what is freeware
- Knew what is shareware
- Knew about software that you find on the internet
- Knew about licenses

Understand Software Copyright

- Be aware of software copyright issues
- Freeware
- Shareware
- What about software that you find on the Internet?
- Software site licenses



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Understand Software Copyright

Software Copyright Issues

Most programs that you purchase are copyrighted and you must not copy them. If you do so you may be breaking the law and if caught, you could find yourself being prosecuted! Many people will buy a copy of a game and make a copy for their friends or other family member. This is also normally unlawful. Even lending your program disks or CD-ROM to other people may be breaking the law in most cases. There are numerous organizations, such as FAST (the Federation Against Software Theft), which are dedicated to preventing the illegal copying of software. In a business situation, if your manager tells you to copy software, ALWAYS first make sure that you have a license that entitles you to copy the software, because in many countries, you will be personally liable for damages!

More Information:

The Federation Against Software Theft <http://www.fast.org.uk>

What is freeware?

Some software is made freely available. Demonstration disks often come under this category. In addition, a lot of software is produced by the educational community and is made freely available. Always read any licenses supplied with such software very carefully before use.

More information:

<http://download.cnet.com/?st.dl.freewarecom..redir>

What is shareware?

Shareware is software that is freely available and is designed to let you use the product for free, for a limited period while you decide if you like it or not. After this period, you must legally either remove it, or pay an amount to the producers of the product.

More information:

<http://shareware.cnet.com>

What about software that you find on the Internet

There are some sites on the Internet run by dubious organization's that might make copies of commercial software freely available. If you download any software from the Internet, make sure that it is legal!

What are site licenses?

Many large companies do not go out and buy a certain amount of 'shrink-wrapped' copies of each software product that they need, instead they will buy a site license. These site licenses are different in their small print, but generally mean that the companies purchasing the license can make a fixed numbers of copies available to their staff, normally via a company network.

Data Protection Act

Learning Module Objectives

When you have completed this learning module you will have:

- Knew about data protection and privacy issues
- Knew about data protection legislation

Know the Data Protection Act in Your Country.

- If your computer system holds information about individuals then you have a moral and legal duty to treat that information with respect.
- In a free society you have a right to ensure that information held about you is not abused.
- In many countries this right is enshrined under data protection laws



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Know the Data Protection Act

Data Protection and Privacy Issues

If your computer system holds information about individuals then you have a moral and legal duty to treat that information with respect. For instance if a police force computer is used by unscrupulous people to gain unauthorized information about a persons private life that would be a clear breach of trust. In the same way doctors, government departments and credit agencies often hold vast amounts of information about the general public, which is both sensitive and private. In a free society you have a right to ensure, that information held about you is not abused. In many countries, this right is enshrined under data protection laws.

Data Protection Legislation

Listed below are the main principles of the UK Data Protection Act. This is meant as an illustration only and should NOT be used for determining liability or operating principles. You must read the full details of the act if you are considering legal implementation. For more information about the UK data protection act please access the following Web sites:

<http://www.hms0.gov.uk/acts/acts1984/1984035.htm#aofs>

<http://www.pro.gov.uk/recordsmanagement/dp/default.htm>

1. The information to be contained in personal data shall be obtained, and personal data shall be processed, fairly and lawfully.
2. Personal data shall be held only for one or more specified and lawful purposes.
3. Personal data held for any purpose or purposes shall not be used or disclosed in any manner incompatible with that purpose or those purposes.
4. Personal data held for any purpose or purposes shall be adequate, relevant and not excessive in relation to that purpose or those purposes.
5. Personal data shall be accurate and, where necessary, kept up to date.
6. Personal data held for any purpose or purposes shall not be kept for longer

- than is necessary for that purpose or those purposes.
7. An individual shall be entitled-
 - (a) at reasonable intervals and without undue delay or expense-
 - (i) to be informed by any data user whether he holds personal data of which that individual is the subject; and
 - (ii) to access to any such data held by a data user; and
 - (b) where appropriate, to have such data corrected or erased.
 8. Personal data held by data users or in respect of which services are provided by persons carrying on computer bureau Appropriate security measures shall be taken against unauthorized access to, or alteration, disclosure or destruction of, personal data and against accidental loss or destruction of personal data.