

Chapter Four

Software Programs

4-1 What is software

What is a Software Program? Programs are called software because they only function when loaded into the computer's RAM memory. Because RAM is volatile, software must be permanently stored on a hard disk. Software programs are created using programming languages that contain commands to perform specific tasks.

It is these commands that users will activate in order to complete the task. The commands can be available in a menu, toolbar button, shortcut keystroke, shortcut menu, or a combination of these options. The commands are based on a set of rules (referred to as algorithms) created in the software program to complete the specific tasks. For example, when you select text in Word to add bullets, after you click on the button in the appropriate toolbar, the Word program actually runs the rule to check that the bullet feature is available, looks to see what format was last chosen (if any), and then applies the feature to the text. Accordingly, these algorithms set the guidelines for how data is inputted into the software program, and the format for the output.

All retail software programs go through a thorough process before they are released for sale.

The software vendors always perform quality controls on their program based on the most commonly used tasks to ensure the minimal amount of problems that could occur once the program is installed on a computer. In most cases, a software vendor generally follows this process:

- 1 - The software program is created or updated based on new technology, request for new features, etc. by programmers who set up the algorithms for the program features. These designers are called programmers as they use programming language (software) to create the codes or rules in the software program for specific tasks. Some popular programming languages include C++, Visual Basic, Fortran, or Pascal.
- 2 - Once developed, copies of the program are sent to designated people outside the software company who agree to test the beta of this program. These testers are selected by the software company based on specific criteria for the software type, e.g., different operating systems, technical users versus beginners, etc.
- 3 - Testing usually occurs for a specific amount of time, wherein feedback is required from the testers back to the software company.
- 4 - The programmers then revise and modify the program as needed based on the feedback, and produce another beta copy. This step may be repeated as many times as needed, depending on the size and type of software program.

5 - Eventually a “gold” copy is created and distributed to a small number of customers that meet a specific criteria, e.g., large company with a variety of computer types and operating systems, specific business needs, hardware vendors, etc.

6 - Generally within a month of the gold copy being released, the final version of the software is released to the general public through retail vendors.

4-2 Upgrading software

As most people know, it is very unusual for software programs to be error free with the first release of the software. A lot of the bugs (errors) that occur generally are items that the software company can't always predict based on how the customer uses the program. Updates or upgrades are not always problems with the software; updates may occur as a result of changes in government rules or requirements, or external factors they have no control over, e.g., tax tables for accounting programs, new viruses that can break into the software program, etc.

Whether you purchase software when it's released or after a few months should depend on your own requirements. When you register your copy of the software, you will receive notices from the software vendor whenever there is an update or upgrade available for the software. This could be through e-mail or actual material received in the mail, based on your preference for these notices at the time you registered the product. Some software vendors will also build in a feature within the program to allow you to schedule or automatically check for online updates, and/or display messages on the screen to indicate a new update is ready for installation.

If you chose to receive updates via the postal mail system, you will receive floppy disks or CDs containing the update for you to install. If you choose to receive the updates via e-mail or an online system, the software program will send you notices generally with a link to where the update can be found. For example, when you register with the vendor for the anti-virus program on your system, you will be given the choice to receive the updates via regular mail, or online. If you do not have an Internet connection yet and choose regular mail, the software vendor will send you media whenever there is a major update needed for the software or protection against a virus (called virus patterns). If you do have an Internet connection and chose to receive updates online, the software vendor then gives you access to an Update feature within the software to get these updates.

Generally the updates will either reduce the amount of problems you might be experiencing with the software or contain the latest edition for the features in the software. There are also drawbacks to updating the software that include:

1. Conflicts with other software (the upgrade now protects your system from potential viruses but you now can't open attachments with e-mails)
2. Conflicts with the operating system (the update contains technology for a new input device but is not being recognized by Windows as it is new to the computer)
3. Problems with the upgrade within the software (features don't work, can't access older files).

Applying the most recent updates/upgrades is not always the best route to take unless you are very experienced with computers and can "tweak" the system if something doesn't work.

It is very prudent to register the software on your system with the software vendor as you will receive notices whenever an update is available. Provided you have access to the Internet, you can always check the software vendor's web site to find specific updates, as needed. There are also a number of organizations, groups, or newsgroups who share information on what the updates are, what they contain, the reason for the update, and whether you should install it or not. Once you receive a notice of the update, you have the option of saving a copy of the update file onto your system instead of automatically installing it from the vendor's web site.

4-3 Upgrading to new versions

Upgrading to New Versions? Software vendors generally release new versions of the software on a yearly or two-year basis, depending on the software. For example, newer versions of accounting programs are traditionally released each year in order to accommodate new tax laws or calculations in addition to new features the software now offers the user. Microsoft releases a newer version of Office (e.g., Word, Excel, PowerPoint, Access, and Outlook) generally every two years. A new version of a software program is developed generally to include new features, fix any bugs or problems with features, make the software compatible for different operating environments or other software, include new technology (e.g., security rights, higher resolution types, etc.), or to reflect changes in governmental laws and regulations. Do you need to buy the new version for your system? The answer depends on whether you want or need the newer features, the software is needed in order to be compatible with other tasks or software you are using, or if it is a requirement for your job. Consider the following before automatically switching to the new software:

1. Are the features in this version crucial for daily tasks?
check the web site for the vendor or speak to your technical support department to find out what's new in the next version and whether it will suit your needs.

2. Can your current computer handle the new software? For example, you cannot run Microsoft Office System 2003 on a computer that does not have the Windows 2000 NT Service Pack 3 or Windows XP operating system installed.
3. How many people may be affected by the change in software on your system? If you are the only one upgrading to the newer version, will documents be compatible between computers? For example, if you upgrade to the Pro version of Simply Accounting to test the features for this version, you will not be able to open the company file created on the Pro version on any other computer in the office if everyone else is using Simply Accounting Basic. Another example could be if you currently use Word but your clients use WordPerfect, you will need to remember to save your files with a format that can be read in WordPerfect.
4. How much training will be involved to have everyone switch to the newest version? There is always some downtime involved when people switch to a new software or software version. For instance, if you are upgrading from Word 2002 to Word 2003.

The Upgrade version is a less expensive choice but does require that you have a Full version of the software already installed on your system, or access to the CD to install other components of the software, as needed. This is an important consideration should your system fail and you need to re-install all the software programs. You will need the original Full version of the software and then the Upgrade version to return to the same state for the software before the system failure. The Full version generally is double the cost of the Upgrade version and contains all the files you will need for this software program.

The choice for upgrade or full versions are applicable even when purchasing software for a large company. The difference here would be that you have the option of purchasing licenses for each computer where this program will be installed. Generally the network administrator will receive one CD with the software program and documentation with a volume license key that enables him/her to install the software on all computers requiring this software program.

4-4 Application programs

An application program is a software program that performs a specific function such as accounting, word processing, or drafting. Selecting the correct software program for a given task may be more difficult than selecting the correct hardware. However, there are some standard categories of application programs to choose from:

Word Processing

Presentations

Graphics

Electronic Mail

Utility

Accounting

Spreadsheets

Database Management

Multimedia

Web Browsers

Suite

Customized

Within each category, there are several software programs that have gained industry-wide acceptance.

A program that has “for DOS” after its name means it will be primarily text- or character-based, i.e., you cannot see graphic pictures or font styles, etc. Some of the newer DOS-based programs may provide the capability of viewing pictures, font styles, etc., but are still limited in their “graphical” display. Most programs of this type are customized programs suitable for the operating system. A program that has “for Windows” after its name was designed for use within the Windows platform, e.g., Word for Windows, CorelDRAW for Windows, Excel for Windows, etc.

This means you must have Windows already installed on your computer before you can install or use this program. Windows displays the commands and features for that program in a picture layout, and allows you to see the text as it will appear when printed. A program that has “for the Macintosh” after its name was designed for use with Apple computers. All of the programs available for the Macintosh computer display all commands and features in a picture layout. While many programs share a number of features, look closely what you want to accomplish and which software programs should be able to handle at least 80% of these tasks. Consider making a list of all the tasks you want to accomplish on the computer, and then begin checking off items with comparing software programs. Also consider the amount of training time needed in order for you to be able to use that program. Choosing a software program that may be too advanced for your needs will be just as frustrating as choosing one that works well for only 20% of your tasks.

4-5 Multimedia programs

These types of programs allow you to extend the capabilities of graphics design and add media elements into your file, such as video, music, or animation. These programs are becoming much easier to use for people who aren't graphics designers; as such, multimedia elements are being added to documents that are published on a web site for the Internet or an intranet. As with graphics design programs, you need to save the files in the correct file format in order for the computer to recognize the file and be able to play it. Music and video files use the same type of file format, although music files are at a different level (3) than video (level 1, 2 or 4). The file formats used mostly for video are mpg/mpeg (Moving Picture Experts Group) or ani (includes animation). The most commonly used file format for music files are mp3 or wav (Windows Audio Video). These file types can be read from any computer that has the Windows Media or QuickTime software programs installed.

The following is a list of some of the popular multimedia programs available. As many programs have integrated features, multimedia has grown to include any software where graphics, music, or video can be incorporated. There are many desktop publishing programs targeted to small business or home users that have the ability to manipulate pictures, music, or video within the program. Examples of some multimedia programs include:

1 - Flash is owned by Macromedia, Inc. and is available for PC and Macintosh. Flash is also a graphics design program but is designed to take graphics to a new level, i.e., add elements to turn files into multimedia type files, animation, video, e-learning, etc.



2 - Shockwave is owned by AtomShockwave Corp. and is available for download from the Internet for both PC and Macintosh machines. Shockwave allows you to view video, animation, games, and other programs for entertainment purposes from their web site.



3 - Discreet products are owned by AutoDesk and include products such as 3ds Max, Fire, and Combustion. These products provide a variety of multimedia capabilities for objects, e.g., animation, rendering, 3D creation, etc. As there are so many products for this medium, we recommend you visit the AutoDesk web site for further details.

4 - Director is owned by Macromedia, Inc. and is available for both PC and Macintosh machines. This program is designed to allow you to add interactivity to your web site, intranet, or programs/files to be put on CD/DVD. There are a multitude of programs targeted for the small business or home user that provide multimedia capabilities such as Music Maker (similar to having an in-house music studio for mixing music files), Publisher 2003 with Digital Imaging, MovieMaker, etc. Some of these programs target a specific function whereas others offer several features.

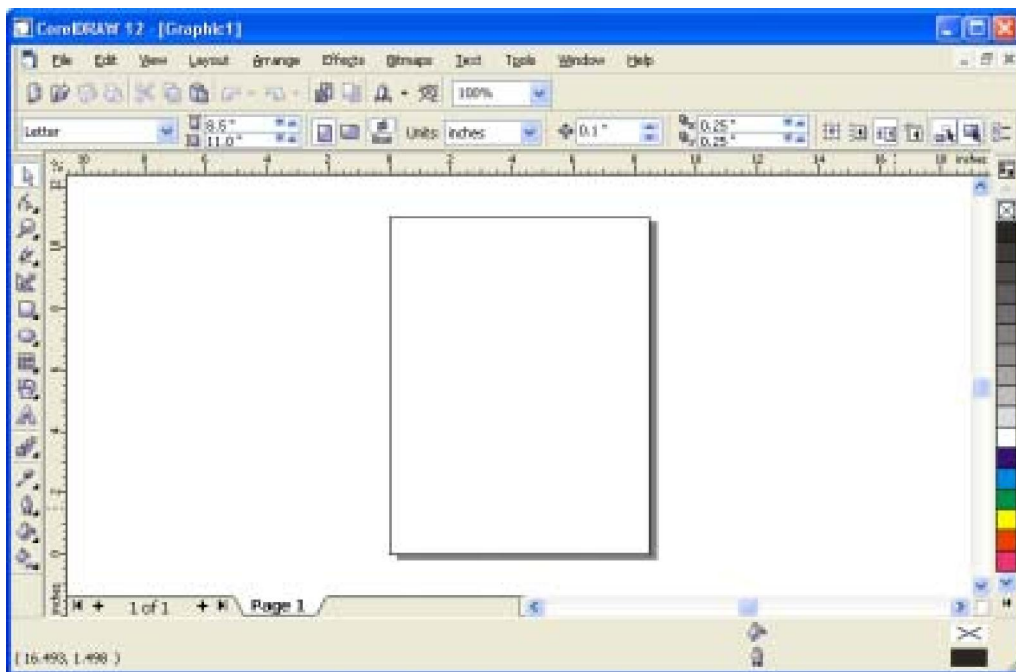
4-6 Graphic programs

the most common file types for pictures include tiff (Tagged Image File Format), bmp (Bitmap), gif (Graphics Interface Format), wmf (Windows Metafile Format), or jpeg/jpg (Joint Photographic Experts Group). Each file format affects the quality of the picture in different ways, depending on which program was used

to create the picture and what effects were used on the picture within that graphics design program.

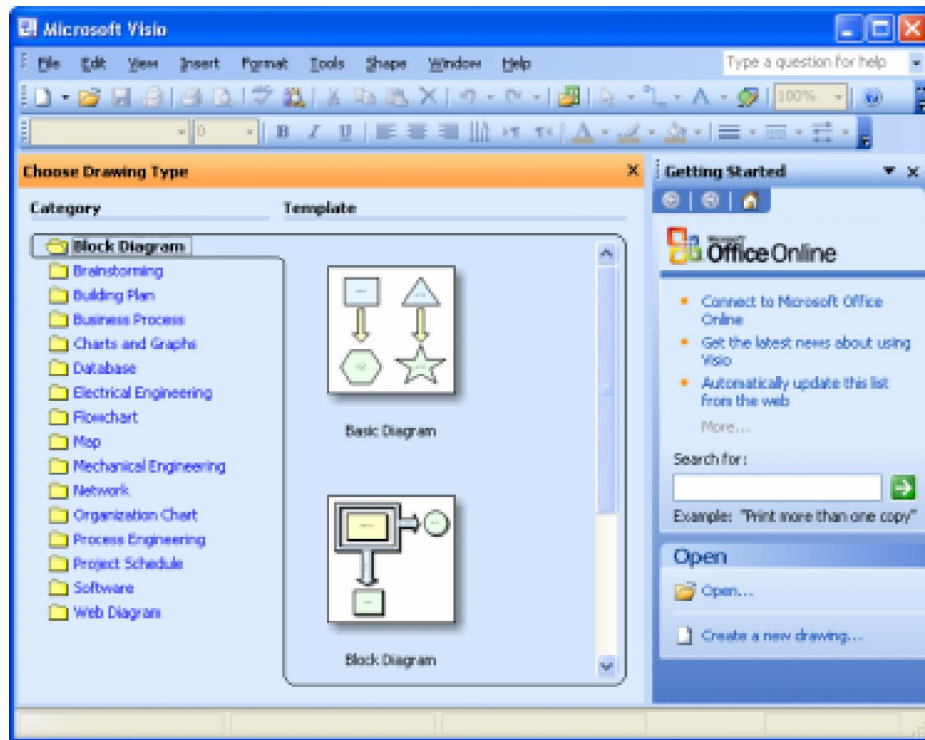
Some of these programs are also targeted to children to show how easy it can be to manipulate pictures or text as appropriate for their needs. Examples of different graphic programs include:

1 - CorelDRAW is owned by Corel Corporation and has been very popular with graphic design artists for many years. CorelDRAW is available for both PC and Macintosh machines.

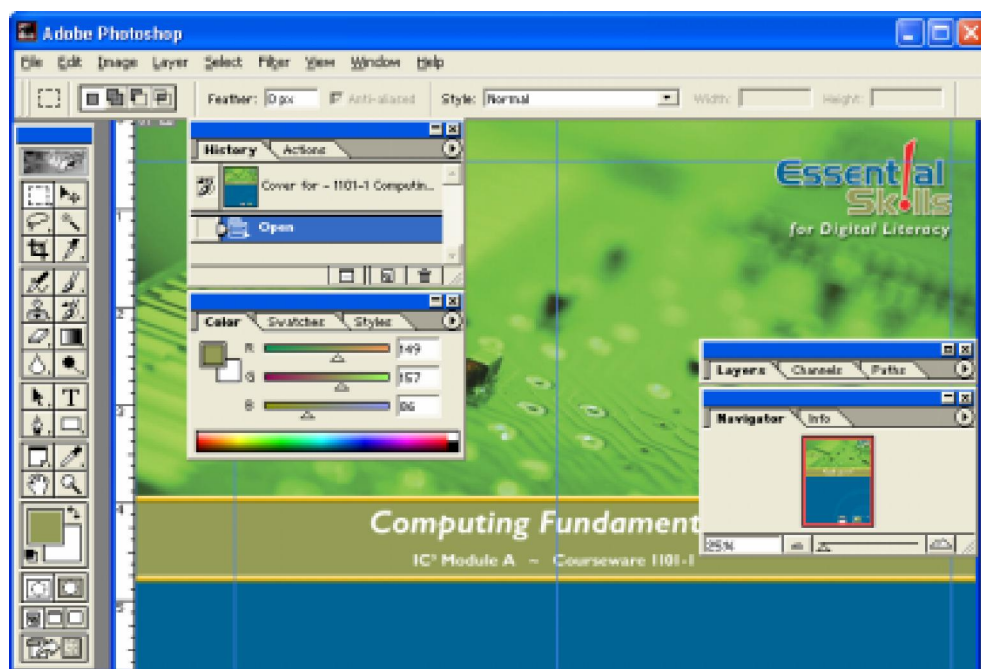


2 - Illustrator is owned by Adobe Corporation and has become very popular in the last few years with graphic design artists on both PC and Macintosh machines.

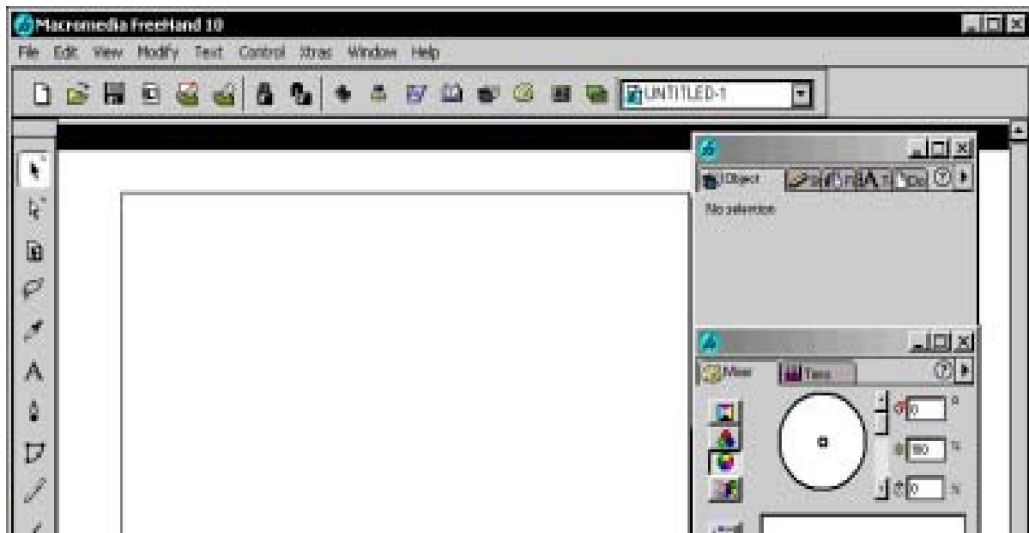
3 - Visio is owned by Microsoft Corporation and is more of a diagramming graphics program for people who need to demonstrate their ideas, systems, or design in a diagram, e.g., flow charts, processes, floor plans, etc.



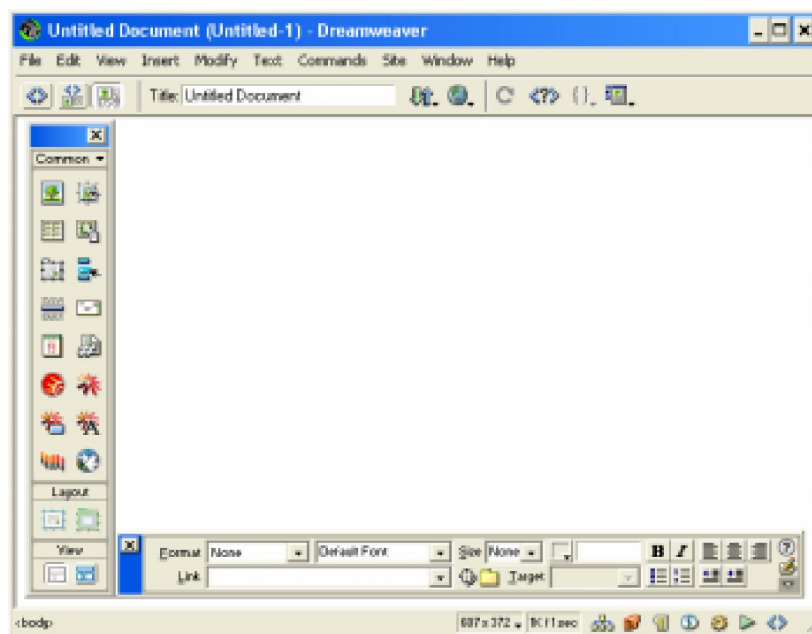
4 - Photoshop is owned by Adobe Corporation and available for both PC and Macintosh. This graphics design program is very popular and also includes a program called ImageReady.



5 - FreeHand is owned by Macromedia, Inc. and available for PC and Macintosh machines. This graphics design program is also a popular one.



6 - Dreamweaver is owned by Macromedia, Inc. and available for PC and Macintosh machines. Dreamweaver is, in essence, a web design program but it contains elements for creating graphics that can then be published on web pages on the Internet or an intranet.



Some of the end-user type of graphics design programs include PrintShop, Greeting Card (i.e., Hallmark), PictureIt!, PhotoShop Album, etc. There are many programs targeted to the home user, the small business user, or anyone who wants to be able to manipulate their pictures for web pages, promotional material, reports, etc. Each program has similar tools with specialized tools to match the software focus.