

Chapter 5

Desktop Publishing

Objectives of this chapter:

5.1 Desktop Publishing

5.2 Desktop –publishing software

5.3 Word Processing vs. Desktop Publishing

5.4 WYSIWYG Feature

5.5 Graphics

5.6 Margins

5.7 Fonts

5.8 Printers

Introduction

When documents and images are printed, these are "published." Before computers became common place, the publishing process required large print presses that copied and duplicated pages. In order to print images and words on the same page, the text and graphics would have to be printed separately, cut out, placed on a single sheet, taped in place, then copied and printed. Fortunately, computers with graphical user interfaces have enabled desktop publishing, which allows this process to be done electronically.

5.1 Desktop publishing:

Any time we use a computer to create a printable document, it can be considered desktop publishing. Desktop publishing programs can be used to

create books, magazines, newspapers, flyers, pamphlets, and many other kinds of printed documents. Word processing programs like Microsoft Word can be used for basic desktop publishing purposes.

Complete desktop publishing involves the combination of typesetting (choosing fonts and the text layout), graphic design, page layout (how it all fits on the page), and printing the document. However desktop publishing can also be as simple as typing and printing a school paper. In order to desktop publish, all we need is a computer, monitor, printer, and software that can create a printable document. While that might cost more than a pen and paper, it certainly is cheaper than a printing press.

5.1.1 Definition:

Desktop publishing is the process of using a computer and specific types of software to combine text, images and artwork to produce documents properly formatted for print or visual consumption.

5.1.2 Desktop Publishing Opened Visual Communication To All

Desktop publishing isn't limited to professionals. With the advent of desktop publishing software and affordable desktop computers, a wide range of people, including non-designers and others without graphic design experience, suddenly had the tools to become desktop publishers.

Freelance and in-house graphic designers, small business owners, secretaries, teachers, students and individual consumers do desktop publishing.

Non-designers can create visual communications for commercial digital printing, printing on a printing press, and for desktop printing at home or in the office.

Although desktop publishing encompasses everything from the initial design to printing and delivery of the finished product, the core parts of desktop publishing are the page layout, text composition and the prepress or digital file preparation tasks.

5.2 Desktop-publishing softwares

The primary software used in desktop publishing is page layout software and web design software. Graphics software, including drawing software, a photo editor and word processing software, are also important tools of the graphic designer or desktop publisher. The list of available software is lengthy, but some softwares are seen on just about everyone's must-have list depending on what they are trying to accomplish.

5.2.1 Page Layout Software for Printing

- Adobe InDesign
- PagePlus Series from Serif
- QuarkXpress

5.2.2 Page Layout Software for Office

- Microsoft Office Suite
- Apple iWork Suite

5.2.3 Graphics Software

- Adobe Illustrator
- Corel Draw
- Inkscape

5.2.4 Photo Editing Software

- Adobe Photoshop
- Corel PaintShop Pro

5.2.5 Web Design Software

- Adobe Dreamweaver CC
- Adobe Muse

5.3 Word Processing vs. Desktop Publishing

Both word processing and desktop publishing are similar in many ways but different in areas that cover the publication of documents.

The similarities between the two are:

- Both deal with text that can be formatted.
- Both can work with tables and pictures.
- Both have many similar features like WordArt, Clip Art, and text styles.

The differences between the two are:

• Word processing involves creation, editing, and printing of text while desktop publishing involves production of documents that combine text with graphics.

• Word processing is difficult to layout and design as compared to desktop publishing. Thus, desktop publishing is used to work on things like newsletters, magazines, adverts, and brochures where layout is important. Word processing documents are common for simple memos, letters, manuscripts, and resumes.

5.4 WYSIWYG Feature:

Pronounced *WIZ-zee-wig*. Short for ***what you see is what you get***. A WYSIWYG [application](#) is one that enables us to see on the [display screen](#) exactly what will appear when the document is printed. A WYSIWYG is a

system in which content (text and graphics) can be edited in a form closely resembling its appearance when printed or displayed as a finished product, such as a printed document, web page, or slide presentation. WYSIWYG is especially popular for [desktop publishing](#)

With desktop publishing, we can increase productivity, minimize production cost, enhance the appearance of our documents, improve the level of creativity, reduce the time taken for printing and produce customized documents. The best part about DTP is that we can create professional-looking documents, without the need for graphic designer.

5.5 Graphics

A graphic is an image or visual representation of an object. Therefore, computer graphics are simply images displayed on a computer screen. Graphics are often contrasted with text, which is comprised of characters, such as numbers and letters, rather than images.

Computer graphics can be either two or three-dimensional. Early computers only supported 2D monochrome graphics, meaning they were black and white (or black and green, depending on the monitor). Eventually, computers began to support color images. While the first machines only supported 16 or 256 colors, most computers can now display graphics in millions of colors.

There are two main types of 2D graphic:

- Bitmap or Raster graphics
- Vector graphics

5.5.1 Bitmap or raster graphics

Bitmap graphics consist of many tiny dots called **pixels**. It is possible to edit each individual pixel using **bitmap graphics software** like Adobe Photoshop .

Examples of **bitmap graphics** are a digital photograph or a scanned image.

The amount of detail we can draw depends on the number of **pixels per square inch (PSI)**. Since the computer has to store information about every single pixel in the image, the file size of a bitmap graphic is often quite large. When we resize a bitmap graphic, it tends to lose its quality.

5.5.2 Vector graphics

Vector graphics are based on control points which are connected by lines and curves called **vector paths** or **vectors**. Vector paths can be used to make shape **objects**. It is possible to edit each shape object separately, for example, to change the shape, outline type (stroke), fill, size or position.

Vector graphics software includes Adobe Illustrator and CorelDRAW.

When a vector graphic is resized, it doesn't lose quality. This is because the software works out the new relationships between control points and redraws the image at the new size. Vector graphics do not store information about each pixel so file size does not depend on image size. Instead it depends on how much detail is in the image.

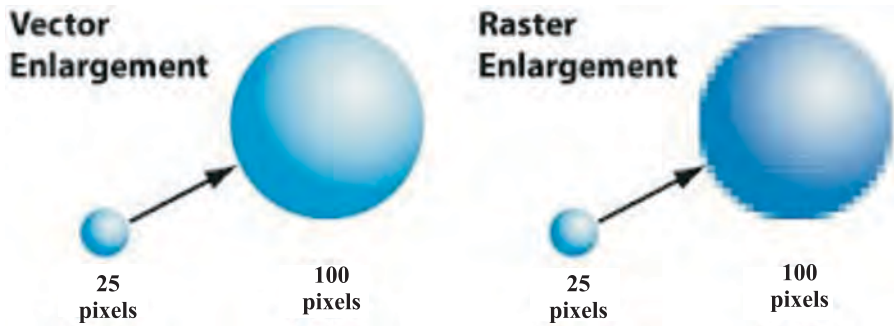


Fig. 5.1

3D graphics started to become popular in the 1990s, along with 3D rendering software such as CAD and 3D animation programs. By the year 2000, many video games had begun incorporating 3D graphics, since computers had enough processing power to support them. Now most computers now come with a 3D video card that handles all the 3D processing. This allows even basic home systems to support advanced 3D games and applications.

5.6 Margins

A margin is the area between the main content of a page and the page edges. The margin helps to define where a line of text begins and ends. A page to include top, Bottom, Left and Right margin as shown in fig 5.2.

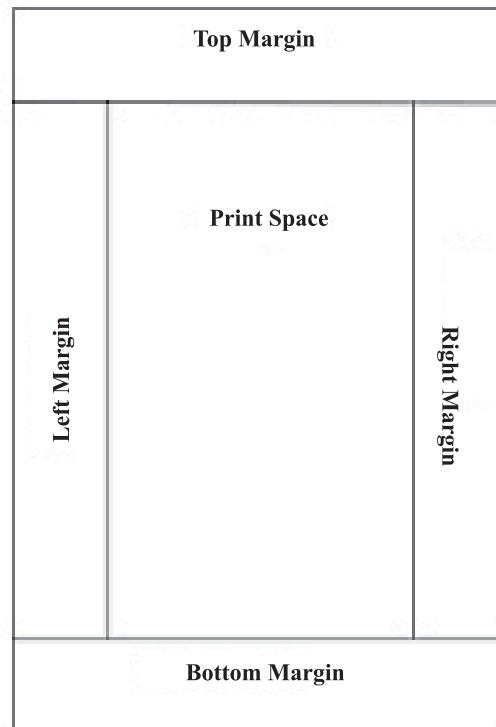


Fig. 5.2

The default margins are usually defined as one inch on all sides. However, depending on the requirement, the margins may vary. These margins create a frame around the content of the page so that the text does not run all the way to the edges. The white space along the edges of the document makes the page look cleaner and the text is easier to read.

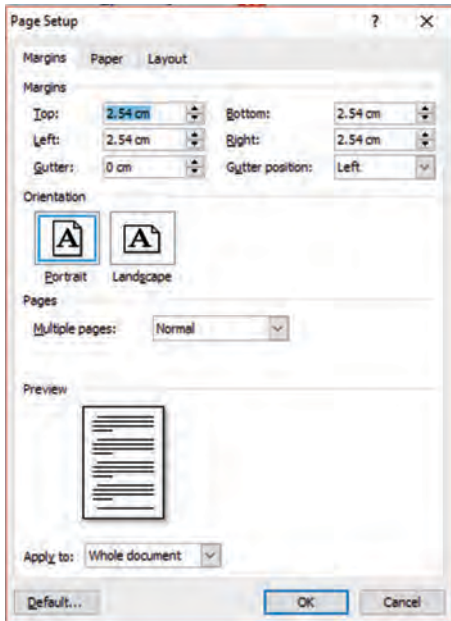


Fig. 5.3

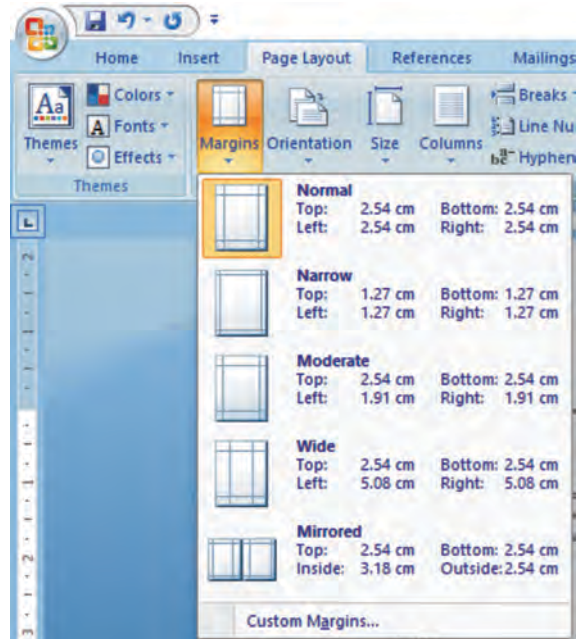


Fig. 5.4

5.6.1 Gutter position

A **gutter margin** setting adds extra space to the side **margin** or top **margin** of a document that we plan to bind. A **gutter margin** helps ensure that text isn't hidden by the binding.

5.7 Fonts

A font is a set of printable or displayable text characters in a specific style and size or we can say that a font is a specific typeface of a certain size and style. A typeface is a set of characters of the same design. These characters include letters, numbers, punctuation marks, and symbols. Some popular typefaces include Arial, Helvetica, Times, and Verdana. While most computers come with a few dozen typefaces installed, there are thousands of typefaces available. Because they are vector-based (not bitmaps), typefaces can be scaled very large and still look sharp. The term "typeface" is often confused with "font," which is a specific size and style of a typeface. For example, Verdana is a typeface, while Verdana 10 pt bold is a font. It's a small difference, but is good to know.

Arial

Arial Regular	Arial Narrow Regular
<i>Arial Italic</i>	<i>Arial Narrow Italic</i>
Arial Bold	Arial Narrow Bold
<i>Arial Bold Italic</i>	<i>Arial Narrow Bold Italic</i>
Arial Black	Arial Rounded MT Bold




Fig. 5.5

5.8 Printer

A printer is an external output device that takes data from a computer and generates output on a paper in the form of graphics / text.

There are two types of printers.

- Impact Printers
- Non-Impact Printers

5.8.1 Impact printers

An impact printer has a head that contains pins to make contact with the paper. It usually forms the print image by striking its pins on a inked ribbon against the paper. Following are some examples of impact printers.

5.8.1.1 Dot-Matrix Printers

The dot-matrix printer uses print heads containing from 9 to 24 pins. These pins produce patterns of dots on the paper to form the individual characters. The 24 pin dot-matrix printer produces more dots than a 9 pin dot-matrix printer, which results in much better quality and clearer characters. The general rule is: the more pins, the clearer the letters on the paper. The pins strike the ribbon individually as the print mechanism moves across the entire print line in both directions, i-e, from left to right, then right to left, and so on. The user can produce a color output with a dot-matrix printer (the user will change the black ribbon with a ribbon that has color stripes). Dot-matrix printers are inexpensive and typically print at speeds of 100-600 characters per second.



Fig 5.6 Dot Matrix Printer

5.8.1.2 Daisy-wheel Printers

In order to get the quality of type found on typewriters, a daisy-wheel impact printer can be used. It is called daisy-wheel printer because the print mechanism looks like a daisy; at the end of each “Petal” is a fully formed character which produces solid-line print. A hammer strikes a “petal” containing a character against the ribbon, and the character prints on the paper. Its speed is slow typically 25-55 characters per second.



Fig 5.7 Daisy Wheel Printer

Note:

dot matrix printer and daisy wheel printer comes in the category of character-at-a-time printer.

5.8.1.3 Line Printers

In business where enormous amount of material are printed, the character-at-a-time printers are too slow; therefore, these users need line-at-a-time printers. Line printers, or line-at-a-time printers, use special mechanism that can print a whole line at once; it can typically print the range of 1,200 to 6,000 lines per minute. Drum, chain, and band printers are line-at-a-time printers.



Fig 5.8

5.8.2 Non-Impact Printers

Non-impact printers do not use a striking device to produce characters on the paper; and because these printers do not strike hammer against the paper its much quieter. Following are some non-impacted printers.

5.8.2.1 Ink-jet printers

Ink-jet printers work in the same fashion as dot-matrix printers in the form images or characters with little dots. However, the dots are formed by tiny droplets of ink. Ink-jet printers form characters on paper by spraying ink from tiny nozzles through an electrical field that arranges the charged ink particles into characters at the rate of approximately 250 characters per second. The ink is absorbed into the paper and dries instantly. Various colors of ink can also be used.



Fig 5.9

One or more nozzles in the print head emit a steady stream of ink drops. Droplets of ink are electrically charged after leaving the nozzle. The droplets are then guided to the paper by electrically charged deflecting plates [one plate has positive charge (upper plate) and the other has negative charge (lower plate)]. A nozzle for black ink may be all that's needed to print text, but full-color printing is also possible with the addition of needed to print text, three

extra nozzles for the cyan, magenta, and yellow primary colors. If a droplet isn't needed for the character or image being formed, it is recycled back to its input nozzle.

Several manufacturers produce color ink-jet printer. Some of these printers come with all their color inks in a cartridge; if we want to replace on color, we must replace all the colors. Other color ink-jet printers allow us to replace ink individually. These printers are a better choice if user uses one color more than other colors. These printers produce less noise and print in better quality with greater speed.

5.8.2.2 Laser printers

A laser printer works like a photocopy machine. Laser printers produce images on paper by directing a laser beam at a mirror which again directs the beam onto a drum. The drum has a special coating on it to which toner (an ink powder) sticks. Using patterns of small dots, a laser beam conveys information from the computer to a positively charged drum to become neutralized. From all those areas of drum which become neutralized, the toner detaches. As the paper rolls by the drum, the toner is transferred to the paper printing the letters or other graphics on the paper. A hot roller bonds the toner to the paper.



Fig 5.10

Laser printers use buffers that store an entire page at a time. When a whole page is loaded, it will be printed. The speed of laser printers is high and it prints quietly without producing much noise. Many home-use laser printers can print eight pages per minute, but faster printer can print approximately 21,000 lines per minute, or 437 pages per minute (if each page contains 48 lines). When high speed laser printers were introduced they were expensive. Developments in the last few years have provided relatively low-cost laser printers for use in small businesses.



Points to Remember

1. In order to desktop publish; all we need is a computer, monitor, printer, and software that can create a printable document.
2. Desktop publishing hardware and software are also used to design and produce web pages.
3. The primary software used in desktop publishing is page_layout software and web design software.
4. Both word processing and desktop publishing are similar in many ways but different in areas that cover the publication of documents.
5. A graphic is an image or visual representation of an object.
6. A margin is the area between the main content of a page and the page edges.
7. *A printer is an external output device that takes data from a computer and generates output in the form of graphics / text on a paper*

Exercise

1. Multiple Choice Questions:

- 1) Programs that can be used to create books, magazines, newspapers, flyers, pamphlets, and many other kinds of printed documents.
 - a. Desk Publishing
 - b. Desk Top Publishing
 - c. Top Publishing
 - d. Publishing
- 2) That enables us to see on the display screen exactly what will appear when the document is printed.
 - a. WYSWJKI
 - b. WKSWUG
 - c. WUSIWUG
 - d. WYSIWYG
- 3) A printer that works like a photocopy machine
 - a. Laser
 - b. InkJet
 - c. Line
 - d. Drum
- 4) _____ is a visual representation of objects
 - a. Charts
 - b. Graphics
 - c. Frames
 - d. Fonts
- 5) Printer that print image by pressing an inked ribbon against the paper using a hammer or pins.
 - a. Ink-jet
 - b. Impact
 - c. Non impact
 - d. Laser

Fill in the banks

- 1) Arial, Helvetica, Times, and Verdana etc. are examples of _____ and they have same _____.
- 2) A **Gutter margin** setting adds extra space to the _____ **margin** or _____ **margin** of a document that we plan to bind.

- 3) In web pages the content is _____, not designed for ____.
- 4) Laser printers use _____ that stores an _____ at a time.

True/False

- 1) DTP stands for Desk Top Publishing.
- 2) Desktop publishing hardware and software is also used to design and produce web pages.
- 3) In Ink-Jet Printer, the ink can be absorbed into the paper and dries instantly.
- 4) The dot-matrix printer uses print heads containing from 19 to 124 pins.

Very short Answers Type Questions

- 1) Which printer can typically print the range of 1,200 to 6,000 lines per minute?
- 2) Which image can be either two or three-dimensional.
- 3) Which printer has a special coating on it to which toner (an ink powder) sticks?
- 4) A set of characters of the same design is called as?

- 5) The area between the main content of a page and the page edges is called as?

Short Answer type Questions

- 1) What is Desktop Publishing?
- 2) What are the various types of printers?
- 3) What is margin?
- 4) What do you mean by Gutter Position?
- 5) What are Graphics?
- 6) Explain WYSIWYG feature.

Long Answer type questions

- 1) What is the difference between Vector Graphics and Bitmap Graphics?
- 2) Describe Desktop Publishing & List any five software used for Desktop Publishing.
- 3) What is the difference between Impact and Non-Impact printers?
- 4) What are non-impact printers explain laser & inkjet printers.

Answers Key

Questions	Multiple Choice	Fill in the Blanks	True or False	Very Short Answer
1	Desk Top Publishing	Typeface, design	.True	Line Printers
2	WYSIWYG	Side, top	.True	Computer Graphics
3	Laser	Viewable, print	.True	Laser Printers
4	Graphics	Buffers, entire page	False	Typeface
5	Impact	-	-	Margins